

**FOCUS  
ON YOUR  
GOALS**





*"Through creativity, collaboration, and an unwavering commitment to innovation, let us continue building a world where ideas become opportunities."*

## ALIREZA RASTEGAR

It is with great pride and sincere pleasure that I welcome you to the Silicon Valley International Invention Festival (SVIIF 2026) a global celebration of creativity, scientific excellence, entrepreneurship, and the limitless potential of human innovation.

Since its establishment in 1968, the International Federation of Inventors' Associations (IFIA) has remained committed to empowering inventors, promoting innovation, encouraging international cooperation, and creating opportunities for creative minds to transform ideas into solutions that benefit humanity.

On this special occasion, I express my deepest gratitude to the visionary founders of IFIA, our former Presidents, Executive Committee members, national representatives, volunteers, and international partners whose dedication and leadership have shaped our Federation over the decades. Their enduring efforts have established IFIA as one of the world's leading organizations supporting inventors and fostering cooperation among governments, universities, research institutions, industries, and innovation ecosystems worldwide.

Today, innovation is one of humanity's greatest forces for addressing global challenges. From healthcare and clean energy to artificial intelligence, sustainable development, education, agriculture, and advanced manufacturing, inventors continue to transform ideas into solutions that improve lives and build a better future.

This year marks another important milestone with the official revival of the International Youth Invention Olympiad, originally established in 1998 with the support of the World Intellectual Property Organization (WIPO) and IFIA's international partners. Through this initiative, we reaffirm our commitment to discovering, encouraging, and empowering the next generation of innovators while preserving a legacy that continues to inspire young inventors worldwide.

Accordingly, SVIIF 2026 proudly features two distinguished international competition divisions: the General Inventors Division and the International Youth Invention Olympiad. This renewed structure provides age-appropriate evaluation under internationally recognized standards, creating a more professional, equitable, and inspiring environment for innovation.

The Silicon Valley International Invention Festival reflects the very values upon which IFIA was founded. It is where inventors meet investors, researchers collaborate with industry, universities connect with entrepreneurs, and ideas become technologies with global impact. Beyond competition, SVIIF is a platform for cooperation, commercialization, knowledge exchange, and international friendship.

My sincere appreciation goes to our international partners, supporting organizations, distinguished members of the International Jury, academic and industrial collaborators, sponsors, volunteers, and the organizing committee whose dedication has made this remarkable event possible.

To every participant, I extend my heartfelt congratulations. Every invention reflects courage, perseverance, creativity, and the determination to build a better future through knowledge and innovation. Whether you are presenting your first invention or the result of decades of experience, your contribution enriches our global innovation community.

On behalf of the International Federation of Inventors' Associations (IFIA), I wish you an inspiring and successful experience at SVIIF 2026. May this festival open new opportunities for collaboration, investment, friendship, and technological advancement while bringing innovative solutions closer to the people and communities they are meant to serve.

**The future is not something we inherit it is something we invent. Together, through creativity, collaboration, and an unwavering commitment to innovation, let us continue building a world where ideas become opportunities, inventions become solutions, and innovation serves humanity.**

With my highest regards,

Alireza Rastegar  
President  
International Federation of Inventors' Associations (IFIA)

*Rastegar*



*"SVIIF celebrates the best inventions from around the world. It also acts as a bridge between inventors and investors."*

## MR. MARCO M. ALEMÁN

I warmly congratulate the International Federation of Inventors' Associations (IFIA) on organizing the Silicon Valley International Invention Festival (SVIIF 2026), to be held in Santa Clara, California.

SVIIF has become a trusted platform for innovators, giving participants some of the best support and resources available at any invention exhibition.

The World Intellectual Property Organization (WIPO) is honored to serve as co-patron of this event, alongside IFIA and with the generous support of the United Inventors Association (UIA). WIPO is firmly committed to helping innovators turn their ideas into successful products, building on our long-standing partnerships.

SVIIF celebrates the best inventions from around the world. It also acts as a bridge between inventors and investors and opening new markets across borders.

Events like SVIIF reflect the energy of the global innovation landscape that we track each year through the WIPO Global Innovation Index (GII). They remind us that good ideas know no borders, and that bringing inventors together is essential for keeping innovation strong and a force for growth and progress.

WIPO provides key services to support innovators. Our global network of Technology and Innovation Support Centers (TISCs) provides key support for innovators. These centers offer a wide range of services, including access to specialized technology databases, expert search and analysis, licensing opportunities, and help in bringing inventions to market.

The WIPO INSPIRE platform gives innovators access to world-class intellectual property resources at little or no cost. It helps them gain essential knowledge and make use of patent databases, legal status information, advanced patent analytics, and technology transfer strategies.

WIPO is also a leader in intellectual property analytics, providing insights that support economic growth and development. Our biennial WIPO Technology Trends (WITT) publication combines patent data with scientific research, policy analysis, economic impact assessments, and expert commentary. Together with our patent landscape reports, these resources help guide policy decisions, research planning, and technology transfer.

The Inventor Assistance Program (IAP) is one of our most valuable initiatives.

It connects inventors and start-ups with limited resources to volunteer patent professionals, who offer free guidance to help protect their inventions both at home and abroad. We are especially grateful for IFIA's continued sponsorship of this program, and I extend my personal thanks to Mr. Alireza Rastegar, President of IFIA, for his organization's steadfast support.

As SVIIF 2026 prepares to showcase the next generation of world-changing inventions, WIPO reaffirms its commitment to building an inclusive and dynamic global innovation ecosystem. We look forward to the new partnerships, bold ideas, and lasting connections this Festival will inspire.

**I wish SVIIF 2026 every success and look forward to the remarkable innovations it will reveal.**

Marco M. Alemán  
Assistant Director General  
World Intellectual Property Organization (WIPO)





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*"SVIIF brings global innovators together to showcase groundbreaking ideas, build partnerships, and shape the technologies and solutions of tomorrow."*

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## LISA M. GILLMOR

**G**reetings,  
On behalf of the City of Santa Clara, it is my pleasure to welcome you to the 5th Silicon Valley International Invention Festival (SVIIF 2026) at the Santa Clara Convention Center.

In the heart of Silicon Valley, Santa Clara is proud to host innovators, entrepreneurs, researchers, students, investors, and industry leaders from around the world. SVIIF has become a premier international forum where groundbreaking ideas are showcased, meaningful partnerships are formed, and the next generation of technologies and solutions are introduced to a global audience.

Innovation has been a defining characteristic of our community, and events like SVIIF demonstrate the power of creativity, collaboration, and entrepreneurship to address today's challenges and shape tomorrow's opportunities. We are honored that Santa Clara serves as the gathering place for this remarkable exchange of ideas and cultures.

I extend my sincere congratulations to the organizers, exhibitors, judges, and participants whose dedication and ingenuity make this festival possible. Your contributions help inspire future innovators while advancing scientific discovery, technological progress, and international cooperation.

Thank you for choosing Santa Clara as the home of the 5th Silicon Valley International Invention Festival. I wish you an engaging, successful, and memorable event.

With my highest regards

Mayor Lisa M. Gillmor



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*"Events like SVIIF bring our mission to life, highlighting the transformative impact of invention on industries, communities, and lives."*

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## CARMINE DENISCO

**D**ear Inventors, Associations, & Participants of SVIIF, It is with great pride and excitement that I welcome you to the 2026 Silicon Valley International Invention Festival (SVIIF).

On behalf of the United Inventors Association (UIA), I'd like to thank the International Federation of Inventors' Associations (IFIA), President Alireza Rastegar, and the entire organizing team for putting together this important global gathering. We are honored to support an event that champions creativity, celebrates innovation, and uplifts the spirit of inventorship worldwide.

SVIIF serves as a vital platform for inventors to showcase their work, gain valuable exposure, and forge lasting connections with industry leaders, investors, and fellow entrepreneurs. At the UIA, our mission is to provide education, advocacy, and resources to inventors across the United States and around the globe. Events like SVIIF bring our mission to life, highlighting the transformative impact of invention on industries, communities, and lives.

This year's festival continues to build bridges between multiple countries, breaking down barriers and opening doors for collaboration. The caliber of inventions presented here speaks volumes about the dedication and imagination of the global inventor community. It is truly inspiring to witness firsthand the talent and passion that exists in this space.

To all participants, whether you're showcasing a prototype, building connections, attending virtually, or simply here to learn, I encourage you to embrace every opportunity this event offers. Let it be a launchpad for your next big idea, your next partnership, or your next step forward.

Thank you for your continued contributions to innovation and entrepreneurship. I look forward to seeing the future you're helping to shape.

With appreciation,  
Carmine Denisco  
President  
United Inventors Association (UIA)





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*"It celebrates not only  
remarkable inventions  
but also the  
determination,  
imagination, and  
perseverance that  
transform ideas into  
meaningful innovations."*

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## JOHN J. CALVERT

**D**ear Inventors, Young Innovators, Researchers, Entrepreneurs, Distinguished Guests, and Members of the International Innovation Community,

It is both an honor and a privilege to welcome you to the Silicon Valley International Invention Festival (SVIIF 2026), taking place from 14-16 August 2026 in Santa Clara, California, at the heart of Silicon Valley the world's leading center of innovation, entrepreneurship, and technological advancement.

SVIIF is more than an international invention festival; it is a global platform where creativity, scientific excellence, and entrepreneurial vision come together to address real-world challenges and create solutions that improve lives. It celebrates not only remarkable inventions but also the determination, imagination, and perseverance that transform ideas into meaningful innovations.

As President of the International Jury, I am honored to work alongside a distinguished panel of internationally recognized experts who are committed to ensuring that every invention is evaluated with fairness, integrity, transparency, and the highest professional standards. Our responsibility extends beyond selecting award recipients. We are entrusted with recognizing originality, encouraging excellence, and celebrating the remarkable achievements of inventors whose work contributes to the advancement of science, technology, industry, and society.

This year's festival also marks an important step in the continued evolution of the competition. Following the official revival of the International Youth Invention Olympiad, originally established by IFIA in 1998 with the support of the World Intellectual Property Organization (WIPO) and IFIA's international partners, SVIIF now presents two independent international competition divisions: the General Inventors Division and the International Youth Invention Olympiad. This structure enables both adult and young innovators to be evaluated within age-appropriate categories under dedicated judging criteria, further strengthening fairness, professionalism, and international standards of excellence.

Innovation today is measured not only by originality, but also by its ability to solve problems, improve quality of life, support sustainable development, and create lasting value for humanity. During the evaluation process, the International Jury will carefully consider originality, scientific merit, technical excellence, practical application, commercial potential, sustainability, and the broader impact of each invention.

Beyond medals and awards, SVIIF provides a unique opportunity to connect with fellow inventors, researchers, universities, industry leaders, investors, intellectual property professionals, and innovation organizations from around the world. Many successful collaborations, commercialization opportunities, and lifelong professional relationships begin through exchanges at events like this.

I extend my sincere appreciation to the International Federation of Inventors' Associations (IFIA), the organizing committee, my fellow jury members, our partners, sponsors, volunteers, and everyone whose dedication and professionalism have made this international gathering possible.

To every participant, I encourage you to present your innovation with confidence and pride. Every invention represents curiosity, perseverance, and the courage to challenge conventional thinking. Regardless of the final results, your work contributes to a global culture of innovation and inspires future generations of inventors.

On behalf of the International Jury, I wish you every success throughout SVIIF 2026. May this festival inspire new ideas, meaningful collaborations, and lasting friendships, while opening new opportunities for your innovations to make a positive impact around the world.

*I look forward to discovering your remarkable achievements  
and celebrating the ingenuity that continues to shape our  
future.*

With my highest regards,

John J. Calvert  
SVIIF Board Committee Member & President of the Jury  
Former Senior Advisor at the United States Patent and Trademark Office (USPTO)



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*"Yet true  
achievement lies in  
creating something  
that can improve  
lives, strengthen  
communities,  
advance industry,  
or protect our  
environment."*

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## DR. AMIN GHAFOORIPOUR

**A**s an SVIIF Board Committee Member and Chief Jury Judge, it is my great privilege to welcome inventors, innovators, researchers, entrepreneurs, and young talents from around the world to the Silicon Valley International Invention Festival.

SVIIF is more than a competition. It is a global meeting place where creative minds come together to present solutions, exchange knowledge, build meaningful partnerships, and help shape a better future. Every invention featured at this festival represents courage: the courage to question what already exists, transform an idea into reality, and pursue progress despite uncertainty and challenge.

The Jury Board recognizes the dedication, technical achievement, originality, usefulness, and potential impact behind each project. Our responsibility is not only to evaluate inventions with professionalism, fairness, and integrity, but also to honor the remarkable effort of every participant. An award is an important distinction, yet true achievement lies in creating something that can improve lives, strengthen communities, advance industry, or protect our environment.

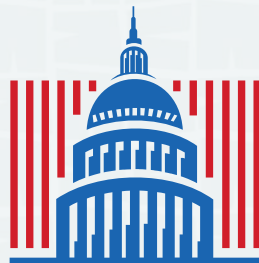
To all participants, I encourage you to use this international stage to share your vision, learn from one another, and develop connections that continue long after the festival. Innovation becomes most powerful when it crosses borders, disciplines, and generations.

On behalf of the SVIIF Board Committee and Jury Board, I extend my sincere appreciation to the inventors, families, mentors, institutions, partners, volunteers, and organizers whose commitment makes this event possible. May your experience at SVIIF inspire new ideas, lasting collaborations, and the confidence to continue turning imagination into meaningful achievement.

Dr. Amin Ghafoori Pour, PE  
SVIIF Board Committee Member & Chair of the Jury Board  
Professor at San José State University  
Director of the SEI San Francisco Chapter  
CEO & President of Padir Consulting Engineers



The following criteria are  
**USED BY THE SVIIF  
JURY BOARD**



**TO ASSESS THE INVENTIONS**



**Patent Status**

National, international, and PCT **patents increase scores**. More patents and higher levels of protection earn higher points.



**Environmental**

Sustainable, eco-friendly inventions score higher. **Solutions that actively reduce environmental harm** are awarded top marks.



**Stage of Development**

From **early concepts** to fully market-ready products. Prototypes and ready-to-launch inventions receive higher scores.



**Scientific Certification**

Recognized **certifications** enhance **credibility**. Both the number and validity of certifications affect the score.



**Usefulness & Innovation**

Practical benefits and **clear improvements** over existing solutions are rewarded.



**Market Demand**

Inventions with broad and ongoing public demand score higher. Seasonal or limited-use inventions score lower.



**Economic Potential**

High potential for revenue generation and job creation earns additional points.



**Technological Advancement**

The more advanced and innovative the technology, the higher the score.



**Commercialization Readiness**

Inventions that are fully prepared for market launch, particularly those supported by feasibility studies, receive the highest scores.

# SILICON VALLEY INTERNATIONAL INVENTION FESTIVAL **JURY BOARD**



**JOHN CALVERT**

SVIIF Board Committee Member  
& President of the Jury  
Former Senior Advisor at the United States  
Patent and Trademark Office (USPTO)

**DR. AMIN GHAFORIPOUR**

SVIIF Board Committee Member  
& Chair of the Jury Board  
Professor at San José State University, Director of  
the SEI San Francisco Chapter, and CEO &  
President of Padir Consulting Engineers



**DR. WIPARAT DE-ONG**

Honorary Chair of the Jury  
Executive Director of the  
National Research Council of Thailand (NRCT)

**DR. T. KIM PARNELL, PE, PHD**

ASME Fellow; IEEE Member; Silicon Valley  
Engineering Council (SVEC) Hall of Fame  
Inductee; Member of the IEEE Consultants'  
Network of Silicon Valley (IEEE-CNSV)



**MATT NUCCIO**

SVIIF Board Committee Member  
Toy Designer, Co-Credited with Designing Creepy  
Crawlers, Tickle Me Elmo, the Nintendo Power Glove,  
POGs, and Laser Challenge; Executive Committee  
Member of the United Inventors Association and IFIA



# SILICON VALLEY INTERNATIONAL INVENTION FESTIVAL **JURY BOARD**



**CARMINE DENISCO**

SVIIF Board Committee Member  
President of the  
United Inventors Association (UIA)  
Successful Entrepreneur, Inventor, Author, Podcaster,  
Investor, and Patent & Trademark Holder

**ROY MOREJON**

Co-Founder & President of Enventys Partners  
Distinguished Authority in Bringing Innovative  
Physical Products to Market



**CHRISTINA MCTAGGART**

SVIIF Board Committee Member  
Chief Building Official & Community  
Development Services Manager, City  
of Redwood City



**SARANYA VEMURI**

Principal Product Manager – Tech at Amazon  
Former Product Strategy Leader at Meta & Google  
Product Executive with 10+ Years of Experience in AI,  
Consumer Technology, Hardware, Business Transformation,  
Innovation, Scalability, and Emerging Technologies



**CARRIE WHITE**

Director of Student Innovation at the  
National Academy of Inventors (NAI)



# SILICON VALLEY INTERNATIONAL INVENTION FESTIVAL **JURY BOARD**



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SVIIF Board Committee Member  
Representative of Hong Kong SAR  
Innovation & Technology Leader | Venture Capital  
Firm Vice Chairman | Former PolyU Tech Transfer  
Director | Former HKSTP Executive

**STEVE MOORE**

Founder & Creative Director at  
Tantrum Innovation  
Former Design Director at IDEO  
International Product Innovation Expert



**SIDDHESH YAWALKAR**

Senior Software Researcher (Engineering  
Manager IV), Central Cybersecurity Team  
Intuit Inc., Mountain View, California, USA  
(November 2021 – Present)



**MATIJA ŽUGEC**

SVIIF Board Committee Member  
Secretary General of the Union of  
Croatian Innovators  
Graduate of the Faculty of Organization  
and Informatics



**PATRICIA NOLAN-BROWN**

SVIIF Board Committee Member  
Prolific Inventor & Entrepreneur  
Author of Idea to Invention  
University Speaker, Innovation Educator & Judge



# SILICON VALLEY INTERNATIONAL INVENTION FESTIVAL **JURY BOARD**



**SYLVIA CHANG**

President of Taiwan Invention Association "TIA"

**ANAND KANNAN**

National Director, Strategic Leader Driving Organizational Growth, Operations, and High-Impact National Initiatives



**MARK E. GARCIA**

INDUSTRIAL DESIGN LEADER, INVENTOR, and EDUCATOR  
Perpetually inspired concept



**KELLY SHEA**

SVIIF Board Committee Member  
Director of Special Events, United Inventors Association (UIA)  
Award-Winning Inventor, Innovation Ecosystem Builder, STEM Education Advocate, Entrepreneur, Author, and Founder & CEO of Innovation Station LLC



**BRENDAN BOYLE**

Partner at IDEO  
Professor of Design Thinking at the Stanford d.school



# SILICON VALLEY INTERNATIONAL INVENTION FESTIVAL **JURY BOARD**



**DR. KARTHIK RAMESH**

Group Chief Growth Officer Tabhi Inc USA & CEO Middle East Gamma Group; Healthcare technology CXO, AI/ML pioneer, Most Educated Indian CSO; 100+ awards recipient, and digital transformation expert with 25+ years of global CXO experience across financial services and healthcare platforms.

**DR. NGUYEN HOANG GIAN**

President of Institute of Innovation Research and Attribute Verification (RIVA)



**MR. HE ZHENFU**

Vice President of China Association of Inventions



**WINFRIED STURM**

SVIIF Board Committee Member  
Board Member, KIT-DEV Initiative | Curator, DABE Initiative | Founder & Managing Director, Student High-Tech Invention Education Association (HAG)



**MARCUS ODEN**

CEO/President, Fortress Structural Engineering Inc.  
Please link his picture to the link below:  
Fortress Structural Engineering – fortress



# Table of Contents

|    |                                                                                                            |
|----|------------------------------------------------------------------------------------------------------------|
| 17 | <b>Australia</b> / Australia Inventors Association Incorporated (AIAI)                                     |
| 19 | <b>Azerbaijan</b> / Azerbaijan National Team                                                               |
| 23 | <b>Brazil</b> / International Brazil Innovative Inventors, Scientist and Entrepreneur Association (ABIPIR) |
| 27 | <b>Canada</b> / The First Institute of Canadian Inventors (FICI)                                           |
| 29 | <b>China</b> / China Association of Inventions (CAI)                                                       |
| 47 | <b>Croatia</b> / Croatian Union of Innovators                                                              |
| 51 | <b>Democratic Republic of the Congo</b> / Lebanese School in Kinshasa                                      |
| 53 | <b>Hong Kong SAR</b> / The Education University of Hong Kong                                               |
| 55 | <b>Hong Kong SAR</b> / Lingnan University                                                                  |
| 60 | <b>Hong Kong SAR</b> / Hong Kong Baptist University                                                        |
| 62 | <b>Hong Kong SAR</b> / Independent Participants                                                            |
| 67 | <b>Iceland</b> / Icelandic Inventors and Innovators Association, (SFH / KVENN)                             |
| 73 | <b>India</b> / Yenilik Foundation                                                                          |
| 77 | <b>Indonesia</b> / PT. Nexus Global Niaga                                                                  |
| 79 | <b>Iran</b> / The First Institute of Researchers and Inventors (FIRI)                                      |
| 87 | <b>Iraq</b> / Iraqi Society of Inventors and Innovators (IISI)                                             |
| 93 | <b>Iraq</b> / Scientific Institute of Talents (SIT)                                                        |
| 97 | <b>Jordan</b> / Amir Hashem Mohammad AlKhalaileh                                                           |
| 97 | <b>Jordan</b> / Rami Jawdat Nemer Waqqad                                                                   |
| 99 | <b>Republic of Korea</b> / Korea Invention Promotion Association (KIPA)                                    |

|     |                                                                                                      |
|-----|------------------------------------------------------------------------------------------------------|
| 101 | <b>Republic of Korea</b> / HL SCIENCE Co., Ltd                                                       |
| 102 | <b>Republic of Korea</b> / ORBITN Co., Ltd                                                           |
| 105 | <b>Mexico</b> / Montabrera Co.                                                                       |
| 107 | <b>Palestine</b> / Higher Council for Innovation and Excellence                                      |
| 111 | <b>Philippines</b> / Bauertek Farmaceutical Technologies Corp-BFTC                                   |
| 113 | <b>Poland</b> / Stanislaw Kostka High School                                                         |
| 115 | <b>Romania</b> / Gheorghe Asachi Technical University of Iasi                                        |
| 116 | <b>Romania</b> / Petroleum and Gas University                                                        |
| 119 | <b>Saudi Arabia</b> / Dr. Anas Bassam Barnawi                                                        |
| 119 | <b>Saudi Arabia</b> / Eng. Remas Faisal                                                              |
| 120 | <b>Saudi Arabia</b> / King Abdulaziz University / Tuwaiq Academy                                     |
| 121 | <b>Saudi Arabia</b> / Amira Alqabbaa                                                                 |
| 122 | <b>Saudi Arabia</b> / Al-Riyadah Educational Association                                             |
| 125 | <b>Republic of Serbia</b> / Belgrade Association of Inventors                                        |
| 129 | <b>Spain</b> / Applitent Teck                                                                        |
| 133 | <b>Sri Lanka</b> / Mohamed Macbool Misharif Ahamath                                                  |
| 135 | <b>Taiwan ROC</b> / Taiwan Invention Association (TIA)                                               |
| 147 | <b>Thailand</b> / National Research Council of Thailand (NRCT)                                       |
| 153 | <b>United Arab Emirates</b> / Emirates Science Club                                                  |
| 155 | <b>United Kingdom</b> / Dr. Simson Wu / Amonova Limited                                              |
| 155 | <b>United States of America</b> / Seikun Design                                                      |
| 156 | <b>United States of America</b> / Advanced Nano Integration                                          |
| 156 | <b>United States of America</b> / Marin School                                                       |
| 157 | <b>United States of America</b> / Ballard High School                                                |
| 157 | <b>United States of America</b> / Pennsylvania American School                                       |
| 158 | <b>United States of America</b> / University High School, California                                 |
| 158 | <b>United States of America</b> / LiLan Academy                                                      |
| 159 | <b>United States of America</b> / ATN Expert Inc.                                                    |
| 160 | <b>United States of America</b> / Dicastal North America Research Branch                             |
| 160 | <b>United States of America</b> / United Inventors Association (UIA)                                 |
| 173 | <b>Republic of Uzbekistan</b> / Tashkent State Technical University named after Islam Karimov (TSTU) |
| 175 | <b>Vietnam</b> / Institute of Innovation Research and Attribute Verification (RIVA)                  |



# AUSTRALIA

## IP Australia

National intellectual property office



Australian Government  
intellectual property office



Australia has a mature and diversified innovation ecosystem supported by **world-class universities**, publicly funded research organisations and a dynamic private sector. Strengths span mining technology, medical technologies and biologics, agri-food and agritech, **clean energy and resources**, **advanced services**, and digital innovation. **Intellectual property protection** plays a critical role in enabling commercialisation, attracting investment, fostering research collaboration and supporting Australia's engagement in global markets.

Australia combines a strong domestic **research base** with **active international patenting** through the Patent Cooperation Treaty (PCT) system and direct filings overseas. IP Australia, the national intellectual property office, administers patents, trade marks, designs and plant breeder's rights and promotes effective IP frameworks and services that support innovation, productivity and sustainable economic growth.



PATENT  
APPLICATIONS

30,487

National office total latest  
available WIPO year



GLOBAL  
RANK

9<sup>th</sup>

Rank by total patent applications  
filed at the national office latest  
available WIPO year



PATENTS IN  
FORCE

163,069

WIPO latest  
available year



APPLICATIONS BY  
RESIDENTS WORLDWIDE

10,633

Resident-origin patent  
applications worldwide  
latest available WIPO year



Capital  
Canberra



Population  
27.2M  
World Bank • 2024



GDP (Nominal)  
US\$1.76T



Patent Office  
IP Australia



WIPO Membership  
Member since 1972

Sources: WIPO Statistical Country Profile • Australia; WIPO IP Statistics Data Center; WIPO Country Profile (membership); World Bank Open Data (Population, GDP current US\$). Latest available reporting years shown by indicator.



# Australia

## Australia

Australia Inventors Association Incorporated (AIAI)  
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Phone: +61 469599541  
Address: 3 Loretto Avenue, Ferntree Gully, Victoria 3156,  
Australia



**Invention ID: AU - 6101**

**Inventor(s):**

Dr. Mehdi Korki

**Invention Title:**

Smart-Grid Power Line Outage Detector

**Invention Description:**

An intelligent system that detects and pinpoints power line outages across smart grids using compressive sensing. By exploiting the sparse, structured pattern of outages, it identifies faults from far fewer measurements than conventional methods, enabling faster, lower-cost fault localization and self-healing, more resilient power networks.

**Category:**

P ) Energy - Renewable and green energy



**Invention ID: AU - 6102**

**Inventor(s):**

Dr. Mehdi Korki

**Invention Title:**

Post-Quantum Secure Control for Distributed Energy Grids

**Invention Description:**

A cybersecurity system that protects grid control signals in distributed energy networks using post-quantum cryptography. It shields SCADA and DER command channels against future quantum-computer attacks, ensuring the authenticity and integrity of dispatch signals for solar, battery and microgrid assets across a resilient, quantum-ready smart grid.

**Category:**

N ) Hardware - Software - Cybersecurity - Blockchain - Internet of things (IoT)



**Invention ID: AU - 6103**

**Inventor(s):**

Dr. Mehdi Korki

**Invention Title:**

One-Bit Compressive Sensing for Wireless Sensor Networks

**Invention Description:**

A distributed sensing method that reconstructs signals from just one bit, the sign, per measurement, slashing sensor hardware cost and power use. Robust against impulsive noise, it lets large wireless sensor networks cooperatively and reliably estimate data in harsh conditions, ideal for IoT, smart grids and industrial monitoring.

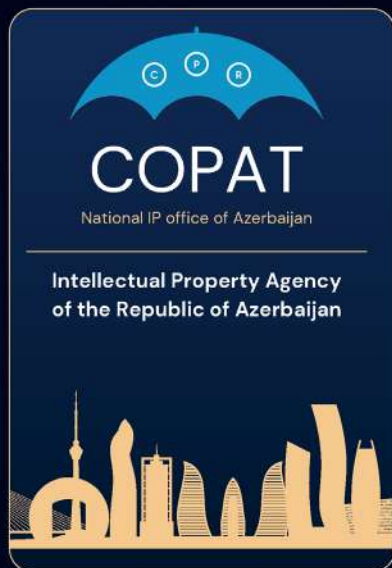
**Category:**

B ) Electronics - Electricity - Methods of Communication



# AZERBAIJAN

— Intellectual Property Agency of the Republic of Azerbaijan —



Azerbaijan's intellectual property landscape reflects a developing innovation system anchored in Baku and supported by a broader agenda of economic diversification. The national IP office, the Intellectual Property Agency of the Republic of Azerbaijan, administers protection across patents, trademarks, industrial designs and related rights, while the country's WIPO membership links domestic applicants to the global IP architecture. Patent volumes remain modest by international standards, yet they provide a useful indicator of inventive activity in fields connected to engineering, manufacturing, energy services, chemistry, digital solutions and applied research. Azerbaijan's wider economy continues to draw strength from hydrocarbons, but national development priorities also emphasize logistics, agribusiness, technology upgrading, the digital economy and knowledge-based growth. In this context, intellectual property serves as an enabling infrastructure for commercialization, technology transfer and protection of locally generated ideas. In the Global Innovation Index 2025, Azerbaijan ranked 94th, underscoring both current constraints and future opportunities for innovation-led development.



Sources: WIPO Statistical Country Profile: Azerbaijan (patent indicators, latest available data for 2024; profile released 2026); WIPO Country Profile: Azerbaijan (office identity, WIPO membership, GII 2025); World Bank Open Data (Population 2025; GDP current US\$, 2025).



## Azerbaijan

Azerbaijan National Team

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Post Code: AZ0100



**Invention ID: AZ - 9901**

**Inventor(s):**

Mr. Safarali Safarli, Ms. Laman Safarli, Ms. Malak Baghirova, Mrs. Sevinj Aliyeva, Mrs. Arzu Ibrahimova, Mr. Anar Mammadov, Mr. Togrul Guluzade, Mr. Tunjay Isgandarli, Mr. Kamran Mahmudov, Mr. Nurlan Abdullayev, Mr. Javid Jalilov, Mr. Ilham Suleymanov, Mr. Jahid Jabizada

**Invention Title:**

A.I.N.O.S - Artificial Intelligence Navigation and Observation System

**Invention Description:**

A smart 360° robotic laser-tracking platform integrated with a web-based simulation hub. Users can identify and track celestial bodies in real-time even during daylight. It bridges digital design with physical reality, allowing students to simulate space hardware and source parts locally to build their own amateur-scale cosmic devices.

**Category:**

O ) Teaching Research - Pedagogical Items



**Invention ID: AZ - 9902**

**Inventor(s):**

Mr. Safarali Safarli, Ms. Laman Safarli, Ms. Malak Baghirova, Mrs. Sevinj Aliyeva, Mrs. Arzu Ibrahimova, Mr. Anar Mammadov, Mr. Togrul Guluzade, Mr. Tunjay Isgandarli, Mr. Kamran Mahmudov, Mr. Nurlan Abdullayev, Mr. Javid Jalilov, Mr. Ilham Suleymanov, Mr. Jahid Jabizada

**Invention Title:**

ECHRON

**Invention Description:**

ECHRON is an AI-powered IoT platform for precision agriculture and urban monitoring. Using modular sensor networks, it tracks soil health, gas levels, and ground stability in real-time. With a map-based dashboard and dual-layer AI analysis, it provides actionable crop recommendations and environmental risk detection for smarter decision-making.

**Category:**

H ) Agriculture - Forestry and Garden - Pet and Farm Animal Supplies



**Invention ID: AZ - 9903**

**Inventor(s):**

Mr. Safarali Safarli, Ms. Laman Safarli, Ms. Malak Baghirova, Mrs. Sevinj Aliyeva, Mrs. Arzu Ibrahimova, Mr. Anar Mammadov, Mr. Togrul Guluzade, Mr. Tunjay Isgandarli, Mr. Kamran Mahmudov, Mr. Nurlan Abdullayev, Mr. Javid Jalilov, Mr. Ilham Suleymanov, Mr. Jahid Jabizada

**Invention Title:**

S.O.N.I.A - Space Observation and Navigation Intelligence Assistant

**Invention Description:**

S.O.N.I.A. a modular drone KIT for search, rescue, and research. AI thermal and visual detection finds victims day or night; autonomous all-weather flight reaches them. A precision winch delivers aid, two-way audio reassures survivors, and coordinated swarms scale the search, streaming live 3D maps and hazard data to command teams.

**Category:**

E ) Security - Rescue - Alarm



**Invention ID: AZ - 9904**

**Inventor(s):**  
*Mr. Safarali Safarli*  
**Invention Title:**  
*Azercell Network Drone Complex*

**Invention Description:**  
*An autonomous aerial system for crisis response, combining tethered network drones that deliver continuous mobile connectivity over disaster zones with mapper drones that capture real-time imagery and 3D terrain maps. It restores communications, enables rapid damage assessment, and strengthens emergency operations.*  
**Category:**  
*E ) Security - Rescue - Alarm*



**Invention ID: AZ - 9905**

**Inventor(s):**  
*Ms. Malak Baghirova*  
**Invention Title:**  
*Krilz*

**Invention Description:**  
*KRILZ-AI is an aerospace testing platform for autonomous navigation in GNSS-denied environments. Using EKF-based sensor fusion and an adaptive AI layer, it ensures stable trajectory estimation under high G-loads and vibration. It serves as a scalable FTaaS model, bridging the gap between simulation and real-world flight validation.*  
**Category:**  
*N ) Hardware - Software - Cybersecurity - Blockchain - Internet of things (IoT)*



**Invention ID: AZ - 9906**

**Inventor(s):**  
*Mr. Safarali Safarli, Ms. Laman Safarli, Ms. Malak Baghirova, Mrs. Sevinj Aliyeva, Mrs. Arzu Ibrahimova, Mr. Anar Mammadov, Mr. Togrul Guluzade, Mr. Tunjay Isgandarli, Mr. Kamran Mahmudov, Mr. Nurlan Abdullayev, Mr. Javid Jalilov, Mr. Ilham Suleymanov, Mr. Jahid Jabizada*  
**Invention Title:**  
*M.R.S. - Mercy Rescue Snake*

**Invention Description:**  
*M.R.S. (Mercy Rescue Snake) is a fiber-optic-controlled robotic system for post-earthquake search and rescue. Its flexible body navigates collapsed structures and soil to locate trapped survivors, then delivers life-sustaining water, nutrition and breathable air, extending survival time until rescue teams arrive, even where wireless signals fail.*  
**Category:**  
*E ) Security - Rescue - Alarm*



**Invention ID: AZ - 9907**

**Inventor(s):**  
*Mr. Safarali Safarli, Ms. Laman Safarli, Ms. Malak Baghirova, Mrs. Sevinj Aliyeva, Mrs. Arzu Ibrahimova, Mr. Anar Mammadov, Mr. Togrul Guluzade, Mr. Tunjay Isgandarli, Mr. Kamran Mahmudov, Mr. Nurlan Abdullayev, Mr. Javid Jalilov, Mr. Ilham Suleymanov, Mr. Jahid Jabizada*  
**Invention Title:**  
*Cyclowareness*

**Invention Description:**  
*Cyclowareness is a closed-loop cyber-resilience platform: it detonates real-world threats in a secure sandbox, leverages AI to convert each into targeted training for the specific at-risk employee, and quantifies behavioural change through a human-risk score—continuously learning, detecting, and neutralising threats.*  
**Category:**  
*N ) Hardware - Software - Cybersecurity - Blockchain - Internet of things (IoT)*



**Invention ID: AZ - 9908**

**Inventor(s):**  
*Mr. Safarali Safarli*  
**Invention Title:**  
*Azercell Safe Environment Application*

**Invention Description:**  
*A disaster-response platform that prepares employees to act both proactively and reactively in any emergency. Through the app, employees can complete crisis-readiness training, view real-time evacuation plans, and report hazards instantly.*  
**Category:**  
*E ) Security - Rescue - Alarm*





# BRAZIL

Instituto Nacional da Propriedade Industrial  
National Institute of Industrial Property

## INPI

Instituto Nacional  
da Propriedade  
Industrial

Official industrial  
property office of Brazil



Brazil has the largest economy in Latin America and a broad industrial base that supports diverse innovation activity across manufacturing, agribusiness, energy, health, transport, chemicals, and digital services. Its intellectual property system is administered by the Instituto Nacional da Propriedade Industrial, which plays a central role in processing patents, trademarks, industrial designs, and other industrial property rights. Recent WIPO data show that Brazil remains one of the most active patent offices globally by filing volume, while resident-origin applications also indicate outward inventive activity by Brazilian applicants. Patenting in Brazil reflects a mixed ecosystem shaped by domestic firms, universities, research institutions, and small businesses. Technical activity is visible in fields such as special machinery, chemistry, medical technology, transport, and civil engineering. In this context, intellectual property remains an important policy and business tool for translating research, industrial capability, and applied innovation into protected assets.



PATENT  
APPLICATIONS

### 25.6K

25,597 applications  
at the national office

2024



GLOBAL RANK

### 11<sup>th</sup>

By total patent applications  
in the national office

2024



PATENTS IN FORCE

### 106.8K

106,827 patents  
in force

2024



APPLICATIONS BY  
RESIDENTS WORLDWIDE

### 8.0K

7,998 resident-origin  
applications worldwide

2024



Capital

Brasília



Population

212.8M

2025



GDP Nominal

US\$2.28T

2025



Patent Office

INPI

Source: WIPO IP Statistics Data Center; WIPO Statistical Country Profile, Brazil, last updated 6/2026; World Bank, Open Data, Population total 2025; World Bank Open Data, GDP current US\$ 2025, INPI official portal.



## Brazil

International Brazil Innovative Inventors, Scientist and  
Entrepreneur Association (ABIPIR)

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Iguaçu - PR, 85853-000, Brazil



**Invention ID: BR - 5501**

**Inventor(s):**

Marcos Landahl Cabral / Hidroflex

**Invention Title:**

Hydroflex Vehicle Consumption Reducer

**Invention Description:**

An Eco-Friendly System Using Hydrogen to Save Fuel and Cut Emissions. A Trunk-Installed Reactor Generates Hydrogen via Electrolysis. Controlled by an App via Bluetooth, It Injects Hydrogen into the Engine's TBI for Complete Combustion. It Delivers up to 30% Fuel Savings and Reduces Emissions by up to 80%.

**Category:**

P ) Energy - Renewable and green energy



**Invention ID: BR - 5502**

**Inventor(s):**

Sol Andrea Gonzalez Tapia / Sentinelita Vita Company

**Invention Title:**

Sentinelita VITA - Intelligent Assisted Triage Surveillance

**Invention Description:**

Sentinelita VITA Is an Explainable AI (XAI) Platform That Supports Risk Classification in Urgent and Emergency Care. The Solution Identifies Patients at Risk of Clinical Deterioration, Recommends Timely Re-Evaluations, and Assists Healthcare Professionals in Evidence-Based Decision-Making, Enhancing Patient Safety and Care Efficiency.

**Category:**

M ) Medical Technology - Medical Engineering - Medicine - Hygiene



**Invention ID: BR - 5503**

**Inventor(s):**

Vitor Gabriel Cagol Escobar and Irene Cecilia Cagol

**Invention Title:**

PIETRA - a social robot

**Invention Description:**

Humanoid Robot With Artificial Intelligence, Designed to Assist in the Treatment of Children With Autism and Depression, Offer Companionship to the Elderly in Nursing Homes, and Serve as a Medical Information Hub. It Also Assists in Customer Service at Tourist Spots, Hotel Chains, and Commercial Establishments.

**Category:**

M ) Medical Technology - Medical Engineering - Medicine - Hygiene



**Invention ID: BR - 5504**

**Inventor(s):**

Euclides Pereira Pardigno

**Invention Title:**

Agribusiness digital dependency and risk intelligence system

**Invention Description:**

An Agribusiness Digital Dependency and Risk Intelligence System That Maps Critical Technologies and Correlates Cyber, Legal, Operational, AI, and Third-Party Risks, Prioritizing Vulnerabilities and Generating Resilience and Risk-Treatment Actions.

**Category:**

N ) Hardware - Software - Cybersecurity - Blockchain - Internet of things (IoT)



**Invention ID: BR - 5505**

**Inventor(s):**

Giovanna Vargas Barbosa, Luca Mascarenhas Plaster, Pedro Castro Viana

**Invention Title:**

Wemilk

**Invention Description:**

This is an intelligent, continuous monitoring platform for dairy cattle that uses computer vision and artificial intelligence. The system analyzes herd behavior in real time, identifies changes that may indicate disease or welfare issues, and sends alerts, supporting rapid decision-making and reducing production losses.

**Category:**

H ) Agriculture - Forestry and Garden - Pet and Farm Animal Supplies



**Invention ID: BR - 5506**

**Inventor(s):**

Anatálio dos Reis Silva

**Invention Title:**

Portable coffee sieve and winnower

**Invention Description:**

An Innovative Portable Coffee Sieve and Winnower Automates Grain Cleaning Directly in the Field. It Processes up to 420 kg per Hour, Replacing Grueling Manual Labor. The Compact Machine Eliminates Debris and Twigs Rapidly, Boosting Farm Productivity. It Protects Worker Health by Reducing Physical Strain and Optimizes the Post-Harvest Workflow.

**Category:**

H ) Agriculture - Forestry and Garden - Pet and Farm Animal Supplies



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INTELLECTUAL PROPERTY PROFILE 2024

# CANADA

INNOVATION. CREATIVITY. PROSPERITY.

Canada's strong intellectual property system supports an innovative economy, attracts investment, and empowers creators and businesses to compete and grow in global markets.

## Canadian Intellectual Property Office

OFFICIAL NAME  
Canadian Intellectual Property Office

ABBREVIATION  
CIPO



PATENT APPLICATIONS  
FILED AT THE NATIONAL  
OFFICE

**36,878**

(2023)

Applications for patents filed at the Canadian Intellectual Property Office (CIPO).



GLOBAL PATENT ACTIVITY  
RANK  
(BY ORIGIN)

**16<sup>th</sup>**

(2023)

Canada's rank among countries/territories by patent applications filed worldwide.



PATENTS IN FORCE  
AT THE NATIONAL  
OFFICE

**226,027**

(2023)

Active patents in force at the Canadian Intellectual Property Office (CIPO).



PATENT APPLICATIONS  
FILED WORLDWIDE  
(BY ORIGIN)

**13,752**

(2023)

Patent applications filed worldwide under the patent Cooperation Treaty by Canadian residents.

## AT A GLANCE



Capital  
**Ottawa**



Population  
**40.1 million**



Nominal GDP  
**US\$ 2.14 trillion**



Languages  
**English, French**

### Source:

- WIPO IP Statistics Data Center (March 2024) • Patent statistics: 2023
- WIPO World Intellectual Property Indicators 2023
- Statistics Canada • Table 17-10-O135-O1 • Population estimates on July 1st, 2023
- World Bank • World Development Indicators • NY GDP-MKTP:CD (Nominal GDP, 2023)
- Canadian Intellectual Property Office (CIPO) • Official website: [www.cipo.ca](http://www.cipo.ca)

Note: All patent indicators are based on the latest available data and may refer to different reporting years.



# Canada

The First Institute of Canadian Inventors (FICI)

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5600-100 King Street West, Toronto, ON, Canada



**Invention ID: CA - 101**

**Inventor(s):**

Ahmad Karimi / Therna Tile Inc.

**Invention Title:**

ThernaTile Modular Snow-Melting System with Quick Connectors

**Invention Description:**

A modular Heated Tile snow-melting system comprising independently replaceable multi-layer heated concrete panels with embedded heating cables, plug-in electrical connectors, parallel power distribution, zoned control, and fault isolation to provide energy-efficient, reliable, and easy-to-maintain heated pavement infrastructure.

**Category:**

C ) Construction / Civil Engineering / Materials



**Invention ID: CA - 102**

**Inventor(s):**

Xiaowen Shen, Xiang Yang, Kun Kang, Jingjing Bai, Jiajia He / Plantect

**Invention Title:**

Predictive, Sensor-Agnostic & Immersive Plant Health Intelligence

**Invention Description:**

Plantect is an AI-powered plant health platform that integrates with off-the-shelf IoT sensors to monitor soil, moisture, light, and environmental conditions in real time. It provides early disease detection, predictive analytics, and species-specific care recommendations through a mobile app, enabling smarter, proactive plant management for homes and commercial growers.

**Category:**

H ) Agriculture - Forestry - Garden - Pet & Farm Animal Supplies



**Invention ID: CA - 103**

**Inventor(s):**

Andrew Beers, Andreas Cornet, Rajnish Arora, Edwin Jose Joseph Xavier, Inventum Group Ltd., Dextern Ltd.

**Invention Title:**

Revolutionizing EV Charging

**Invention Description:**

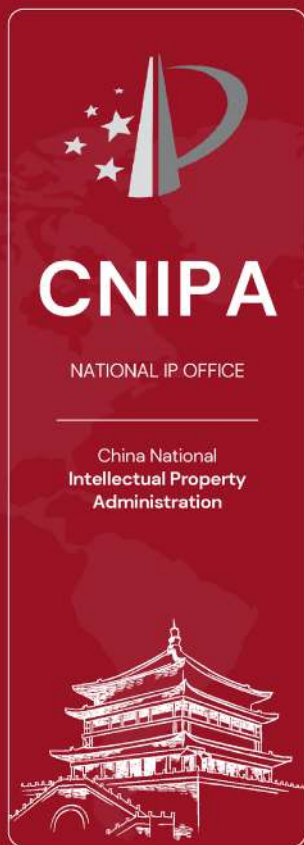
CrossCharge is an AI-enabled EV charging network that expands charging access by installing Level 2 chargers at single-family homes while deploying Level 3 DC fast chargers in commercial areas. The platform creates a scalable, convenient, and cost-effective charging ecosystem that improves EV accessibility and supports the transition to sustainable transportation.

**Category:**

P ) Energy - Renewable & Green Energy

# CHINA

China National Intellectual Property Administration



**CNIPA**

NATIONAL IP OFFICE

China National  
Intellectual Property  
Administration

China maintains one of the world's largest and most active intellectual property systems, supported by a broad industrial base, strong research capacity, and sustained investment in science and technology. Patent activity reflects both the scale of domestic innovation and the increasing international reach of Chinese applicants. The country's innovation landscape is shaped by advances in digital technologies, electronics, manufacturing, green energy, and applied engineering, alongside expanding commercialization channels linking research, industry, and markets. A large share of filings originates from residents, indicating the depth of local inventive activity and the strategic role of IP in business competition and technological upgrading. Through the China National Intellectual Property Administration, the patent system supports protection, disclosure, and diffusion of knowledge while reinforcing China's position in global innovation networks.



**1,828,054**

PATENT APPLICATIONS (2024)



GLOBAL PATENT RANK



**5,688,867**

PATENTS IN FORCE



**1,796,738**

RESIDENT APPLICATIONS  
WORLDWIDE



Capital

**Beijing**



Population

**1.41B**



GDP (Nominal)

**US\$19.5T**



Patent Office

**CNIPA**



WIPO Member

**Yes**

Source: WIPO Intellectual Property Statistical Country  
Profile - China (updated 06/2026); World Bank Data (2025).  
Patent statistics refer to the latest official WIPO data available.

## China

China Association of Inventions (CAI)

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Fuxing Road, Haidian District, Beijing, China



**Invention ID: Youth Innovation Olympiad / CN - 8601**

**Inventor(s):**

Zhou Yue, Feng Haoyang, Xian Ruizhen, Huang Jinghan, Huang Ying, Deng Yunjian, Bai Mei / Shimen High School, Nanhai District, Foshan City, Guangdong Province, China

**Invention Title:**

Dressing an egg in an "astronaut suit"

**Invention Description:**

A silver/titanium dioxide composite was synthesized to modify chitosan, aiming to enhance its antibacterial performance and thereby extend the shelf life of eggs.

**Category:**

O ) Teaching Research - Pedagogical Items



**Invention ID: Youth Innovation Olympiad / CN - 8602**

**Inventor(s):**

Han Zhuqing, Han Bo, Han Shaojie / Guangzhou Lvpin Zhixing Certification Co., Ltd.

**Invention Title:**

Low-Power Pet Anti-Loss System Based on Proactive Owner's Voice Recall

**Invention Description:**

A low-power pet safety system using RSSI positioning and owner voice recall, creating a perception-recall-response loop that improves pet safety and companionship.

**Category:**

H ) Agriculture - Forestry and Garden - Pet and Farm Animal Supplies



**Invention ID: Youth Innovation Olympiad / CN - 8603**

**Inventor(s):**

Rong Jiayu / Shanghai High School International Division

**Invention Title:**

Automated Diagnosis of Carpal Tunnel Syndrome Using AURAS-Net (Adaptive Ultrasound Reliable Assisted Segmentation Network)

**Invention Description:**

This project develops AURAS-Net, an adaptive and reliable ultrasound-assisted segmentation network for carpal tunnel syndrome diagnosis, aiming to accurately identify the median nerve in wrist ultrasound images. The model combines a dual-path CNN-ViT encoder, adaptive feature fusion, a hierarchical boundary-aware decoder, uncertainty modeling, and interactive prompt modulation, enabling it to capture local textures, global anatomical context, prediction reliability, and clinical controllability. Experiments on 180 real wrist ultrasound images show strong performance, achieving a Dice score of 0.8509 and an IoU of 0.7460, outperforming baseline models such as U-Net and DeepLabV3+. The project therefore offers a reliable technical solution for automated diagnosis of CTS and clinician-assisted interpretation.

**Category:**

M ) Medical Technology - Medical Engineering - Medicine - Hygiene



#### **Invention ID: Youth Innovation Olympiad / CN - 8604**

##### **Inventor(s):**

Kang Juncheng / Shanghai Experimental School

##### **Invention Title:**

An Agricultural Decision-support Terminal Based on a Multimodal Large Language Model

##### **Invention Description:**

Addressing the common challenges faced by smallholder farmers worldwide, such as complex operation of smart devices and experience-dependent decision-making, this project develops an agricultural decision-support terminal based on a multimodal large language model. It establishes a collaborative "handheld terminal + agricultural IoT + cloud platform" system, calling a lightweight multimodal large language model to support voice, image, and touchscreen interactions. The project enables crop pest and disease identification (accuracy >90%), environmental monitoring, and remote irrigation control. Contributing to UN Sustainable Development Goals SDG 2 (Zero Hunger) and SDG 9 (Industry, Innovation and Infrastructure), this project provides a non-demanding, user-friendly and widely replicable Chinese solution to global digital agricultural transformation.

##### **Category:**

H ) Agriculture - Forestry and Garden - Pet and Farm Animal Supplies



#### **Invention ID: Youth Innovation Olympiad / CN - 8605**

##### **Inventor(s):**

Liu Yingbo / WLSA Shanghai Academy

##### **Invention Title:**

Sense Walking 2.0

##### **Invention Description:**

Sense Walking 2.0 - An AI-powered smart guide belt based on walkable surface recognition is designed to help visually impaired individuals navigate safely and independently in complex environments. Traditional mobility aids for the visually impaired each have clear limitations. Many existing smart assistive devices attempt to improve on these tools, but most remain reactive. They focus on obstacle detection, offer limited guidance, or suffer from high costs, short battery life, and poor real-world usability. Sense Walking 2.0 introduces a different approach. Using a camera and on-device AI, it recognizes walkable surfaces and actively plans safe paths in real time. Even when tactile paving is blocked or sidewalks are cluttered, the system guides users around obstacles instead of simply warning them. All processing runs offline, making it fast, reliable, and privacy-friendly. Our goal is to turn mobility assistance into intelligent guidance and improve independence for over 200 million visually impaired individuals worldwide.

##### **Category:**

N ) Hardware - Software - Cybersecurity - Blockchain - Internet of things (IoT)



#### **Invention ID: Youth Innovation Olympiad / CN - 8606**

##### **Inventor(s):**

Cheng Yu Qian Michelle / Shanghai High School International Division

##### **Invention Title:**

Progressive intelligent wake-up pillow based on bone conduction technology

##### **Invention Description:**

This project solves common troubles of students and office workers: insufficient sleep, cardiovascular strain from blaring conventional alarms and noise nuisance to others.

##### **Category:**

Q ) Paramedical - Health - Foodstuffs - Drinks - Cosmetics



#### **Invention ID: Youth Innovation Olympiad / CN - 8607**

##### **Inventor(s):**

Hu Yucheng Aaron / Shanghai High School International Division

##### **Invention Title:**

Emergency Parking Automatic Sign Based on Miuro Origami Structure and Open-Source Hardware

##### **Invention Description:**

This device utilizes an automated emergency parking warning system that combines a light indicator panel based on the Miura origami structure with a remote-controlled car powered by Arduino open-source hardware. The solution is designed to achieve rapid folding and unfolding of the indicator panel through origami mechanics, and enable remote operation via intelligent control, thereby improving the efficiency and safety of emergency parking warnings.

##### **Category:**

A ) Mechanics - Engines - Machinery - Robotic - Tools - Industrial Process - Metallurgy

30

SVIIF-2026



#### **Invention ID: Youth Innovation Olympiad / CN - 8608**

##### **Inventor(s):**

Raymond R X Zhang / The British International School Shanghai, Puxi

##### **Invention Title:**

Intelligent Tactile Paving Sign System Based on RFID Technology

##### **Invention Description:**

This project designs an intelligent tactile paving sign system based on RFID technology to address the travel challenges faced by visually impaired individuals, including insufficient tactile paving information, lack of positioning, and difficulty in emergency assistance. The system consists of tactile paving tiles embedded with RFID tags and a smart cane equipped with an ESP32 module, a voice module, and a posture sensor, which enables location announcement, route guidance, and automatic fall alarm. Tests show that the tag recognition accuracy is 99.2%, the response time is less than 1 second, and the fall detection sensitivity is 100%. The project provides visually impaired users with all-round travel support covering navigation, positioning, and protection, significantly enhancing their travel safety and convenience.

##### **Category:**

E ) Security - Rescue - Alarm



#### **Invention ID: Youth Innovation Olympiad / CN - 8609**

##### **Inventor(s):**

Chen Kewei / Dulwich College Shanghai, Pudong

##### **Invention Title:**

Intelligent feeding system for dogs

##### **Invention Description:**

The core idea of this system is to scientifically feed dogs based on their exercise levels, allowing owners to take care of their dogs more easily and scientifically. The corrugated paper used at the beginning of the project was found to be easily bitten by small dogs. After iterative upgrades, a drum feeding machine was designed to provide more stable feeding. Additionally, 3D printing of small dog rice bowls. Add a digital shake sensor to record the movement and steps of the puppy, and use a blank board as the control center of the system. In terms of software and data, we use AI to research and analyze the dietary habits and appetite of different breeds of puppies, making feeding plans more technological and personalized.

##### **Category:**

H ) Agriculture - Forestry and Garden - Pet and Farm Animal Supplies



#### **Invention ID: Youth Innovation Olympiad / CN - 8610**

##### **Inventor(s):**

Cai Xinyu / Shanghai Shangde Experimental School

##### **Invention Title:**

Intelligent anti-seat reclining reminder device

##### **Invention Description:**

Addressing the safety hazard of falls caused by tipping chairs in daily life, this project has designed a low-cost, high-reliability smart warning chair. The system uses an Arduino Nano main control board as its core, combined with a JY60 sensor to monitor the chair's tilt angle in real-time. When a slight rearward tilt is detected, it immediately triggers a vibration module to alert the user, and when a severe rearward tilt is detected, it activates a buzzer alarm to warn the user, thereby preventing accidents. The innovative aspect lies in the integration of an electronic warning module with furniture, achieving rapid response, easy installation, and wide applicability. This design is particularly suitable for use by children and the elderly, enhancing safety and providing new ideas for intelligent protection in modern furniture.

##### **Category:**

E ) Security - Rescue - Alarm



#### **Invention ID: Youth Innovation Olympiad / CN - 8611**

##### **Inventor(s):**

Zipser Paul Andreas / Wellington College International Shanghai

##### **Invention Title:**

Clear Plate & Sprout Growth - Multimodal AI Low-Carbon Incentive System for Food Saving

##### **Invention Description:**

This project constructs a recognition-feedback-incentive closed-loop system tailored for the campus food-saving and plate-clearing campaign. It adopts large AI models for image perception to deliver precise quantitative scoring (rated from 1 to 10) of food leftovers on dining plates. A weight sensing module conducts synchronous calibration, forming a dual-verification

31

SVIIF-2026

closed loop. The scoring data is linked to the visualized growth of virtual seedlings, which converts plate-clearing behaviors into tangible carbon emission reduction data. With a lightweight design perfectly adapted to campus canteen scenarios, the system features outstanding technological innovation and profound educational guiding value.

**Category:**

N ) Hardware - Software - Cybersecurity - Blockchain - Internet of things (IoT)



**Invention ID: Youth Innovation Olympiad / CN - 8612**

**Inventor(s):**

Henry Wu / Hangzhou Xuejun Elementary School Qiuzhi Campus

**Invention Title:**

A Dynamic Tympanic Pressure Regulation and Protection System for Ambient Pressure Gradient Environments

**Invention Description:**

This project presents a dynamic tympanic protection system for ambient pressure gradient environments. In aviation, a closed-loop feedback system using pressure sensing and solenoid valves enables dynamic regulation of external ear pressure differentials. For underwater scenarios, a non-invasive air-buffer structure reduces the rate of pressure transmission without sealing the ear canal. By integrating active control and passive buffering, the system provides a cross-media pressure differential management solution with enhanced safety, engineering innovation, and broad application potential.

**Category:**

M ) Medical Technology - Medical Engineering - Medicine - Hygiene



**Invention ID: Youth Innovation Olympiad / CN - 8613**

**Inventor(s):**

Zhixiang Zhang / BeiJing No.4 High School(Dao Yuan District)

**Invention Title:**

Intelligent Wearable Cervico-Thoracic Posture Brace

**Invention Description:**

Smart posture brace for desk users. Corrects hunchback via elastic strips. Monitors neck angle with alerts. Has heat therapy and massage. Slim design.

**Category:**

M ) Medical Technology - Medical Engineering - Medicine - Hygiene



**Invention ID: Youth Innovation Olympiad / CN - 8614**

**Inventor(s):**

Fan Yihan, Luo Zong, Liu Chang, Jiang Hongyue, Huang Wenzhen, Zou Zhengxi, Wang Ruohan / Shenzhen Guangming Senior High School

**Invention Title:**

Lithium Battery Tester Based on Ultrasonic and RFID Multi-Sensor Technology

**Invention Description:**

Ultrasonic+Hall fusion detects any battery in 3s. Mounted on door frame, alarms & physically blocks door. Low cost, easy install.

Patents pending.

**Category:**

E ) Security - Rescue - Alarm



**Invention ID: Youth Innovation Olympiad / CN - 8615**

**Inventor(s):**

Zirui Wu, Zaiyao Liu / Guangzhou True Light Middle School, Tianjin Eco-City Affiliated to Beijing Normal University

**Invention Title:**

An energy-saving lighting control scheme controlled by low-power IoT technology

**Invention Description:**

Built on IoT hardware, the integrated lighting system uses AI and sensors for adaptive, human-sensing and scene control to save energy via integrated hardware and software.

**Category:**

B ) Electronics - Electricity - Methods of Communication



**Invention ID: Youth Innovation Olympiad / CN - 8616**

**Inventor(s):**

Huang On Ki, Huang Yuxuan, Wang Yueling, Yang Wan To, Zhong Chen, Zhang Xinyue / Shenzhen No.3 Senior High School

**Invention Title:**

Intelligent Inspection and Spraying System for Agriculture and Landscaping Based on UAVs

**Invention Description:**

Intelligent Inspection and Spraying System for Agriculture and Landscaping Based on UAVs

**Category:**

H ) Agriculture - Forestry and Garden - Pet and Farm Animal Supplies



**Invention ID: Youth Innovation Olympiad / CN - 8617**

**Inventor(s):**

Liu Haolin, Ming Junyi, Xuan Xiwen, Ye Chun Yuk, Yan Zihan, Zhang Haoxuan / Shenzhen RDF International School

**Invention Title:**

Underwater Garbage Cleaning Robot

**Invention Description:**

This project applies distributed architecture and scheduling algorithms to realize efficient multi-robot collaborative intelligent water cleaning at low cost.

**Category:**

B ) Electronics - Electricity - Methods of Communication



**Invention ID: Youth Innovation Olympiad / CN - 8618**

**Inventor(s):**

Chen Jiaming / Veritas Collegiate Academy

**Invention Title:**

Multi-point Multi-person Continuous Operation High-rise Rescue Drone

**Invention Description:**

Multi-point, Multi-person, continuous operation high-rise rescue drone. It uses extendable levers to deploy long-range escape bags at the windows or balconies of high-rise buildings. The multi-stage damping structure inside the bag enables personnel to slide down safely at a controlled speed, allowing uninterrupted continuous rescue with no upper limit on the number of people. This solves the technical problems of traditional high-rise rescue drones, such as single-person, single-use rescue, low efficiency, non-reusable equipment, and poor sliding safety. It can be widely used for high-altitude emergency rescue in disasters such as high-rise building fires, earthquakes, and collapses.

**Category:**

E ) Security - Rescue - Alarm



**Invention ID: Youth Innovation Olympiad / CN - 8619**

**Inventor(s):**

Zichen Wang, Che Li, Yunqi Huang / Veritas Collegiate Academy Shenzhen Campus, Tsinglan School, Mounds Park Academy

**Invention Title:**

Public Transportation Drone System

**Invention Description:**

This fixed-route public transportation drone system connects key urban points through 3D air routes. With automated battery-swap main stations and sub-stations for boarding, each drone carries 12-14 passengers, reducing travel time, easing congestion, and supporting future low-carbon urban mobility.

**Category:**

J ) Traffic - Transport - Car Accessories

**Invention ID: CN - 8620****Inventor(s):**

Han Shaojie, Han Bo / Guangzhou Lvpin Zhixing Certification Co., Ltd.

**Invention Title:**

High-Quality Product Certification Method and System Based on Admission Determination and Trusted Evidence (PKISO)

**Invention Description:**

PKISO transforms compliance into quantified quality evaluation through dual-rule benchmarking, trusted evidence storage, and QR verification, enabling benchmark-based consumption.

**Category:**

N ) Hardware - Software - Cybersecurity - Blockchain - Internet of things (IoT)

**Invention ID: CN - 8621****Inventor(s):**

Xiaoxiao Chen, Xinhang Chen, Peng Zhou, Shiyu Zheng, Taoli Shen, Jing Xu, Siqi Shen, Yunlong Hu, Weiqiang Qi, Yiliang Wang, Yi Zhao, Liying Zong Branch / State Grid Zhejiang Electric Power Co., Ltd. Information and Communication

**Invention Title:**

LLM-Guided Cybersecurity Alerts Intelligent Closed-Loop Defense

**Invention Description:**

This project revolutionizes power industry cybersecurity via an autonomous "AI-on-Duty" system. Addressing alert fatigue and slow responses, it integrates three breakthroughs: an "Alert Drift Degree" engine achieving 95% noise reduction and threat detection accuracy, a multi-agent architecture for rule-free attack chain reconstruction (cutting response time to 30 seconds) by the "Collaborative Analysis Bus", and natural language-guided threat hunting. Validated by four patents, two EI-indexed conferences and awards from businesses and sectors, this project leads the global strategic deployment of "AI+" in power information network protection. It has been deployed across 18 major provincial and regional power operation companies internationally, benefiting hundreds of millions of users and generating approximately 80 million US dollars in annual profits.

**Category:**

N ) Hardware - Software - Cybersecurity - Blockchain - Internet of things (IoT)

**Invention ID: CN - 8622****Inventor(s):**

Pan Yu, Ren Yupeng, Meng Qiaolin, Yin Ziming, Gao Shuo, Xie Ruimou, Ni Xueyi / Beijing Tsinghua Changgung Hospital

**Invention Title:**

NeuroRehab360: An Integrated Full-Cycle Rehabilitation Platform and Intelligent Multi-Joint Training System

**Invention Description:**

An intelligent continuous rehabilitation system integrating a data platform, rehabilitation pathway generation, and adaptive devices across ICU, hospital, community, and home care.

**Category:**

M ) Medical Technology - Medical Engineering - Medicine - Hygiene

**Invention ID: CN - 8623****Inventor(s):**

Song Bo, Wang Zhongxin, Feng Xuehui, Liu Chang, Hu Jianhua, Wang Hui, Chen Hongliang, Liang Yuanyuan / China Coal Technology & Engineering Group Shenyang Design & Research Institute Co., Ltd.

**Invention Title:**

Bucket Wheel Excavator Applicable to Mining Relatively Hard Materials

**Invention Description:**

This bucket-wheel excavator is suitable for excavating hard materials in open-pit mines and can work with trucks or belt conveyors for material transportation.

**Category:**

A ) Mechanics - Engines - Machinery - Robotic - Tools - Industrial Process - Metallurgy

**Invention ID: CN - 8624****Inventor(s):**

Jinlong He / Sichuan University

**Invention Title:**

Novel Polymer Membrane Technologies and Applications in Ultrasensitive Transmembrane Transport

**Invention Description:**

This project develops pore-wall-friction-engineered polymer membranes to enlarge pores, tune wall friction, create differential water/solute resistance, and decouple permeability from selectivity.

**Category:**

C ) Building - Architecture - Civil Engineering - Construction - Materials - Woodwork

**Invention ID: CN - 8625****Inventor(s):**

Yong Zhang, Zhilong Zhang, Yunjie Lu / Shanghai Superhigh Environmental Technology Co., Ltd.

**Invention Title:**

Composite Materials with Wave Absorption or Scattering Characteristics and Their Preparation Methods

**Invention Description:**

This project stands at the forefront of new materials, pioneering a "plasma polarization + electric field induction" process that solves the industry-wide challenge of poor dispersion and orientation of rare earths/carbon nanotubes within the matrix. Through precise microstructural control, we have developed a lightweight composite material featuring both high-efficiency wave absorption and geometric scattering properties. Testing confirms excellent performance with a reflection loss of up to -14.1 dB across the ultra-wide 6-40 GHz frequency band. The technology is ready for continuous production, promising to significantly reduce costs for high-end stealth equipment and 5G base stations while breaking the foreign monopoly. With the rise of the low-altitude economy and 6G communications, the market potential is vast.

**Category:**

A ) Mechanics - Engines - Machinery - Robotic - Tools - Industrial Process - Metallurgy

**Invention ID: CN - 8626****Inventor(s):**

Tao Ding, Wenhao Jia, Chenggang Mu, Zhuopu Han, Yuankang He, Yixun Xue, Zhijie Ma / Xi'an Jiaotong University, Shaanxi D&I Electric Power Technology Co. Ltd., Shanxi Energy Internet Research Institute

**Invention Title:**

A Novel Light Blockchain-based Energy Sharing System

**Invention Description:**

It proposes a lightweight blockchain energy sharing system to solve renewable energy abandonment. Combined with various technologies, it realizes power consumption and trading.

**Category:**

P ) Energy - Renewable and green energy

**Invention ID: CN - 8627****Inventor(s):**

Wei Bai, Weifan Deng, Naiwen Deng, Yuzhu Li, Xiang Ni, Kang Lu, Liang Xiong / China University of Geosciences (Wuhan)

**Invention Title:**

Extraterrestrial Ultrasonic Drilling and In-situ Sampling System

**Invention Description:**

This project independently develops an ultrasonic drilling and sampling system for extraterrestrial bodies.

**Category:**

A ) Mechanics - Engines - Machinery - Robotic - Tools - Industrial Process - Metallurgy



**Invention ID: CN - 8628**

**Inventor(s):**

Ni Yang, Wei Jin, Zheng Hao / Architecture Design & Research Institute, South China University of Technology Co., Ltd.

**Invention Title:**

AI-Assisted Design System for Wind-Thermal Dual-Driven Ventilation Shaft Cavities

**Invention Description:**

Under dual-carbon goals, this AI system uses CFD and deep learning to predict wind-thermal conditions and optimize ventilation shaft cavities for low-energy buildings

**Category:**

C ) Building - Architecture - Civil Engineering - Construction - Materials - Woodwork



**Invention ID: CN - 8629**

**Inventor(s):**

Wenjun Yi, Tianhong Xiong, Jun Liu, Qi Wang, Xinyu Zhong, Weitao Yi / NJUST / Nanjing University of Science and Technology

**Invention Title:**

Collaborative Air-Ground Obstacle Avoidance Navigation in Complex Environments

**Invention Description:**

The project through collaborative sensing between UAVs and UGVs, the algorithm enables UGVs to achieve path planning and autonomous obstacle avoidance in GPS-denied environments.

**Category:**

B ) Electronics - Electricity - Methods of Communication



**Invention ID: CN - 8630**

**Inventor(s):**

Ye Zhengfang, Zhao Quanlin, Liu Guohua, Zhou Lincheng, Lu Xinyue, Jiang Zhe, Li Zhi / Peking University

**Invention Title:**

Novel Immobilized Microbial Technology for Treatment of High-Nitrogen Organic Wastewater

**Invention Description:**

The first synthesis of macroporous reticular bioactive polymer carriers and efficient nitrate-degrading microorganisms for the green management of water pollution.

**Category:**

P ) Energy - Renewable and green energy



**Invention ID: CN - 8631**

**Inventor(s):**

Chen Yongbing, Li Sidan, Zhang Qian, Zhang Bingdong, Xing Guirong / Beijing Shijitan Hospital, Capital Medical University, China Science Huachen Innovatech Co., Ltd.

**Invention Title:**

Laparoscopic Surgical Robot with Microwave Scalpel and Embodied Intelligent

**Invention Description:**

Can only propagate linearly, losing the flexibility advantage of the robot's articulated wrist. To address these limitations, we have developed a microwave platform and an embodied

**Category:**

M ) Medical Technology - Medical Engineering - Medicine - Hygiene



**Invention ID: CN - 8632**

**Inventor(s):**

Gao Shuo, Wang Zihao, Li Wei, PanYu, Wang Zhaoqing / Beihang University; Capital Medical University, Tsinghua University, Beijing Tsinghua Changgung Hospital

**Invention Title:**

FlexSense: A Flexible-Sensing-Enabled System for Dynamic Human Health Data Acquisition and Intelligent Analysis

**Invention Description:**

A full-chain digital medical solution featuring bionic sensing, dynamic calibration, layout optimization and intelligent decision-making.

**Category:**

M ) Medical Technology - Medical Engineering - Medicine - Hygiene



**Invention ID: CN - 8633**

**Inventor(s):**

Chi Wu, Liyuan Gao, Enze Han, Ruogu Wu, Chenzhe Hang, Mingxing Wang, Yingzhe Jia / Southern Marine Science and Engineering Guangdong Laboratory (Guangzhou)

**Invention Title:**

Full-Ocean-Depth Environmental Simulation and Metrology Calibration System

**Invention Description:**

The invention is the world's first full-ocean-depth environmental simulator and metrological calibration system for testing ocean sensors from sea surface to Mariana Trench.

**Category:**

A ) Mechanics - Engines - Machinery - Robotic - Tools - Industrial Process - Metallurgy



**Invention ID: CN - 8634**

**Inventor(s):**

Junnian Wang, Changyang Guan, Chunlin Zhang, Zhe Liu, Bin Yang, Nana Sun / Jilin University

**Invention Title:**

Centralized Electric Torque Vectoring Drive System

**Invention Description:**

E-TVDS (Centralized Electric Torque Vectoring Drive System): innovative drive system for high-end electric vehicles with fast, precise, full-range active torque distribution.

**Category:**

J ) Traffic - Transport - Car Accessories



**Invention ID: CN - 8635**

**Inventor(s):**

Yongchong Chen, Hao Liu, Yingyuan He, Caimei Feng, Bin Zhang, Cheng Liang, Peiyuan Zhou / Sichuan Energy Internet Research Institute, Tsinghua University - HAWAGA Energy Storage Technology (Chengdu) Co., Ltd

**Invention Title:**

Intrinsically Safe Semi-Open Battery and Energy Storage System

**Invention Description:**

The semi-open battery integrates safety and regeneration systems, offering intrinsic safety, extended lifespan, and green recyclability

**Category:**

P ) Energy - Renewable and green energy

# WELCOME TO CHINA

# IEI 2026

## 12th International Exhibition of Inventions

Guangzhou – China

Dates: August 21–23, 2026

Venue: Guangzhou, China

China Association of Inventions

int@cainet.org.cn



**Invention ID: CN - 8636**

**Inventor(s):**

Xiaochun Zhang, Tao Lin, Xing Liu, Gong Cheng, Lijian Zhuang, Weiqun Zhuang, Junyuan Li / Shenzhen Urban Transport Planning Center Co., Ltd. / Shenzhen Institute for Advanced Study, UESTC

**Invention Title:**

Key Technologies for Digital Twin Simulation of Urban Multimodal Transportation Systems

**Invention Description:**

Fusing multi-source data for traffic behavior identification & complex flow simulation, with 91% behavior mapping, 85% flow & situation prediction accuracy & 5s 1h-event inference.

**Category:**

N ) Hardware - Software - Cybersecurity - Blockchain - Internet of things (IoT)

**Invention ID: CN - 8637**

**Inventor(s):**

Xinping Wang, Shumin Yang, Jianbo Guo, Yu Wang, Shirong Guo, Chenglin Lü, Yang Gu, Yachao An, Lei Yang, Lei Zhou, Tengwu Qi / China Railway 22nd Bureau Group Co., Ltd.

**Invention Title:**

Rectangular Steel Sleeve Construction Method for Station Crossing and Reception of Pipe Jacking Equipment

**Invention Description:**

Developed rectangular steel sleeve pipe jacking technology solving traditional excavation pain points, internationally leading, with wide applications and outstanding benefits.

**Category:**

C ) Building - Architecture - Civil Engineering - Construction - Materials - Woodwork

**Invention ID: CN - 8638**

**Inventor(s):**

Zhongkai Yi, Haojie Yang, Ying Xu, Zhenghong Tu, Xiaohu Ran, Jinmeng Zhang, Han Gao / Harbin Institute of Technology

**Invention Title:**

Efficient Control and Operation System for Virtual Power Plants with Massive Distributed Flexible Resources

**Invention Description:**

It solves key bottlenecks of massive distributed flexible resources in new-type power systems, develops a high-efficiency VPP control system and an integrated operation platform.

**Category:**

B ) Electronics - Electricity - Methods of Communication

**Invention ID: CN - 8639**

**Inventor(s):**

Ji Han, Fang He, Yingyu Tan, Lei Jiao, Jinrui Han, Minmin Zhang, Qinfeng Li / Coolkind Technology Co., Ltd.; Zhejiang University

**Invention Title:**

Long-reach Integrated Vessel for Salvage, Separation and Dewatering of Cyanobacteria

**Invention Description:**

5G cloud-controlled 30m long-arm enclosing compression all-electric cyanobacteria cleaner with multi-source fusion, auto obstacle avoidance, 311.2t/h separation & 96.7% removal.

**Category:**

A ) Mechanics - Engines - Machinery - Robotic - Tools - Industrial Process - Metallurgy



**Invention ID: CN - 8640**

**Inventor(s):**

Yu Guangbin, Li Changshan Daibing, Shen Aihua / Harbin Institute of Technology

**Invention Title:**

Intelligent Large-Scale Ice Sculpture Automated Building Robot

**Invention Description:**

The robot has achieved full automation of ice sculpture construction, ensuring millimeter-level precision while drastically improving efficiency and safety in extreme cold.

**Category:**

C ) Building - Architecture - Civil Engineering - Construction - Materials - Woodwork



**Invention ID: CN - 8641**

**Inventor(s):**

Chengwei Fei, Bowei Wang, Peng Ren, Xiangjun Fang, Ying Han, Shupeng Fang / Fudan University

**Invention Title:**

Multi-stage brush seal structure and key technologies with adjustable final stage pressure drop

**Invention Description:**

This project developed an active intelligent pressure relief control system and a combined brush seal structure, improving the efficiency and reliability of turbomachinery.

**Category:**

A ) Mechanics - Engines - Machinery - Robotic - Tools - Industrial Process - Metallurgy



**Invention ID: CN - 8642**

**Inventor(s):**

Gao Lu, Yu Guoxia, Chen Zhiyu, Lei Yi, Wang Qing, Sun Zhipeng, Lv Sicheng / Beijing Children's Hospital, Capital Medical University

**Invention Title:**

A Sobel Operator-Based Method and System for Midpalatal Suture Image Reconstruction

**Invention Description:**

A Sobel-based midpalatal suture reconstruction via CBCT texture & CNN achieves precise assessment (AUC 0.91), guiding treatment timing, preventing facial/systemic issues.

**Category:**

M ) Medical Technology - Medical Engineering - Medicine - Hygiene



**Invention ID: CN - 8643**

**Inventor(s):**

Zhiwei Mao, Wei Zhang, Shufeng Wang, Wenjun Li, Lixu Liu / Nanchang University, Make Creation (Beijing) Technology Co., Ltd.

**Invention Title:**

Nested elastic element driven hand rehabilitation exoskeleton robot

**Invention Description:**

We proposed a novel nested elastic actuation mechanism and developed a lightweight (840 g), 10-DOF hand exoskeleton robot that offers ease of wear and broad size compatibility.

**Category:**

M ) Medical Technology - Medical Engineering - Medicine - Hygiene



**Invention ID: CN - 8644**

**Inventor(s):**

Zhenhao Xi, Ling Zhao, Xiaoyi Qiu, Jie Jiang, Jinjin Li, Huan Huang, Xuesong Wang, Zhaoqi Cui, Xincheng Zhang / East China University of Science and Technology

**Invention Title:**

Industrial Application of Large-Scale, High-Efficiency Polymer Purification Technology and Complete Equipment

**Invention Description:**

Based on the proprietary physical property database, high-efficiency devolatilization technology and devolatilization equipment were developed for efficient polymer purification.

**Category:**

A ) Mechanics - Engines - Machinery - Robotic - Tools - Industrial Process - Metallurgy



**Invention ID: CN - 8645**

**Inventor(s):**

Wu Ziyin, Zhou Jieqiong, Zhao Dineng, Wang Mingwei, Zhang Yunfei, Yao Bin / Second Institute of Oceanography, MNR, China

**Invention Title:**

AUVIS: Autonomous Uncrewed Vessel System for Intelligent Seafloor Mapping

**Invention Description:**

Oriented toward intelligent seafloor mapping, this project developed a modular autonomous vessel system with clustered operation, now used in 30+ countries and regions.

**Category:**

A ) Mechanics - Engines - Machinery - Robotic - Tools - Industrial Process - Metallurgy



**Invention ID: CN - 8646**

**Inventor(s):**

Meiyun Wang, Dinggang Shen, Yaping Wu, Yan Bai, Wei Wei, Lingzhi Hu, Tuoyu Cao, Jianmin Yuan / Henan Provincial People's Hospital

**Invention Title:**

Systems and Methods for Correlating Medical Images with Medical Reports

**Invention Description:**

This invention presents a universal image-text alignment method for brain MRI to realize efficient matching between multi-sequence images and clinical reports.

**Category:**

M ) Medical Technology - Medical Engineering - Medicine - Hygiene



**Invention ID: CN - 8647**

**Inventor(s):**

Xing Jin, Yonglong Lu, Zhiyong Guo, Weiming Zhang, Jiawei Wen, Huasen Liu, Wenkai Zhu / China Railway 16th Bureau Group Co., Ltd., China Railway 16th Bureau Group First Engineering Co., Ltd.

**Invention Title:**

Key Technologies for Safe Construction of Highway Tunnels with High-Concentration Gas and Hydrogen Sulfide Mixed Gas in High-Altitude Areas

**Invention Description:**

By revealing migration laws and developing technologies such as blasting plugging, grouting anti-seepage and intelligent ventilation, precise control of harmful gases is achieved.

**Category:**

C ) Building - Architecture - Civil Engineering - Construction - Materials - Woodwork



**Invention ID: CN - 8648**

**Inventor(s):**

Zhang Qiangyong, Li Shucui, Duan Kang, Wang Hanpeng, Xiong Qingrong, Wang Pengfei, Lin Hanxiang, Chen Changpeng, Zhang Ruixin, Zhao Yu / Shandong University

**Invention Title:**

Large-Scale Intelligent Numerical Control Model Test System for Simulating Catastrophic Evolution of Deep Underground Engineering

**Invention Description:**

This project has developed a large-scale intelligent numerical control model test system for simulating catastrophic evolution of deep engineering under complex conditions.

**Category:**

C ) Building - Architecture - Civil Engineering - Construction - Materials - Woodwork



**Invention ID: CN - 8649**

**Inventor(s):**

Nan Ma, Yajue Yang, Genbao Xu, Zhixuan Wu, Ye Liang, Yiheng Han / Beijing University of Technology

**Invention Title:**

Embodied AI-Driven Human-Vehicle Interaction for Autonomous Driving

**Invention Description:**

The project builds autonomous driving embodied intelligence with human-like intent understanding and precise interaction, achieving large-scale open urban operations.

**Category:**

B ) Electronics - Electricity - Methods of Communication



**Invention ID: CN - 8650**

**Inventor(s):**

Yang Fan, Xia Yi, Wu Jiacheng, Wang Lihua, Chen Tingrui, Zhang Wenyu, Wang Peng, Li Puhao / Tongji University

**Invention Title:**

Reconfigurable Lightweight Lattice Materials with Multifunctionality and Their Applications

**Invention Description:**

Lightweight and efficient utilization of materials is achieved by integrating multi-stable characters into lattice materials through tension structure and rotational array design.

**Category:**

C ) Building - Architecture - Civil Engineering - Construction - Materials - Woodwork



**Invention ID: CN - 8651**

**Inventor(s):**

Zhu Jiahui, Wei Defu, Ding Kaizhong, Chen Panpan, Dong Yujun, Zheng Nan / China Electric Power Research Institute Ltd.

**Invention Title:**

Magneto-biased High-Temperature Superconducting Fault Current Limiter and its Long-Term Demonstration at a 66 kV Substation

**Invention Description:**

This project develops a novel magneto-biased superconducting current limiting technology, marked its grid-connected operation for the first time in China.

**Category:**

B ) Electronics - Electricity - Methods of Communication



**Invention ID: CN - 8652**

**Inventor(s):**

Guoquan Lu / Zhongzhou Energy Conservation Technology Co., Ltd.

**Invention Title:**

Distributed Waste Pyrolysis Cold Emission Energy Station

**Invention Description:**

"Distributed waste pyrolysis cold emission energy station" is to convert domestic waste and general combustible industrial waste (organic solid waste) into energy.

**Category:**

P ) Energy - Renewable and green energy



**Invention ID: CN - 8653**

**Inventor(s):**

Kai Yang, Xuhui Ding, Zhen Chen, Gaoyang Li, Jiaxuan Li / Beijing Institute of Technology

**Invention Title:**

Ultra-Low Power, Ultra-Reliable: The Analog Probability Processing Chip for Next-Gen IoT

**Invention Description:**

An ultra-low-power analog probability processing chip for next-gen IoT, enabling reliable probabilistic signal processing, saving bandwidth, and lowering receiver power.

**Category:**

N ) Hardware - Software - Cybersecurity - Blockchain - Internet of things (IoT)



**Invention ID: CN - 8654**

**Inventor(s):**

Qiang Gao, Jianzhang Li, Lixin Bu, Hongwei Bu / Beijing Forestry University

**Invention Title:**

A Formaldehyde-Free Plant Protein Adhesive as well as Production and Application of Its Engineered Wood Panel Products

**Invention Description:**

The novel protein molecular adhesion strategy yields waterproof, mildewproof and cost-effective outcomes and formaldehyde-free plant protein adhesive and wood-based panel products.

**Category:**

C ) Building - Architecture - Civil Engineering - Construction - Materials - Woodwork



**Invention ID: CN - 8655**

**Inventor(s):**

Kai Liu, Zhizhen Du, Linwu Wang, Wenfu Wei, Bo Gao, Zefeng Yang, Ruifan Xu / Southwest Jiaotong University

**Invention Title:**

Digital Twin Intelligent Operation and Maintenance Method for Electrical Equipment

**Invention Description:**

Digital twins collect electrothermal data, temperature curves and anomaly infrared images to improve detection, reduce faults and ensure train safety.

**Category:**

J ) Traffic - Transport - Car Accessories



**Invention ID: CN - 8656**

**Inventor(s):**

Zhaofeng Dong, Xuanming Wei, Jinfang Yang, Qunqun Hao, Chenyao Li / Shaanxi Guantu Biotechnology Co., Ltd

**Invention Title:**

Development and Application of Recombinant Type I&III Fusion Collagen with Low Immunogenicity Based on Stabilization Strategies

**Invention Description:**

Synbio type I&III collagen. Tag-free, G-X-Y optimized. 121°C stable, 99% purity, 4°C/12mo. 10x stability. Low immunogenicity, endotoxin <0.05 EU/mg. Aesthetics, repair, anti-aging.

**Category:**

Q ) Paramedical - Health - Foodstuffs - Drinks - Cosmetics



**Invention ID: CN - 8657**

**Inventor(s):**

Shuai Song, Feiyang Pan, Yuchao Wang, Jianan Qin, Jingya Zhang / Jiangsu FTCM Life Science & Technology Development Co., Ltd

**Invention Title:**

Application of Fermented Ginseng Technology in Nourishing Kidneys, Tonifying Yang, and Enhancing Qi to Combat Fatigue - Probiotic Fermentation Technology Promotes the Modernization of Traditional Chinese Medicine

**Invention Description:**

Ginseng causes "heatiness" & low bioavailability. We solved this with patented fermentation & zebrafish screening.

**Category:**

Q ) Paramedical - Health - Foodstuffs - Drinks - Cosmetics



**Invention ID: CN - 8658**

**Inventor(s):**

Gao Xiang, Ding Hongqiang, Ma Yuanyuan, Cui Zhiwei, Zhang Liting, Ma Wenjun, Liu Yan, Liu Yafan, Gao Feng / Hebei Water Conservancy Engineering Bureau Group Limited; Hebei Water Conservancy Research Institute; Shijiazhuang Railway University

**Invention Title:**

Water Supply Pipe Network Collaborative Efficiency-enhancing Hydropower System and Intelligent Regulation Method

**Invention Description:**

Develop synergistic high-efficiency hydropower system and intelligent control for pressurized pipelines to efficiently recycle surplus hydraulic energy from water supply networks

**Category:**

C ) Building - Architecture - Civil Engineering - Construction - Materials - Woodwork



**Invention ID: CN - 8659**

**Inventor(s):**

Nie Minglong, Chen Ruiyin, Yu Taiji / Liaoning Technical University, Research Institute of Petroleum Exploration and Development

**Invention Title:**

Technology for Quantitative Evaluation of Hydrocarbon Generation and Expulsion and Sweet-Spot Identification in Oil Shale

**Invention Description:**

The integrated technical framework consists of four interrelated modules, The technology demonstrates significant practical value for shale oil resource assessment.

**Category:**

P ) Energy - Renewable and green energy



**Invention ID: CN - 8660**

**Inventor(s):**

Shuo Qiao, Feng Shi / National University of Defense Technology

**Invention Title:**

Apparatus and Method for Reactive Ion Beam Etching of Micro-nano Structures on High-precision Optical Components

**Invention Description:**

High-precision Reactive Ion Beam Etching system developed. 3D micro-nano structures, 10 to the minus 5 reflectance, 1.5x LIDT boost. Revolutionizes high-energy laser optics.

**Category:**

A ) Mechanics - Engines - Machinery - Robotic - Tools - Industrial Process - Metallurgy



**Invention ID: CN - 8661**

**Inventor(s):**

Han Rongjie, Fang Xiang, Ding Jian, Fan Libo, Wang Yi, Tu Yongwei, Gao Yufeng, Song Jia, Wang Qifeng, Su Liangzhi, Wu Weihua, Jiang Jian, Long Lijuan, Hu Zheqian, Dong Dachu, Zhou Yuhan / State Grid Hangzhou Power Supply Company

**Invention Title:**

GridPulse AI: Power Grid Artificial Intelligence Condition Diagnosis & Active Operation and Maintenance System

**Invention Description:**

GridPulse AI innovatively integrates traditional Chinese pulse diagnosis wisdom with advanced power digital technologies. Featuring integrated on-site perception, multi-source data analysis and holistic risk decision-making, it overcomes technical bottlenecks of traditional power grid operation and maintenance. Supported by embodied intelligent devices and super intelligent computing infrastructure, the system realizes full-process intelligent pulse diagnosis for power grid operation, accurately detecting hidden risks and forecasting potential faults in advance. With remarkable pilot effects, it improves maintenance efficiency, reduces costs and strengthens grid security. As a replicable digital transformation solution adaptable to all transmission, distribution and power supply scenarios, it boasts strong implementation and commercial value, providing vital technical support for global energy security and low-carbon sustainable development.

**Category:**

B ) Electronics - Electricity - Methods of Communication



# CROATIA



**DZIV**  
ABBREVIATION



## State Intellectual Property Office of the Republic of Croatia

Croatia has a dynamic and open **innovation ecosystem** supported by a skilled workforce, a strong scientific base, and **increasing investment in research** and development. The country's strategic position within the European Union enhances **collaboration, technology transfer, and access to wider markets**. Intellectual property plays a key role in supporting innovation, attracting investment, and fostering the commercialization of new technologies. Through a modern and efficient IP system, Croatia continues to strengthen its patent landscape and integration into global innovation networks, contributing to sustainable economic growth and technological advancement.



**733**

PATENT  
APPLICATIONS

2024



**79<sup>th</sup>**

GLOBAL  
RANK

2024



**13,431**

PATENTS IN FORCE

2024



**230**

APPLICATIONS BY  
RESIDENTS WORLDWIDE

2024



Capital

Zagreb



Population

3.86 million  
(2024)



GDP (Nominal)

USD 86.16 billion  
(2024)



Patent Office

DZIV



WIPO Member

Yes(Since 1992)

Source: WIPO – World Intellectual Property Indicators 2025 (Patents Highlights 2025)



## Croatia

Croatian Union of Innovators

Website: [www.inovatorstvo.com](http://www.inovatorstvo.com)

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Phone: +385 1 4886 540

Address: Dalmatinska 12, 10 000 Zagreb, Croatia



**Invention ID: HR - 3851**

**Inventor(s):**

Marko Maricevic, Tibor Skala, Lara Maricevic, Paula Srdanovic / University of Zagreb, Faculty of Graphic Arts

**Invention Title:**

My Happy Coloring Book - Offline AI Coloring Page Generator

**Invention Description:**

My Happy Coloring Book is a unique AI application that generates completely original, high quality coloring pages in just a few seconds - entirely offline, without any internet connection. This ensures maximum privacy and safety for children, which is a key advantage over existing online solutions.

**Category:**

N ) Hardware - Software - Cybersecurity - Blockchain - Internet of things (IoT)



**Invention ID: HR - 3852**

**Inventor(s):**

Nenad Prekupec / AppSkill Ltd.

**Invention Title:**

Stambio.eu

**Invention Description:**

Stambio is building the digital infrastructure layer for residential buildings, a Building Operating System that serves as the trusted source of truth for every participant in the building ecosystem. Instead of creating another property management application, Stambio establishes a canonical data model that represents the building itself.

**Category:**

N ) Hardware - Software - Cybersecurity - Blockchain - Internet of things (IoT)



**Invention ID: HR - 3853**

**Inventor(s):**

Josip Sincek

**Invention Title:**

Power Multiplier

**Invention Description:**

Technical circuit for multiplying power with the purpose of producing electricity.

**Category:**

A ) Mechanics - Engines - Machinery - Robotic - Tools - Industrial Process - Metallurgy



**Invention ID: HR - 3854**

**Inventor(s):**

Domagoj Orec

**Invention Title:**

IZO-DOM Thermal Insulation Made from Recycled Textiles

**Invention Description:**

Thermal insulation made from recycled textiles

**Category:**

C ) Building - Architecture - Civil Engineering - Construction - Materials - Woodwork



**Invention ID: HR - 3855**

**Inventor(s):**

FAZOS / Faculty of Agrobiotechnical Sciences Osijek

**Invention Title:**

Soil Microplastic Detection Methodology

**Invention Description:**

The proposed innovation represents a new, standardized, and efficient methodology for the detection, quantification, and classification of microplastics in soil samples. This methodology combines physico-chemical and analytical techniques with optimized procedures for microplastic extraction from soil.

**Category:**

H ) Agriculture - Forestry and Garden - Pet and Farm Animal Supplies



**Invention ID: HR - 3856**

**Inventor(s):**

Tomislav Hodalj / EGORRA Ltd.

**Invention Title:**

Liquid Wood

**Invention Description:**

Handmade wooden bathroom sink and shower tray which are made of the highest quality natural materials thanks to innovative wood processing technology and achieving its waterproofness.

**Category:**

G ) Commercial, Industrial and Office Equipment





# DEMOCRATIC REPUBLIC OF THE CONGO

Directorate of Industrial Property  
Direction de la Propriété Industrielle

## Directorate of Industrial Property

Direction de la Propriété  
Industrielle

National industrial property  
office of the Democratic  
Republic of the Congo

The Democratic Republic of the Congo has a large resource base, a rapidly growing population, and long-term innovation potential linked to mining, energy, agriculture, services, and emerging digital activity. Its formal intellectual property system is centered in Kinshasa through the Directorate of Industrial Property, while WIPO data indicate that reported patent activity remains modest by international standards. This pattern suggests that the country is still at an early stage of patent-system depth, with significant room for stronger research commercialization, institutional capacity, technology transfer, and innovation support for enterprises and inventors. Intellectual property can play an important role in helping transform scientific, technical, and industrial ideas into protected assets, especially in resource processing, agriculture, public-health solutions, infrastructure-related technologies, and small-scale manufacturing. The country's scale, strategic location, hydropower and mineral endowments, and youthful demographics provide a foundation for future innovation-led development, provided that market linkages, investment, skills, and administrative capability continue to strengthen.



PATENT APPLICATIONS

Official data not  
available



GLOBAL RANK

132<sup>nd</sup>  
2024



PATENTS IN FORCE

Official data not  
available



APPLICATIONS BY RESIDENTS  
WORLDWIDE

9  
2024



Capital

Kinshasa



Population

112.8M  
2025



GDP (Nominal)

US\$91.03B  
2025



Patent Office

Directorate of  
Industrial Property



WIPO Member Since

1975



Source: WIPO Statistical Country Profile 2024; WIPO IP Statistics Database; WIPO Country IP Profile (DR Congo); World Bank Open Data (Population 2025, GDP current US\$ 2025); UN Data (Capital 2025).

Where national-office statistics were not reported by approved sources, the infographic states 'Official data not available'.

## Democratic Republic of the Congo

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Lebanese School in Kinshasa

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Gombe, Democratic Republic of the Congo



Invention ID: CD - 24301

Inventor(s):

Zahraa Fadel, Ranim Khatoun, Ali Soukieh / Project Supervisors: Maher Osman, Nada Berry

Invention Title:

Eco-Cycle Plate: Circular Solution to Plastic Pollution

Invention Description:

Biodegradable plates made from banana peels, cassava starch and coconut shells. They replace plastic tableware and naturally decompose into organic fertilizer.

Category:

P ) Energy - Renewable and green energy



Invention ID: CD - 24302

Inventor(s):

Maher Osman , Ibrahim Baydoun / Project Supervisor: Maher Osman

Invention Title:

Autonomous Eco-Guardian: A Smart Laser-Based Glass Detection Robot for Wildfire Prevention and Public Safety

Invention Description:

Autonomous laser-guided robot that detects hazardous glass fragments, prevents wildfire ignition, identifies injury risks, and transmits GPS coordinates in real time.

Category:

E ) Security - Rescue - Alarm



Invention ID: CD - 24303

Inventor(s):

Mohamad Hssayki, Ranime Khalil, Karim Issa

Invention Title:

BLINDVISION AI / AI-Powered Offline Wearable Assistant for the Visually Impaired

Invention Description:

BlindVision AI is an offline wearable assistant that recognizes people, detects objects, and reads text aloud, empowering visually impaired users to live more independently.

Category:

M ) Medical Technology - Medical Engineering - Medicine - Hygiene

# HONG KONG SAR, CHINA

Special Administrative Region of China

## IPD

Intellectual  
Property  
Department

Government of the Hong Kong  
Special Administrative Region

Hong Kong SAR maintains a highly internationalized, service-oriented economy with deep links to global trade, finance, logistics, and innovation networks. Its patent system serves both local and non-resident applicants, reflecting Hong Kong's role as an internationally connected business and IP jurisdiction.

Resident-origin patenting is comparatively modest in absolute scale but internationally outward-looking, with strong use of overseas patent systems to support global market strategies.

Leading technical fields among resident patent applications include electrical machinery, computer technology, digital communication, and pharmaceuticals—areas aligned with Hong Kong's innovation strengths and its position in regional and global value chains.



PATENT  
APPLICATIONS

15,940

Total applications  
at the IP office  
2024



GLOBAL  
RANK

14<sup>th</sup>

By total patent  
applications filed at the  
IP office, 2024



PATENTS IN  
FORCE

73,249

Latest available  
WIPO figure  
2024



APPLICATIONS BY  
RESIDENTS WORLDWIDE

2,841

Patent applications  
filed worldwide by  
residents, 2024



Capital

Hong Kong



Population

7.50M

2025



GDP (Nominal)

US\$427.31B

2025



Institutional Status  
Special Administrative  
Region of China

Source: WIPO Statistical Country Profile 2024: China, Hong Kong SAR; WIPO IP Statistics Data Center and WIPO Statistics Database, updated July 2026; World Bank Open Data, Population and GDP, 2025.

# Hong Kong SAR

The Education University of Hong Kong

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of Hong Kong, Tai Po, Hong Kong SAR



**Invention ID: HK - 85201**

**Inventor(s):**

Dr. Yang Yin, Prof. Lee Chi Kin John, Prof. Gu Ming Yue, Prof. Ma Qing, Prof. Kong Siu Cheung, Prof. Chiu Ming Ming, Dr. Wong Ming Har, Dr. Ling Man Ho Alpha, Dr. Ba Shen

**Invention Title:**

CWrite: An AI-Assisted Platform for Young Writers to Think, Create, and Grow

**Invention Description:**

CWrite redefines AI as a thinking partner, not a shortcut. Designed for primary ESL/EFL students, it uses a patented graph-based narrative system with gated progression to enable structured, traceable, and values-driven human-AI co-creation through CEFR-aligned diagnostics, adaptive scaffolding, and multimodal storytelling.

**Category:**

O ) Teaching Research - Pedagogical Items



**Invention ID: HK - 85202**

**Inventor(s):**

Dr. Cheng Jinping, Mr. Liu Jingyu

**Invention Title:**

BioSentinel Passive eDNA/eRNA Enrichment and Sampling System

**Invention Description:**

A portable, flexibly deployable passive eDNA/eRNA enrichment and sampling system enables remote, simultaneous multi-sample collection across large areas, saving 90% time and 75% cost. Integrated with an in-house eDNA reference database, it supports cost-effective, high-throughput, non-destructive detection of biota, enabling timely management actions.

**Category:**

G ) Commercial, Industrial and Office Equipment



**Invention ID: HK - 85203**

**Inventor(s):**

Dr. Tsang Yiu Fai, Ms. Xu Hui, Mr. Adigun Basit Akolade, Ms. Chan Yu Ki

**Invention Title:**

From Sludge to Structure: Transforming Waterworks and Sewage Sludge into Sustainable Concrete

**Invention Description:**

Sludge-transformed concrete is a ready-to-deploy solution for sewage and waterworks sludge disposal. Replacing 10-25% of conventional aggregate, it achieves 20-48 MPa strength for structural and non-structural use. Through a simple pre-treatment process, it cuts production costs by 32%, reduces odour and CO<sub>2</sub> emissions, achieving carbon neutrality.

**Category:**

C ) Building - Architecture - Civil Engineering - Construction - Materials - Woodwork



**Invention ID: HK - 85204**

**Inventor(s):**

Dr. Fu Hong, Prof. Chan Che Hin Chetwyn, Miss. Hou Beibei, Prof. Xu Yanwen, Prof. Wang Jun, Mrs. Wang Ying, Mr. Li Xiao, Miss. Qiu Minyu, Mr. He Ziyu, Miss. Wang Yanyue, Miss. Han Lin

**Invention Title:**

RoMetric: Intelligent Hand Function ROM Assessment System

**Invention Description:**

RoMetric is a patented computer vision system for automatic assessment of hand joint range of motion, a critical indicator of hand function. It quantifies 3D goniometry across 15 active joints (20 DOFs) using a standardised 7-pose protocol, offering precise, non-invasive measurement and rehabilitation guidance, reducing assessment time by up to 87%

**Category:**

Q ) Paramedical - Health - Foodstuffs - Drinks - Cosmetics



**Invention ID: HK - 85205**

**Inventor(s):**

Dr. Mung Wai Yin, Steve; Mr. Lai Chun Yin, Woody; Dr. He Zebang

**Invention Title:**

AI-Steered Wireless Circuit Design for Next-Generation 6G and Satellite Transmitters

**Invention Description:**

This invention uses deep neural network to precisely predict key linearity metrics in power amplifiers to get load-pull data. It cuts test time by >70% and reduces lab costs versus traditional methods, then automatically generates 3GPP compliant, low current matching networks to accelerate 6G & satellite system design across devices and bandwidths.

**Category:**

B ) Electronics - Electricity - Methods of Communication



**Invention ID: HK - 85206**

**Inventor(s):**

Song Yanjie, Lee Chi Kin John, Yeung Siu Sze Susanna, Fu Jiachen, Wu Kaiyi

**Invention Title:**

EmoCare - An AI-Powered Application to Foster Emotional Well-Being

**Invention Description:**

EmoCare is an AI-powered app grounded in the PERMA model to enhance teenagers' emotional well-being. It uses NLP for diary analysis, generative images for emotional expression, and an AI companion for personalised regulation. An analytics dashboard supports educators, psychologists, and social workers in effective monitoring and timely intervention

**Category:**

Q ) Paramedical - Health - Foodstuffs - Drinks - Cosmetics



**Invention ID: HK - 85207**

**Inventor(s):**

Dr. Chu Man Ying Amanda, Prof. So Ka Pui Mike, Dr. Chan Shun Hin Lupe

**Invention Title:**

ASAP: Automatic Speech Analytics Program for Early Personalised Psychosocial Health Assessment

**Invention Description:**

ASAP is a portable device for real-time psychosocial screening via textual and acoustic analysis. With >85% accuracy, it provides unbiased references during consultations, supports early intervention, streamlines workload through automated reporting, and uses longitudinal data management to enable personalised care plans.

**Category:**

Q ) Paramedical - Health - Foodstuffs - Drinks - Cosmetics



**Invention ID: HK - 85208**

**Inventor(s):**

Sin Kuen Fung, Fung Ka Yan, Lui Tsz Leung Rick, Fung Kwong Chiu

**Invention Title:**

Loving Baby - A Multi-Modal Interactive Cognitive Ability and Language Enhancement System for Special Needs

**Invention Description:**

A humanoid, multi-modal robot system that uses speech, gesture, games and SDT-based design to enhance inclusive language learning, engagement and emotional wellbeing, including positive thinking support, for primary students with and without SEN.

**Category:**

O ) Teaching Research - Pedagogical Items



# Hong Kong SAR

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**Invention ID: HK - 85209**

**Inventor(s):**

Si-Zhao J. QIN, Lisha YU, Weijian ZHANG, Haochen HOU

**Invention Title:**

GaitGPT: Bridging Clinical Reporting and Quantitative Gait Metrics for Accurate and Traceable Gait Analysis

**Invention Description:**

GaitGPT is an AI system enabling bidirectional translation between clinical gait language and quantitative biomechanical metrics. Unlike generic LLMs, it uses evidence-graph retrieval with threshold gating, measurability stratification, and biomechanical validation to ensure every output is traceable, evidence-bound, and clinically consistent.

**Category:**

M ) Medical Technology - Medical Engineering - Medicine - Hygiene



**Invention ID: HK - 85210**

**Inventor(s):**

Sam Tak Wu KWONG, Fuzhao OU, Shiqi WANG, Haifeng GUO

**Invention Title:**

Face Fortress: Adaptive All-In-One AI for Digital ID Safety

**Invention Description:**

Face Fortress is a state-of-the-art, comprehensive AI-driven identity verification ecosystem specifically engineered to secure and streamline university admissions and registration processes.

**Category:**

E ) Security - Rescue - Alarm



**Invention ID: HK - 85211**

**Inventor(s):**

Jiaxing SHEN, Wenxuan WANG, Zirui LIU, Haoxuan KOU

**Invention Title:**

IDShield: Privacy-Preserving Identity Protection for AI Dialogues

**Invention Description:**

IDShield protects privacy in AI conversations by detecting identity-revealing personal, contextual, and stylistic cues, then transforming them to preserve meaning, context, and task utility while reducing re-identification risk.

**Category:**

N ) Hardware - Software - Cybersecurity - Blockchain - Internet of things (IoT)



**Invention ID: HK - 85212**

**Inventor(s):**

Yujie KE, Xi CHEN, Yu ZHAO

**Invention Title:**

Water-Retentive Hydrogel Smart Windows: Cooling Without Power

**Invention Description:**

A scalable hydrogel-ITO smart window combining thermochromic hydrogel and low-emissivity coating for passive thermal regulation. The system provides radiative cooling and mode switching without electricity, reducing indoor temperature by up to 9 °C and annual cooling energy use by up to 34%.

**Category:**

C ) Building - Architecture - Civil Engineering - Construction - Materials - Woodwork



**Invention ID: HK - 85213**

**Inventor(s):**

George Chi Yu CHAN

**Invention Title:**

TransLab: AI-powered Translation Learning and Evaluation Suite

**Invention Description:**

TransLab is a novel pedagogy-driven AI suite that integrates translation learning, creativity support and explainable evaluation in one ecosystem. Unlike generic AI or CAT tools, it embeds rubrics, diagnostic feedback and human-designed assessment logic to make language training more scalable, transparent and educationally meaningful.

**Category:**

N ) Hardware - Software - Cybersecurity - Blockchain - Internet of things (IoT)



**Invention ID: HK - 85214**

**Inventor(s):**

Wangjiale XU, Yuxi LI, Yongxi LI, Chen WANG, Zongxi LI

**Invention Title:**

TokenSaver: Context-Aware Semantic-Structured Document Retrieval System via Visual Memory

**Invention Description:**

This invention is a RAG system that significantly reduces the number of tokens consumed during document-based question answering leveraging visual-language models and hierarchical semantic identifiers.

**Category:**

N ) Hardware - Software - Cybersecurity - Blockchain - Internet of things (IoT)



**Invention ID: HK - 85215**

**Inventor(s):**

Frankie King Sun LAM, Rosiah Wing HO

**Invention Title:**

Generative AI Assessment System (GAAS): A Game-Changer for Timely Student Feedback

**Invention Description:**

GAAS is a game-changer that accelerates student-centric learning through AI-powered assessment. It delivers timely, consistent, personalised feedback at scale for all class sizes, enhances learning outcomes and experience, supports diverse learners, and transforms equitable assessment design for educators in the AI era.

**Category:**

O ) Teaching Research - Pedagogical Items



**Invention ID: HK - 85216**

**Inventor(s):**

Ronnie H. SHROFF

**Invention Title:**

IDEAL-Gen.AI - Instructional Design Enhanced Active Learning through Generative Artificial Intelligence

**Invention Description:**

IDEAL-Gen.AI is a free, game-changing AI-driven platform for educators, from K-12 to higher education, that enables effort-less creation of customized lesson plans, learning activities and assessment tasks. Featuring advanced filters and editable prompts, it cuts preparation time by 90%, supports diverse teaching methods and is globally accessible.

**Category:**

O ) Teaching Research - Pedagogical Items



**Invention ID: HK - 85217**

**Inventor(s):**

Jialin LIU, Yunlong ZHAO, Yi YUAN, Qingquan ZHANG, Yuchen LI, Bo YUAN

**Invention Title:**

PCG.ME: Infinite Game Co-Creation Platform with Behaviour-Adaptive AI

**Invention Description:**

What if AI could help you build entire game worlds - and you stayed in control? PCG.ME makes that possible. It's a web platform where human creativity and multiple AI techniques work side by side to generate, evaluate, and refine game content, opening new possibilities for designers and researchers alike.

**Category:**

N ) Hardware - Software - Cybersecurity - Blockchain - Internet of things (IoT)



**Invention ID: HK - 85218**

**Inventor(s):**

Liupengfei WU

**Invention Title:**

BuildGuard: Blockchain Oracle AI for Instant Secure Compliance in Offsite Manufacturing

**Invention Description:**

BuildGuard combines blockchain oracles and AI to autonomously verify offsite manufacturing compliance. It uses hardware and software oracles to cryptographically transmit multi-modal production data to a hybrid blockchain-IPFS ledger. An expert-augmented LxM AI performs real-time compliance checks with human feedback, replacing manual reporting.

**Category:**

N ) Hardware - Software - Cybersecurity - Blockchain - Internet of things (IoT)

=====★★★★★=====

**Invention ID: HK - 85219**

**Inventor(s):**

Fei PAN, Qiang ZENG

**Invention Title:**

MedCenterDet: AI System for Accurate Lesion Detection in 3D Medical Images

**Invention Description:**

MedCenterDet is an anchor-free, center-based framework for 3D medical image object detection. It predicts lesion or anatomical centers, decodes anisotropic 3D object sizes from Gaussian heatmaps, uses counterfactual attention to suppress background noise, and refines bounding boxes for accurate clinical imaging workflows.

**Category:**

M ) Medical Technology - Medical Engineering - Medicine - Hygiene

=====★★★★★=====

**Invention ID: HK - 85220**

**Inventor(s):**

Xiaopeng TANG, Fangyu WANG

**Invention Title:**

FlexiBot: make every parking spot a charging spot

**Invention Description:**

FlexiBot is a mobile wireless charging robot project, aiming to solve the charging problems in the context of the widespread use of electric vehicles. It is particularly suitable for areas where there are few public charging stations or where it is difficult to install new ones.

**Category:**

A ) Mechanics - Engines - Machinery - Robotic - Tools - Industrial Process - Metallurgy

=====★★★★★=====

**Invention ID: HK - 85221**

**Inventor(s):**

Pui Yun Paulina WONG, Fangyu WANG, Xiaopeng TANG

**Invention Title:**

GeoAI Mosquito Risk Prediction Platform — Kill, Monitor, Identify & Forecast

**Invention Description:**

An IoT-powered smart trap that kills, monitors, and identifies mosquito species in real-time, using Multimodal signal fusion and GeoAI to forecast a 3-day Mosquito Risk Index for prevention control.

**Category:**

N ) Hardware - Software - Cybersecurity - Blockchain - Internet of things (IoT)

=====★★★★★=====

**Invention ID: HK - 85222**

**Inventor(s):**

Xian XU

**Invention Title:**

StorySketcher: A Multi-Agent AI System for Child-Led Co-Creative Storytelling

**Invention Description:**

A child-led multi-agent AI storytelling system that turns voice, sketches and blocks into safe animated narratives while preserving children's creative agency.

**Category:**

O ) Teaching Research - Pedagogical Items

**FUTURE  
TOGETHER**

**INNOVATING  
TODAY, SHAPING  
TOMORROW**

**CRAFTING A SMARTER  
TOMORROW—DRIVEN  
BY INNOVATION,  
DESIGNED WITH  
PURPOSE.**

**SVIIF**  
SALICIA VALLEY INTERNATIONAL INVENTION FESTIVAL

# Hong Kong SAR

## Hong Kong SAR

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**Invention ID: HK - 85223**

**Inventor(s):**

Furong Zhu

**Invention Title:**

Traceable Fruit Quality Detection Solution: Cloud-based big data for fruit quality monitoring and authentication

**Invention Description:**

Portable fruit quality analyser using patented visible-blind NIR photodetectors enables fast, non-destructive measurement of sugar and quality in fruits. Integrated with cloud-based data for smart, traceable fruit monitoring, supporting digital agriculture and authentication.

**Category:**

B ) Electronics - Electricity - Methods of Communication



**Invention ID: HK - 85224**

**Inventor(s):**

Ashok Iyaswamy

**Invention Title:**

Development of Fe65-Engineered Exosome-Corynoxine B Nasal Spray for Alzheimer's Disease Therapy

**Invention Description:**

This invention offers a non-invasive, potential therapeutic strategy for patients with Alzheimer's disease. Researchers have engineered exosomes loaded with Corynoxine-B to serve as carriers for the drug. It delivers the drug directly to the brain via the nasal cavity.

**Category:**

M ) Medical Technology - Medical Engineering - Medicine - Hygiene



**Invention ID: HK - 85225**

**Inventor(s):**

Pan Liao

**Invention Title:**

A method to produce an unusual monoterpene

**Invention Description:**

Our invention involves the biosynthesis of lavandulol using enzymes from *Lavandula angustifolia* expressed in *Nicotiana benthamiana*, which is used as a host to perform necessary post-translational modifications. It reconstructs the pathway for lavandulol in a heterologous system, enabling efficient production for industrial applications.

**Category:**

Q ) Paramedical - Health - Foodstuffs - Drinks - Cosmetics



**Invention ID: HK - 85226**

**Inventor(s):**

Yi Wang

**Invention Title:**

Multifunctional skin patches for promoting wound healing

**Invention Description:**

This study developed a self-powered bioelectronic hydrogel patch by integrating novel nanosheets into a bioactive polysaccharide hydrogel, enabling the coupled conversion of thermal and bioelectrical energy. This provides a multifunctional strategy for the regenerative treatment of diabetic infected wounds.

**Category:**

M ) Medical Technology - Medical Engineering - Medicine - Hygiene



**Invention ID: HK - 85227**

**Inventor(s):**

Lai Yin Qin

**Invention Title:**

AuraMist: Water Misting System for Enhancing Bathing Experience for Wheelchair Users

**Invention Description:**

AuraMist is a revolutionary, portable water misting system for wheelchair users. It offers customisable, water-conserving cleansing with adjustable intensity and voice control, promoting independence and comfort in various bathroom layouts.

**Category:**

Q ) Paramedical - Health - Foodstuffs - Drinks - Cosmetics



**Invention ID: HK - 85228**

**Inventor(s):**

Cham Fai Leung

**Invention Title:**

New nanofiber coating technology as a versatile platform for enhancing performance and sustainability of various products

**Invention Description:**

This is a new ultrasound-assisted nanofiber coating technologies for the enhancement of thermal stability, anti-corrosion, anti-scratch, anti-fungal and self-cleaning properties. It aims to develop thermally stable and anti-corrosion products such as road paints, reinforced concrete, electronic parts, solar cell panels, and crude oil absorbers.

**Category:**

C ) Building - Architecture - Civil Engineering - Construction - Materials - Woodwork



**Invention ID: HK - 85229**

**Inventor(s):**

Hongning Dai, Zhaoliang Chen, William K.W. Cheung, Byron Choi, Jiming Liu

**Invention Title:**

Towards Effective Temporal Anomaly Detection by Multi-Scale Hypergraph Transformer

**Invention Description:**

This project presents a novel MSHTrans method to time-series anomaly detection in utility companies. It achieves state-of-the-art performance with improvement 8.21% over conventional methods.

**Category:**

N ) Hardware - Software - Cybersecurity - Blockchain - Internet of things (IoT)

# Hong Kong SAR

## Hong Kong SAR

Independent Participants

**Invention ID: HK - 85230**

**Inventor(s):**

Yunhui Liu (CUHK and HKCLR), Dongwen Zhu (ATI), Chen Guo (SZU), Hanwen Cao (HKCLR), Shufeng Lin (ATI), Xiaojie Gao (HKCLR), Wei Chen (HKCLR) / Hong Kong Centre for Logistics Robotics Limited

**Invention Title:**

Intelligent Blueberry Harvesting Robot

**Invention Description:**

The Intelligent Blueberry Harvesting Robot is an AI-driven agricultural robot designed to automate the delicate and labor-intensive process of blueberry harvesting. Blueberries are small, fragile, and often grow in dense clusters, making manual picking slow, costly, and highly dependent on seasonal labor. This invention addresses these challenges by integrating advanced mobility, machine vision, robotic manipulation, and soft gripping technologies into one intelligent harvesting system. The robot uses a quadruped, robot-dog-based mobile platform, allowing it to move flexibly through farm environments, including uneven ground and narrow spaces between blueberry plants. Mounted on the platform are two robotic arms that can approach fruit from different angles and perform efficient picking operations. Through AI vision, the system detects mature blueberries and distinguishes them from unripe fruit, leaves, branches, and background objects. It then analyzes the optimal grasping pose for each target berry or cluster. To protect fruit quality, the robot is equipped with soft grippers that gently hold and detach blueberries without bruising or damaging them. The dual-arm design improves harvesting speed and operational flexibility, while the perception and motion planning system enables accurate, repeatable, and intelligent picking. This invention can help farms reduce dependence on seasonal manual labor, improve harvesting consistency, and support the transition toward smart and automated agriculture. By combining AI detection, mobile robotics, dual-arm manipulation, and soft harvesting technology, the Intelligent Blueberry Harvesting Robot provides a practical solution for high-value fruit production and represents a meaningful step toward the future of agricultural automation.

**Category:**

A ) Mechanics - Engines - Machinery - Robotic - Tools - Industrial Process - Metallurgy

**Invention ID: HK - 85231**

**Inventor(s):**

Hong Aurora Xiyao, Kong Zhao Yu, Tang Oi Lam, Wong Yi Lam / Kowloon True Light School (Hong Kong)

**Invention Title:**

Synergistic Efficacy of Dual EGFR /KRAS Inhibition in Adenocarcinoma Models

**Invention Description:**

To create a combination therapy for EGFR inhibition with KRAS- targeted inhibition produces synergistic anti-tumour effects in adenocarcinoma models, aiming to overcome feedback-driven resistance.

**Category:**

M ) Medical Technology - Medical Engineering - Medicine - Hygiene

**Invention ID: HK - 85232**

**Inventor(s):**

Chan Ting Sun, Li Lok Yee, Tang Oi Lam / TWGHs Mrs. Wu York Yu Memorial College (WYY), Carmel Pak U Secondary School (CPU), Kowloon True Light School (Hong Kong)

**Invention Title:**

PestiGuard

**Invention Description:**

PestiGuard is an innovative biosensor combining genetic circuits, a 3D-printed SmartBox, and a mobile app. It empowers consumers to detect pesticide residues, bridging lab testing and food safety.

**Category:**

H ) Agriculture - Forestry and Garden - Pet and Farm Animal Supplies

**Invention ID: HK - 85233**

**Inventor(s):**

Hefei University of Technology, Shengchao Zhen / Anhui University, Xiaoli Liu / Hefei University of Technology, Hao Sun / China Coal Mine Construction Group Co., Ltd., Xuejun Sun / Hefei Youibot Robotics Co., Ltd., Xu Bian / Hefei Zhongke Shengtu Technology Development Co., Ltd., Feng Chen / China Communications Information Technology Group Co., Ltd., Jianjun Liang

**Invention Title:**

Mobile Single / Dual-Arm Robot

**Invention Description:**

The Mobile Single-/Dual-Arm Robot is an advanced intelligent robotic platform developed by the Hefei University of Technology (HFUT). It integrates hierarchical dynamics modeling, safe cooperative control, and game-theoretic optimal decision-making to achieve precise, efficient, and safe operation in complex environments. Designed for intelligent human-robot collaboration, the system has broad application potential in smart manufacturing, intelligent services, healthcare, elderly care, and other advanced industrial and service sectors.

**Category:**

A ) Mechanics - Engines - Machinery - Robotic - Tools - Industrial Process - Metallurgy

**Invention ID: HK - 85234**

**Inventor(s):**

Weichai Power Co., Ltd. / Northeastern University

Decheng Wang, Lingjin Wang, Bin Pang, Zhao Jin, Zhijie Li, Guotao Hui, Huajie Wang

**Invention Title:**

High-Power, High-Reliability Diesel Generator Sets for Data Centers

**Invention Description:**

Based on the core requirements of data centers for high power output, high reliability, rapid startup, and fast response capability, the project establish an power assurance system:A rapid and stable large-space combustion technology was pioneered, together with the development of an annular stratified combustion system;An active anti-disturbance injection control technology was invented, along with a high-response resonant turbocharging air system; an innovative full-time-domain engine lubrication technology was adopted;A millisecond-level flywheel energy storage control technology with adaptive load fluctuation capability was applied;A primary-backup dual-redundant starter architecture was adopted.A full product lineup including the M33, M55, and M61 series has been developed.The products have been widely deployed by domestic and international high-end markets,delivering strong economic and social benefits.

**Category:**

A ) Mechanics - Engines - Machinery - Robotic - Tools - Industrial Process - Metallurgy

**Invention ID: HK - 85235**

**Inventor(s):**

Shanghai Qianqingyuan Biotechnology Co. Ltd. / HKSAR - Shanghai Qianqingyuan Biotechnology Co. Ltd.

**Invention Title:**

HGHI Endogenous Activation Theory

**Invention Description:**

By supplementing precursors such as "ghrelin-like substances", the pituitary gland's GHS-R receptors can be precisely activated, enabling the body to autonomously synthesize HGH.

**Category:**

M ) Medical Technology - Medical Engineering - Medicine - Hygiene

**Invention ID: HK - 85236**

**Inventor(s):**

Jessica Cao, Anjali Ajayaghosh, Chelsea Cao, Iha Kishore, Ananya Gulati, Anushka Dutta, Summer Elsharkawy / King Edward VI High School for Girls

**Invention Title:**

High-School Rocket Science Model

**Invention Description:**

This is a model rocket for transporting eggs to space and return undamaged. The rocket is designed with innovative fins and an auto-parachute, powered by a jet motor. Experiments are successful to 230m.

**Category:**

L ) Games - Sports - Hobbies



**Invention ID: HK - 85237**

**Inventor(s):**

Weigang Gu, Guomin Zhan, Wei Guo, Fujing Deng, Zhihuang Ruan / Nanjing Rtunit Information Technology Co.Ltd, South-east University, Shanghai Jiaotong University

**Invention Title:**

A New Real-Time Electric Motor Emulator for Fault Injection and Extreme Operating Condition Validation for Industry

**Invention Description:**

It proposes an open real-time motor emulator for testing motor drive systems. It is powerful and accurate to reproduce faults & extreme conditions so as to validate motors & save industrial costs.

**Category:**

N ) Hardware - Software - Cybersecurity - Blockchain - Internet of things (IoT)



**Invention ID: HK - 85238**

**Inventor(s):**

Lu Sun, Kun Tan, Wenping Cao, Hui Liu, Feifan Zhu, Zhishang Yan, Yuan Gao / HK SAR - Anhui University, Asunx Semi-conductors

**Invention Title:**

Intelligent Gate-Driver with MEA-BP Neural Network for Multi-Objective Optimization of SiC MOSFET Control Parameters

**Invention Description:**

It proposes a technology to operate SiC MOSFETs safely over their lifespan by an intelligent gate-driver with an MEA-BP neural network to optimize their control parameters, to improve their reliability.

**Category:**

B ) Electronics - Electricity - Methods of Communication



**Invention ID: HK - 85239**

**Inventor(s):**

Beijing HONGYI Railway Information Technology Co. Ltd, Zhang Xue Song, Wang Xiao Dong, Liu

**Invention Title:**

A stage planning generation method based on integer programming and multi-heuristic fusion for railway scheduling

**Invention Description:**

This invention relates to the field of intelligent railway transportation production organization and discloses a stage plan generation method based on integer programming and multi-heuristic fusion. It improves the efficiency of preparing stage plans for railway marshalling yards, replaces the traditional manual preparation mode, and shortens the plan generation cycle. It can also generate multiple alternative schemes with different optimization directions, enabling dispatchers to flexibly choose among objectives such as on-time performance assurance and resource utilization, adapting to diverse transportation production needs, effectively optimizing train departure order and in-station resource allocation, and improving the efficiency of mainline transport coordination.

**Category:**

J ) Traffic - Transport - Car Accessories



**Invention ID: HK - 85240**

**Inventor(s):**

Dr. Ben Zhang, Mr. Yong Yang, Prof. C.S. Cai, Ms. H.J. Liu, Dr. Y.B. Wang, Dr. F.S. Yang, Dr. X.R. Li, Prof. C.Q. Jiang / City University of Hong Kong (CityUHK)

**Invention Title:**

Smart Subsea Wireless Power Network for Autonomous Underwater Vehicles

**Invention Description:**

A contactless subsea power network enabling multiple AUVs to recharge autonomously, coordinate energy use, and extend mission endurance with >95% efficient wireless transfer.

**Category:**

B ) Electronics - Electricity - Methods of Communication

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# ICELAND

ICELANDIC  
INTELLECTUAL  
PROPERTY  
OFFICE

## ISIPO

Official IP office of  
Iceland

Reykjavik

### Icelandic Intellectual Property Office

Iceland's intellectual property landscape reflects the structure of a small, high income, and internationally connected economy. Patent activity at the national office is modest in absolute terms, yet resident origin filings worldwide show that Iceland's innovators frequently seek protection beyond the domestic market. This outward orientation aligns with the country's specialized export profile and knowledge intensive businesses. Recent WIPO data show resident patenting concentrated in medical technology, other special machines, measurement, pharmaceuticals, and IT methods for management. Iceland's innovation environment also benefits from strong digital adoption, a highly educated population, and an energy system centered on renewable resources such as geothermal and hydropower.

The Icelandic Intellectual Property Office supports protection, commercialization, and long term competitiveness through the effective administration of intellectual property rights.

PATENT  
APPLICATIONS

## 43

Total applications at  
the national office

2024



Capital

Reykjavik

GLOBAL RANK

## 108<sup>th</sup>

By total patent  
applications at the  
national office

2024



Patent

392.4K

PATENTS IN FORCE

## 9,501

Latest WIPO figure

2024



GDP Nominal

US\$38.58B

APPLICATIONS BY  
RESIDENTS WORLDWIDE

## 294

Resident origin patent  
applications filed  
worldwide

2024



WIPO Membership

Since 1986

Source: WIPO Statistical Country Profile for Iceland, updated 6/2026.  
WIPO IP Statistics Data Center; WIPO Country Profile for Iceland; World  
Bank Open Data, Population total 2025 and GDP current US\$ 2025.



# Iceland Iceland

Icelandic Inventors and Innovators Association (SFH/KVENN)

Email: elinoras@gmail.com

Phone: +35 48984661

Address: Sigtun 42, 105 Reykjavik, Iceland



**Invention ID: IS - 3501**

**Inventor(s):**

Fida Abu Libdeh

**Invention Title:**

GeoStep® Technology, a sustainable geothermal mineral recovery technology

**Invention Description:**

GeoStep® is a pioneering Icelandic clean technology that unlocks the potential of geothermal resources by recovering valuable natural minerals from geothermal water streams. Traditionally, mineral rich geothermal water has been viewed as a challenging byproduct of geothermal energy production. GeoStep® transforms this resource into high value natural ingredients through a sustainable extraction and processing method. The technology enables the recovery of high purity natural silica while supporting circular economy principles, reducing resource waste and creating new value from renewable geothermal energy systems. GeoStep® combines geothermal engineering, mineral science and sustainable innovation to create a new pathway for clean mineral production from geothermal resources.

**Category:**

P ) Energy - Renewable and green energy



**Invention ID: IS - 3502**

**Inventor(s):**

Olafur Jonsson

**Invention Title:**

Geothermal Energy system

**Invention Description:**

Method and a system to recover energy in two different power generation systems using the same energy source.

**Category:**

P ) Energy - Renewable and green energy



**Invention ID: IS - 3503**

**Inventor(s):**

Julie Encausse

**Invention Title:**

ICEBOREA Protective coating for products, made from seaweed residue

**Invention Description:**

Our creations Iceborea either completely eliminate the need for plastic or replace it with biodegradable alternatives that naturally break down and return to the earth, leaving no trace behind.

**Category:**

Q ) Paramedical - Health - Foodstuffs - Drinks - Cosmetics

**Invention ID: IS - 3504****Inventor(s):**

Valdimar Ossurason

**Invention Title:**

Valorka

**Invention Description:**

Unlike standard propeller-based turbines that require fast-moving water, Valorka developed an underwater turbine that modernizes the ancient waterwheel. It is designed to capture energy from coastal currents moving at speeds of less than 1 m/sec.

**Category:**

P ) Energy - Renewable and green energy

**Invention ID: IS - 3505****Inventor(s):**

Thorbjorg Jensdottir

**Invention Title:**

Hap+

**Invention Description:**

HAp+ is an Icelandic line of sugar-free, saliva-stimulating lozenges and lollipops, originally formulated to help cancer patients with dry mouth. Recommended by the Icelandic Dental Association, they use calcium to promote oral health without causing enamel erosion.

**Category:**

Q ) Paramedical - Health - Foodstuffs - Drinks - Cosmetics

**Invention ID: IS - 3506****Inventor(s):**

Sunna Olafsdottir Wallevik, Sigrun Nanna Karlsdottir, Kristjan Alexanderson

**Invention Title:**

Geroison and Alvit ehf

**Invention Description:**

Álvit ehf. and Gerosion are two highly innovative materials science companies in Reykjavik, Iceland. Álvit was actually spun off from Gerosion, and both focus on creating eco-friendly alternatives for heavy industries. Renewable-based binder is designed specifically for ramming paste and electrodes in aluminum smelters.

**Category:**

A ) Mechanics - Engines - Machinery - Robotic - Tools - Industrial Process - Metallurgy

**Invention ID: IS - 3507****Inventor(s):**

Gudmundur Fertram Sigurjonsson

**Invention Title:**

Kerecis

**Invention Description:**

Kerecis is a medical technology company, originating from Ísafjörður, Iceland, that manufactures patented, intact fish-skin products for soft tissue regeneration and wound healing. The Kerecis Omega3 Wound graft is FDA-cleared and used globally for diabetic foot ulcers, traumatic injuries, and burns.

**Category:**

M ) Medical Technology - Medical Engineering - Medicine - Hygiene

**Invention ID: IS - 3508****Inventor(s):**

Kristjan Bjorn Omarsson

**Invention Title:**

TCT

**Invention Description:**

TCT (Total Combustion Technology) is an advanced, patented fuel delivery system primarily designed for small off-road engines (like those in lawnmowers, generators, and trimmers).

**Category:**

A ) Mechanics - Engines - Machinery - Robotic - Tools - Industrial Process - Metallurgy

**Invention ID: IS - 3509****Inventor(s):**

Margret Juliana Sigurdardottir

**Invention Title:**

Mussila / Moombix

**Invention Description:**

Mussila is an award-winning music learning app that teaches children to read and play music through playful practice at an early age. It guides kids step by step through music theory, piano fundamentals, rhythm and ear training with game-based challenges that have been shown to help them learn significantly faster than traditional methods. Available in over 30 languages and used in classrooms and homes worldwide, Mussila offers children aged 5-10 a fun, gender-neutral and violence-free path into lifelong musical understanding. Moombix is an all-in-one online music education platform that connects adult learners with expert music teachers for live, interactive lessons. Built on a hybrid model that combines real-time one-to-one teaching with structured music courses and a practice-supporting learning platform, Moombix makes high-quality music study as accessible and flexible as a yoga or language class. Founded in Iceland in 2021 and now expanding internationally, Moombix treats music education as a lifestyle, offering a seamless marketplace where adults can pursue personal growth, creativity and professional skills with teachers from around the world.

**Category:**

O ) Teaching Research - Pedagogical Items

**Invention ID: IS - 3510****Inventor(s):**

Kari Stefansson

**Invention Title:**

deCode Genetecs

**Invention Description:**

Kári Stefánsson is an inventor or co-inventor on numerous patents and patent applications, principally involving:

- Human genetics and disease-associated genetic variants;
- Genetic diagnostics and risk prediction;
- Neurological proteins and disorders;
- Methods using population and genomic data to predict health outcomes.

For example, he was the sole named inventor on US Patent 5,532,351, concerning nucleic-acid sequences encoding oligodendrocyte-myelin glycoprotein, granted in 1996. He is also one of the inventors on the more recent international application WO 2022/104212, "Methods for decreasing mortality risk and improving health," assigned to Amgen.

**Category:**

M ) Medical Technology - Medical Engineering - Medicine - Hygiene



**Invention ID: IS - 3511**

**Inventor(s):**

Halla Jonsdottir

**Invention Title:**

*Use of Light for Guiding Aquatic Animals*

**Invention Description:**

The patent covers the use of underwater light technology to guide marine species, enabling trawls to operate higher above the seabed while maintaining efficient harvesting. This innovation helps reduce seabed impact, lower fuel consumption, and supports more sustainable fishing practices.

**Category:**

A ) Mechanics - Engines - Machinery - Robotic - Tools - Industrial Process - Metallurgy



**Invention ID: IS - 3512**

**Inventor(s):**

Halla Jonsdottir

**Invention Title:**

*Trawl Monitoring Device*

**Invention Description:**

The invention relates to an intelligent underwater information device that provides information and decision support for fishing operations. It is designed to improve operational efficiency while contributing to more sustainable fishing practices.

**Category:**

A ) Mechanics - Engines - Machinery - Robotic - Tools - Industrial Process - Metallurgy

# The Rise of Generative AI

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# INDIA

## Intellectual Property Profile

### Indian Patent Office



#### Indian Patent Office

Under the Office of the Controller General of Patents, Designs and Trade Marks

#### CGPDTM

Official patent administration for India



India's intellectual property ecosystem has expanded rapidly as domestic research capability, manufacturing depth, digital infrastructure and startup activity continue to grow. In 2024, patenting activity remained strong, with more than one hundred thousand patent applications filed at the national office and resident-origin applications worldwide also reaching a high level. The Indian Patent Office, operating under the Controller General of Patents, Designs and Trade Marks, supports a broad and increasingly diversified innovation base.

WIPO indicators show notable activity in computer technology, pharmaceuticals, digital communication, medical technology and basic materials chemistry, reflecting the country's strengths across knowledge-intensive services, life sciences and industrial development. India's large market, engineering talent and expanding research ecosystem have increased the strategic role of patents in commercialization, technology transfer and international competitiveness. The pattern of resident and non-resident filings also highlights India's growing integration into global innovation networks.



PATENT APPLICATIONS

105,157

Total applications at the national office • 2024



GLOBAL RANK

6<sup>th</sup>

Worldwide rank by total patent applications at the national office • 2024



PATENTS IN FORCE

228,402

Active patents in force by residents of India • 2024



APPLICATIONS BY RESIDENTS WORLDWIDE

76,473

Patent applications filed worldwide by residents of India • 2024



Capital

New Delhi



Population

1.46B



GDP (Nominal)

US\$3.96T



Patent Office

Indian Patent Office /CGPDTM



WIPO Member

Yes

Source: WIPO Statistical Country Profile: India (patent indicators, 2024; updated 6/2026); WIPO IP Statistics Data Center; World Bank Open Data (Population total, 2025; GDP current US\$, 2025).



# India

#### Yenilik Foundation

[www.ifiabharat.com](http://www.ifiabharat.com)

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Phone: +91 96111 28772

Address: IBAB, Biotech Park, GN Ramachandran Road, Electronics City Phase 1, Electronic City, Bengaluru, Karnataka 560100, India



#### Invention ID: IN - 9101

##### Inventor(s):

Muthukumaran G, Varun V, Aravind G, Udhayakumar K, Jiyavudeen T

##### Invention Title:

A System Capable of Automatically Reducing the Speed of the Automobile Within a Pre-Determined Controlled Speed Zone

##### Invention Description:

Useful for reducing the speed of the automobile automatically when the automobile is within a zone where the speed of the automobile need to be reduced /regulated. This invention is particularly useful to eliminate the drawbacks experienced in the use of speed breaks used reducing the speeds of the automobiles.

##### Category:

J ) Traffic - Transport - Car Accessories



#### Invention ID: IN - 9102

##### Inventor(s):

Varun V

##### Invention Title:

Safety System for Avoiding Fall of Wall Climbing Robot

##### Invention Description:

A safety system for avoiding fall of wall climbing robot is designed to operate when there is a failure such as pressure drop, surface detection, drop in charge level, inclination detection and including power failure and fluctuations.

##### Category:

A ) Mechanics - Engines - Machinery - Robotic - Tools - Industrial Process - Metallurgy



#### Invention ID: IN - 9103

##### Inventor(s):

Varun V

##### Invention Title:

Design of Manual Valve with Electrical Switch

##### Invention Description:

Method of converting the manual fluid valve to do combinational operation of controlling the fluid supply between open/close and controlling the electrical power supply between ON/OFF using an adaptor

##### Category:

A ) Mechanics - Engines - Machinery - Robotic - Tools - Industrial Process - Metallurgy

**Invention ID: IN - 9104****Inventor(s):**

Varun V

**Invention Title:**

Anti-Theft Device for Automobiles Using Brake

**Invention Description:**

Anti-theft Device for Automobiles using Brake is a device which utilizes existing hydraulic mechanism fitted onto path of hydraulic brake line to arrest brake using an ignition key

**Category:**

J ) Traffic - Transport - Car Accessories

**Invention ID: IN - 9105****Inventor(s):**

Ittira Ranjan Bopanna, Vinod Kumar S / Jagruth Tech Private Limited, Mysore, India

**Invention Title:**

Eco-Friendly Interlocking paving block production from Non-Recyclable / post-consumer single use plastic, having got M60 grade strength.

**Invention Description:**

Patented Jagruth Tech process turns non-recyclable single-use plastic into M60-grade eco-pavers and other products, cutting CO<sub>2</sub>, earning EPR and IPITEX recognition, and giving cities scalable, circular, carbon-negative construction solutions.

**Category:**

P ) Energy - Renewable and green energy

**Invention ID: IN - 9106****Inventor(s):**

Sahana Murali, Pranav Hosmaani, Ram Svar / Vidyashilp Academy

**Invention Title:**

Wellness Wiring

**Invention Description:**

IoT-based device that enables students to discreetly request emotional support with a single button press. It instantly alerts the school counsellor, promoting timely intervention, reducing stigma, and creating a safer, more supportive school environment.

**Category:**

N ) Hardware - Software - Cybersecurity - Blockchain - Internet of things (IoT)

**Invention ID: IN - 9107****Inventor(s):**

Dr. Eswarapa Pradeep Bulagonda / Sri Sathya Sai Institute of Higher Learning (SSSIHL)

**Invention Title:**

AMRx® - AI-Powered Culture-Free Clinical Decision Support System for Antimicrobial Resistance Management in Urinary Tract Infections (UTI)

**Invention Description:**

AMRx® is a culture-free, AI/ML-driven clinical decision support tool for rapid AMR diagnosis and antibiotic guidance in urinary tract infections. Clinically validated against 8,000 patients with an AUC of 0.96, it enables faster, evidence-based prescribing than conventional culture methods. Licensed to SCIINV Biosciences Pvt Ltd.

**Category:**

M ) Medical Technology - Medical Engineering - Medicine - Hygiene

**Invention ID: IN - 9108****Inventor(s):**

Mr. Nadavi Sridhar / SUBAM Innovations India Private Limited

**Invention Title:**

EEZY Blocks

**Invention Description:**

EEZY Blocks is a patented wall construction technology that converts processed pond ash into lightweight interlocking concrete blocks. The system enables faster, plaster-free, water-efficient, and sustainable construction while reducing labour, cost, carbon emissions, and industrial waste through a scalable manufacturing platform.

**Category:**

C ) Building - Architecture - Civil Engineering - Construction - Materials - Woodwork

**Invention ID: IN - 9109****Inventor(s):**

Shreshtha Jain / Sensicue Healthcare PVT LTD

**Invention Title:**

Point-of-Care Colorimetric Vitamin B12 Screening Device

**Invention Description:**

A portable, low-cost rapid urine test strip for evaluating Vitamin B12 levels using colorimetric detection. Designed for affordable and non-invasive point-of-care screening without requiring complex laboratory infrastructure.

**Category:**

M ) Medical Technology - Medical Engineering - Medicine - Hygiene

**Invention ID: Youth Innovation Olympiad / IN - 9110****Inventor(s):**

Aadya Kanchan / Vidyashilp Academy

**Invention Title:**

NIRI- A Device & System for Conservation of Water

**Invention Description:**

NIRI is a patented IoT-enabled smart water conservation system that reduces water wastage through real-time monitoring, leak detection & blockage, intelligent flow regulation and automated control. The system encourages behavioural change while saving water in homes, schools and institutions without compromising user convenience.

**Category:**

N ) Hardware - Software - Cybersecurity - Blockchain - Internet of things (IoT)

**Invention ID: Youth Innovation Olympiad / IN - 9111****Inventor(s):**

Sammit Basu, Kabeer Chopra, Avinash, Paavan Chhabra, Arnab Banerjee / Vidyashilp Academy

**Invention Title:**

NatureLens

**Invention Description:**

NatureLens connects students with nature by bringing live bird telecasts into classrooms. In an increasingly digital world, it inspires curiosity, patience, and environmental awareness as students observe birds in their natural habitat.

**Category:**

O ) Teaching Research - Pedagogical Items



# INDONESIA

Directorate General of Intellectual Property

## DGIP

Directorate General of  
Intellectual Property

Official intellectual property  
office of Indonesia

WIPO-recognized national IP office

Indonesia's **intellectual property (IP)** system supports a large and diversified economy with activity in manufacturing, food and consumer goods, chemicals, digital services, energy-related industries, health innovation, and creative sectors.

The Directorate **General of Intellectual Property (DGIP)** administers patents and other IP rights in Indonesia.

WIPO statistics place Indonesia among the more active patent offices in Southeast Asia. Patent activity at the national office is driven mainly by non-resident filings, while resident-origin filings have also been increasing. Intellectual property plays an important role in commercialization, technology upgrading, research-to-market transfer, and support for domestic innovation capacity and competitiveness.

### PATENT APPLICATIONS

## 10,902

2024

Total patent applications at the national office

### GLOBAL RANK

## 17<sup>th</sup>

2024

Rank by total patent applications at the national office

### PATENTS IN FORCE

Official data  
not available

Latest WIPO office-level  
figure unavailable

Patents in force at the national office

### APPLICATIONS BY RESIDENTS WORLDWIDE

## 2,164

2024

Patent applications filed worldwide by residents of Indonesia



Capital

Jakarta



Population

285.72M



GDP Nominal

US\$1.45T



Patent Office

DGIP



WIPO Membership

Member State

Source: WIPO Statistical Country Profile 2024, WIPO IP Statistics Data Center, WIPO PCT Applicant's Guide Indonesia; World Bank Open Data, Population total 2025 and GDP current US\$ 2025.

# Indonesia

PT. Nexus Global Niaga

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Kapuk, Cengkareng, Jakarta Barat, Indonesia



**Invention ID: ID - 621**

**Inventor(s):**

Aziz Qomarul Firdaus and Octaviana Galuh Pratiwi. MD.

**Invention Title:**

BPJS Super App: Shaping the Future by Reinventing Indonesia's Universal Healthcare System

**Invention Description:**

Reinventing universal healthcare through an integrated digital ecosystem combining smart financing, interoperable data and intelligent care to drive sustainability, trust and equitable access.

**Category:**

M ) Medical Technology - Medical Engineering - Medicine - Hygiene



# IRAN

## IPC

Intellectual  
Property  
Center of the  
**Islamic  
Republic of  
Iran**

NATIONAL  
INTELLECTUAL  
PROPERTY  
OFFICE



Intellectual Property Center of the Islamic Republic of Iran

Iran's intellectual-property activity is anchored by a large domestic filing base and an innovation ecosystem spanning manufacturing, health-related technologies, chemicals, ICT, and applied engineering. According to WIPO statistics, most patent applications received by the national office originate from residents, highlighting strong domestic engagement with formal protection. Recent technical-field data identify medical technology, specialized machinery, pharmaceuticals, engines and pumps, and computer technology among notable patenting areas. The Intellectual Property Center in Tehran administers the country's industrial property system, while Iran's participation in WIPO treaties and international filing mechanisms supports outward-looking protection pathways for inventors and firms. Although cross-border patenting remains smaller than domestic activity, resident-origin applications filed worldwide and use of the PCT reflect continued international participation. With a large population base and broad industrial capabilities, Iran has a substantial platform for invention, commercialization, and knowledge-based enterprise development, making intellectual property an important bridge between research, industry, and long-term competitiveness.



Source: WIPO Statistical Country Profile: Iran (reporting year 2024; updated 6/2026);  
WIPO IP Statistics Data Center; World Bank Open Data (Population 2025; GDP current US\$ 2025).

## Iran

The First Institute of Researchers and Inventors (FIRI)

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Address: U 13, No 4., Mirjahangiri Alley, Shariati St.,  
Tehran, Iran



**Invention ID: IR - 9801**

**Inventor(s):**

Dr. Aydin Ostovar, Dr. Davoud Beheshtizadeh, Mr. Shahin Helalinia

**Invention Title:**

NeuroTalent Dynamics™: Measuring Cognitive Growth to Predict Gifted Potential

**Invention Description:**

NeuroTalent Dynamics™ is an AI-assisted cognitive assessment system designed to identify gifted potential by measuring how a learner's thinking capacity develops over time, rather than relying only on static IQ or exam scores. The system uses short micro-cognitive tasks to track changes in reasoning speed, working memory, attention control, problem-solving strategy, error correction, and learning adaptability. These data are converted into a Cognitive Growth Velocity profile, allowing the platform to build a dynamic cognitive twin of each student, forecast emerging talent, and recommend personalized training pathways for gifted education and entrance-exam preparation.

**Category:**

N ) Hardware - Software - Cybersecurity - Blockchain - Internet of things (IoT)



**Invention ID: IR - 9802**

**Inventor(s):**

Mohammad Panji, Anahita Panji, Sahar Ramezani Roozbahani

**Invention Title:**

Self-Limiting Dental Etchant Composition with Moisture-Activated Neutralizing Polymer Matrix for Controlled Etching

**Invention Description:**

In the field of restorative and cosmetic dentistry, acid etching plays a pivotal role in preparing tooth surfaces for bonding restorative materials such as composites, veneers, crowns, and orthodontic brackets. Traditional etching agents, primarily composed of phosphoric acid gels, create microscopic roughness on enamel and dentin to enhance mechanical adhesion. However, the process demands precise timing to avoid under- or over-etching, which can compromise bond strength or lead to demineralization and tissue damage. The present invention introduces an innovative etchant formulation that addresses these challenges through a self-regulating mechanism, ensuring safe and effective surface preparation without reliance on operator vigilance.

**Category:**

M ) Medical Technology - Medical Engineering - Medicine - Hygiene



**Invention ID: IR - 9803**

**Inventor(s):**

Ali Abbasian, Arsham Abbasian

**Invention Title:**

Intelligent Climate Control System by Injecting Heated Fluid, Superheated Mist, and Polar Ions to the Atmosphere with Plasma-Electromagnetic Acceleration

**Invention Description:**

The present invention relates to the field of scalable smart climate control systems that, by injecting hot fluid, Superheated mist, and charged ions into the atmosphere, are capable of disrupting temperature inversions, managing and stimulating the precipitation process, preventing flooding, reducing the effects of drought and climate change, and by controlling fine dust particles, dust storms, limiting the environmental and health consequences caused by them, including respiratory and infectious diseases.

**Category:**

D ) Sanitation - Ventilation - Heating

**Invention ID: IR - 9804****Inventor(s):**

Amirhossein Akbarpour, Sarah Arzani, Mohadeseh Akbarpour, Mobina Ghasemi, MohammadSaleh Bahadori

**Invention Title:**

*pH-Responsive Dental Liner Composition for In-Situ Detection of Marginal Microleakage*

**Invention Description:**

*A smart light-curable dental liner incorporating a pH-sensitive fluorescent system to detect acidic changes beneath restorations. This acidity is typically associated with microleakage and the early development*

**Category:**

*M ) Medical Technology - Medical Engineering - Medicine - Hygiene*

**Invention ID: IR - 9805****Inventor(s):**

Alemeh Salehbaladehi, Yona Tavakoli, Arshavir Dehbandi, Meysam Norigoljah, Ariyan Norigoljah, Seyedhamid Latifirostami

**Invention Title:**

*Structural Seismic Damper with an Elastomeric Core and a Telescopic Force Transfer Mechanism*

**Invention Description:**

*A novel hybrid ring-telescopic structural seismic damper featuring a high-damping elastomeric core that efficiently dissipates seismic and dynamic energy through an innovative telescopic force-transfer mechanism. The invention enhances structural safety, reduces earthquake-induced damage, and improves energy absorption while maintaining a compact and practical design. It is suitable for buildings, bridges, bracing systems, and other structures exposed to seismic and dynamic loading.*

**Category:**

*C ) Building - Architecture - Civil Engineering - Construction - Materials - Woodwork*

**Invention ID: IR - 9806****Inventor(s):**

LiliRose Tazari

**Invention Title:**

*Modular Medical Wearable Belt for Non-Invasive Monitoring of Uterine Contractions, Fetal Movements, and Fetal Heart Rate*

**Invention Description:**

*A modular non-invasive prenatal monitoring belt that synchronously tracks uterine contractions, fetal movements, and fetal heart rate through independent sensor cartridges, IMU-assisted noise reduction, and wireless data transfer, enabling reliable real-time assessment for home care, clinical follow-up, high-risk cases, and telemedicine.*

**Category:**

*M ) Medical Technology - Medical Engineering - Medicine - Hygiene*

**Invention ID: IR - 9807****Inventor(s):**

Tohid Ghasemnejad

**Invention Title:**

*An AI Literature-Mining System for Evidence-Based Extension of the Human Phenotype Ontology*

**Invention Description:**

*AI system mining biomedical literature to propose evidence-backed gene/disease to phenotype associations, deciding whether each finding extends an existing term or defines a new one.*

**Category:**

*M ) Medical Technology - Medical Engineering - Medicine - Hygiene*

**Invention ID: IR - 9808****Inventor(s):**

Mojgan Abed

**Invention Title:**

*Advanced Multi-Modal Platform for Cervical Imaging Image Processing, and Therapy for Cervical Lesions and Vaginal Infections*

**Invention Description:**

*Non-invasive imaging and phototherapy for cervical precancer. Treats vaginal infections and promotes tissue repair. Records and processes images to monitor treatment.*

**Category:**

*M ) Medical Technology - Medical Engineering - Medicine - Hygiene*

**Invention ID: IR - 9809****Inventor(s):**

Milad Ziaeiian, Gohar Rahmani, Sajjad Shabani

**Invention Title:**

*ASCRS(Advanced Smart Carbon Recovery System)*

**Invention Description:**

*An integrated system that captures industrial waste heat and CO2C to optimize aeroponic greenhouse environments, significantly boosting crop yields while reducing resource use.*

**Category:**

*P ) Energy - Renewable and green energy*

**Invention ID: IR - 9810****Inventor(s):**

Mohammad Masiha Sekhavat, Faraidon Farzad, Zahra Naghi Zadehdehno, Radmehr Hakamirad, Mohammadreza Shahkhah, Mahmoodreza Movahedin

**Invention Title:**

*AI-Driven Digital Twin Platform for Scar-Free Precision Wound Regeneration*

**Invention Description:**

*Conventional wound care lacks real time, quantitative assessment of tissue physiology, delaying intervention and reducing healing predictability. Our AI driven Digital Twin integrates multimodal imaging, tissue modeling, and precision regenerative therapy to deliver predictive, personalized regeneration beyond simple wound closure.*

**Category:**

*M ) Medical Technology - Medical Engineering - Medicine - Hygiene*

**Invention ID: IR - 9811****Inventor(s):**

Morteza Hassandoust

**Invention Title:**

*Outcome-Verified Adaptive Trust Consensus Engine for Infrastructure-Degraded Emergency Networks*

**Invention Description:**

*A novel AI-driven emergency response architecture that continuously learns from verified operational outcomes. It enables adaptive trust, resilient distributed consensus, and reliable coordination.*

**Category:**

*N ) Hardware - Software - Cybersecurity - Blockchain - Internet of things (IoT)*

**Invention ID: IR - 9812****Inventor(s):**

Bijan Khaghanirad, Sevin Alimoradi Pilehrood, Fatemeh Saberi, Zahra Mohammad Hosseini, Janadokht Ghajeh / Neuris

**Invention Title:**

Deep Learning Framework for Automated Brain Tumor Detection

**Invention Description:**

AI diagnostic assistant for brain tumors: a 3D U-Net analyzes CT volumes to segment tumors and generate explainable heatmaps, scores, and reports. Trained on ~260k annotated scans, it achieves ~95% accuracy and 3-5s per scan, integrates with PACS, and supports privacy-preserving federated updates.

**Category:**

M ) Medical Technology - Medical Engineering - Medicine - Hygiene

**Invention ID: IR - 9813****Inventor(s):**

Fatemeh Emami Moghaddam, Elsa Mohseni

**Invention Title:**

Smart Surgical Table with AI and Blockchain-Based Detection of Surgical Instruments

**Invention Description:**

An AI-powered surgical table identifies and tracks instruments by type, weight, and position, ensuring none are left inside the patient post-surgery. It logs all surgical data on a blockchain for secure, transparent, and traceable records. Designed to boost safety and reduce errors, it also reconstructs procedures for training and alerts staff in real time.

**Category:**

M ) Medical Technology - Medical Engineering - Medicine - Hygiene

**Invention ID: IR - 9814****Inventor(s):**

Mehdi Jamoor, Fariba Bakhtiari

**Invention Title:**

AI-Based Intelligent System for Monitoring, Analyzing, and Detecting Fire Hose Abnormal Conditions

**Invention Description:**

Firefighting operational environments are among the most complex and hazardous working conditions, where hose-related disruptions such as entanglement, kinking and restricted movement can significantly affect firefighters' performance and the efficiency of fire suppression operations. This invention presents an AI-based intelligent system that utilizes distributed sensor nodes and intelligent analysis of operational data to enable continuous monitoring, identification of abnormal fire hose conditions and detection of fire hose abnormal conditions. By analyzing the real-time condition of the fire hose, the proposed system enhances firefighters' situational awareness, reduces operational risks and supports more effective decision-making in critical situations. The proposed approach represents a significant step toward the development of next-generation intelligent systems for firefighting, emergency response and disaster management.

**Category:**

N ) Hardware - Software - Cybersecurity - Blockchain - Internet of things (IoT)

**Invention ID: IR - 9815****Inventor(s):**

Saeid Abazari, Faranaksadat Mirsobhani Langrudi

**Invention Title:**

Modular Power Generation System from Non-Recyclable Waste Using Controlled Combustion, Indirect Heat Transfer, a Stirling Engine Array, and an Integrated Environmental Pollution Control and Management System

**Invention Description:**

TerraVolt WTE is a modular underground waste-to-energy system that converts non-recyclable waste into electricity using controlled combustion, indirect heat transfer, and Stirling engines. The system integrates energy recovery, leachate management, and emission control to improve efficiency while minimizing environmental impact. Its scalable modular design enhances equipment durability and enables reliable deployment in urban and industrial applications.

**Category:**

P ) Energy - Renewable and green energy

**Invention ID: IR - 9816****Inventor(s):**

Saeid Abazari, Farnaz Khosravi

**Invention Title:**

Hot-air generation device equipped with multiple circulation pumps and a vacuum water tank

**Invention Description:**

A smart, energy-efficient portable hot-air generator integrating a vacuum-insulated water tank, dual induction heaters, circulation pumps, PID control and UV air purification.

**Category:**

D ) Sanitation - Ventilation - Heating

**Invention ID: IR - 9817****Inventor(s):**

Saeid Abazari, Ali Abdolahi, Sepehr Karachi

**Invention Title:**

A device and method for burning non-recyclable waste and simultaneously producing electricity and hydrogen, without causing environmental pollution

**Invention Description:**

An integrated hybrid power plant that converts non-recyclable waste into electricity and high-purity hydrogen through controlled combustion, steam generation, and electrolysis. To ensure that no environmental pollution is created, the ash and remaining carbon after combustion are transferred to the stabilization section, where heavy metals are separated and the stabilized carbon is prepared for industrial uses such as concrete additive.

**Category:**

P ) Energy - Renewable and green energy

**Invention ID: IR - 9818****Inventor(s):**

Saeid Abazari, Nahid Najafi, Mohammadreza Esghaei

**Invention Title:**

Energy Generation Device from Long and Short Water Waves

**Invention Description:**

An adaptive modular wave-energy generation system designed to capture surface oscillations from short, medium, and long water waves and convert them through a sealed piston, rack-and-pinion, and one-way flywheel mechanism into stabilized rotational energy for clean electrical power generation in marine environments.

**Category:**

P ) Energy - Renewable and green energy

**Invention ID: IR - 9819****Inventor(s):**

Mehdi Lashgari, Amir Lashgari, Can Acar, Anahita Sepandrand, Abtin Rafiei

**Invention Title:**

Movement-Based Play Therapy and the Patient's Movement Correction Side System in Physiotherapy

**Invention Description:**

An app to help elderly and young patients. With the help of this app, you can encourage the patient to move around their room.

**Category:**

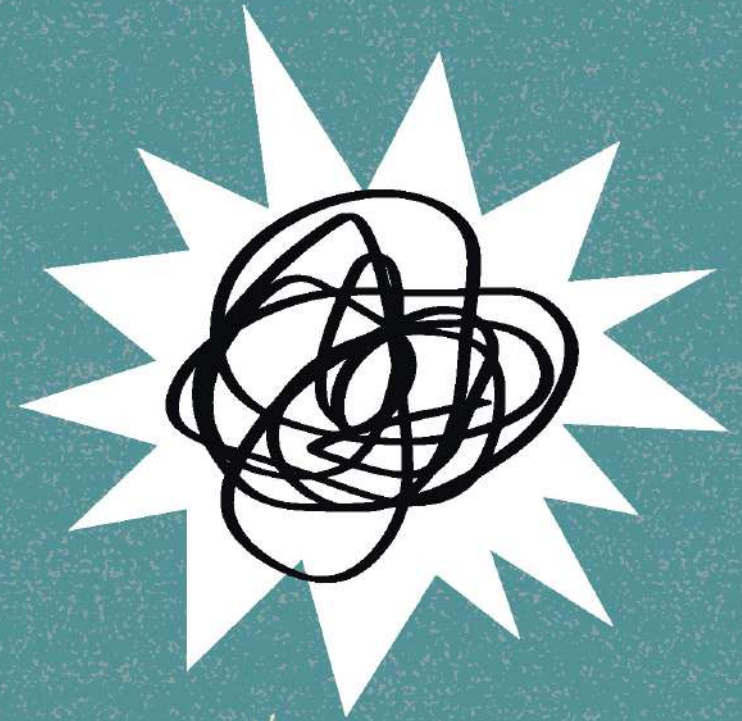
M ) Medical Technology - Medical Engineering - Medicine - Hygiene



# World Intellectual Property Day

April 26, 2017

KEEP IT SIMPLE





# IRAQ

Republic of Iraq

## Directorate of Patents and Industrial Models

Central Organization for Standardization and Quality Control (COSQC)

### COSQC

Directorate of  
Patents and  
Industrial Models

Central Organization for  
Standardization and Quality  
Control

Iraq's industrial property authority  
for patents and industrial models

Iraq's patent landscape remains modest in global comparison, yet current WIPO statistics indicate a system in which resident participation is central. In 2024 the Iraqi national office recorded 638 patent applications, including 556 resident filings and 82 non resident filings. Resident-origin patent applications filed worldwide totaled 569, showing that most Iraqi patenting activity remains concentrated in the domestic system.

WIPO data also identify biotechnology, pharmaceuticals, and transport among the leading technical fields for Iraqi resident patenting. These patterns suggest inventive activity linked to healthcare, applied engineering, and practical industrial needs. As Iraq pursues reconstruction, industrial modernization, and broader economic diversification, intellectual property institutions can play an important role in supporting technology transfer, commercialization, and the protection of locally developed solutions. Strengthening examination capacity, awareness of IP rights, and innovation support mechanisms will be important for translating inventive effort into wider economic value.



PATENT  
APPLICATIONS

638

National office total  
Iraq



GLOBAL RANK

61<sup>st</sup>

By total patent applications  
at the national office



PATENTS IN FORCE

5,141

Active patents  
Iraq



APPLICATIONS BY  
RESIDENTS WORLDWIDE

569

Resident-origin patent  
applications filed worldwide



Capital

Baghdad



Population

47.0M



Population year

2025



GDP (Nominal)

US\$279.6B



WIPO Member

Member State

Source: WIPO IP Statistics Data Center; WIPO Statistical Country Profile 2024; Ministry of Planning, Central Organization for Standardization and Quality Control; World Bank Open Data, Population total 2025; World Bank Open Data, GDP current US\$ 2024.



# Iraq

Iraqi Society of Inventors and Innovators (IIIS)

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Address: Tunis Quarter, Alley 326, Street :47, Home: 32, Baghdad, Iraq

**Invention ID: IQ - 96401**

**Inventor(s):**

Ohood Alrefaii

**Invention Title:**

Use of *Klebsiella pneumoniae* antigens as immunostimulants against *Entamoeba histolytica* infection

**Invention Description:**

This patented study investigated the immunological potential of two antigenic components derived from *Klebsiella pneumoniae*: Outer Membrane Proteins (OMPs; O-antigen-associated proteins) and Capsular Polysaccharide (K-antigen). These bacterial antigens were evaluated as immunomodulatory candidates for the development of two experimental vaccine formulations against *Entamoeba histolytica* infection.

**Category:**

M ) Medical Technology - Medical Engineering - Medicine - Hygiene

**Invention ID: IQ - 96402**

**Inventor(s):**

Qassim Al-Mashhadani

**Invention Title:**

A method for treating psoriasis and eczema using a plant extract

**Invention Description:**

We prepared a plant extract containing a type of glycoside that inhibits skin cell division. The preparation was tested and found to be free of toxins. It was also tested on laboratory animals and administered to patients in Iraqi government hospitals. Patent number 3056 was obtained for this purpose.

**Category:**

M ) Medical Technology - Medical Engineering - Medicine - Hygiene

**Invention ID: IQ - 96403**

**Inventor(s):**

Prof. Dr. Abdulsada A. Rahi, Assist. Prof. Dr. Magda A. Ali, Dr. Zaid Al-Ghnaimawi

**Invention Title:**

Production of Nanoliposomal amphotericin B 0.4 % topical gel as effective treatment for human Acne Vulgaris

**Invention Description:**

Acne (also known as Acne Vulgaris) is a persistent chronic skin inflammatory condition of the pilosebaceous follicles that affects people all over the world. Acne is projected to affect 9.4 % of the global population, ranking it eighth among skin diseases. Acne affects more than 85 % of teenagers, and the disease can persist into adulthood which often occurs in females and accounts for two-thirds of dermatologist consultations for acne.

**Category:**

M ) Medical Technology - Medical Engineering - Medicine - Hygiene

**Invention ID: IQ - 96404****Inventor(s):**

Jalal Hasan Mohammed Ali

**Invention Title:**

Novel Thiol Derivatives with Anticancer Activity

**Invention Description:**

This invention introduces novel thiol derivatives synthesized as potential anticancer agents. The compounds exhibit promising biological activity against cancer cells and represent a new chemical scaffold with potential pharmaceutical applications. The invention provides an innovative approach for developing future anticancer therapeutics.

**Category:**

M ) Medical Technology - Medical Engineering - Medicine - Hygiene

**Invention ID: IQ - 96405****Inventor(s):**

Adnan Al-Mudhafar

**Invention Title:**

Feathers Conserving to Protein Hydrolysis to be used for Broiler Chicken Nutrition

**Invention Description:**

The aim of the current research is to convert the remains of slaughterhouses and poultry processing plants (feathers), which is one of the sources of environmental pollution and useless, into products of nutritional value that can be used in poultry diets. The method of using the (physical - enzymatic) method to analyze proteins from indigestible feathers into proteins that poultry benefit from in the growth and production processes.

**Category:**

H ) Agriculture - Forestry and Garden - Pet and Farm Animal Supplies

**Invention ID: IQ - 96406****Inventor(s):**

Ahmed Nadeem Al-Maleky

**Invention Title:**

The Penile Support: A New Method in the Treatment of Impotence

**Invention Description:**

The Penile Support is a new medical instrument used for treatment of erectile dysfunction (importance) easily manufactured with low price without side effects and some clear informations giving to the patient about the maneuver of its work..It's need cooperation of the sexual partner to facilitate the relationship.

**Category:**

M ) Medical Technology - Medical Engineering - Medicine - Hygiene

**Invention ID: IQ - 96407****Inventor(s):**

Waleed Ahmed Majeed

**Invention Title:**

Fixed and safe needle cover of medical injection

**Invention Description:**

The fixed needle is designed to protect the users from injury while returning the needle cover.

**Category:**

M ) Medical Technology - Medical Engineering - Medicine - Hygiene

**Invention ID: IQ - 96408****Inventor(s):**

Baida M. Ahmed

**Invention Title:**

Effect of microwave plasma voltage on improving corrosion resistance and water-hydrophilic properties of hydroxyapatite-coated zinc surface

**Invention Description:**

This study presents an advanced approach to biointerface engineering by enhancing the surface properties of zinc via microwave plasma before the deposition of a hydroxyapatite (HA) coating.

**Category:**

M ) Medical Technology - Medical Engineering - Medicine - Hygiene

**Invention ID: IQ - 96409****Inventor(s):**

Sabah Fattah Mubarak

**Invention Title:**

A device for strengthening the muscles surrounding the ligment of the spinous processes of the lumbar vertebrae

**Invention Description:**

Device for strengthening the muscles surrounding the ligament of the spinous processes of the lumbar vertebrae. This device is used to treat lumbar disc herniation by strengthening the muscles surrounding these ligaments, increasing their flexibility, and gently pulling the herniated vertebrae back into their normal position.

**Category:**

M ) Medical Technology - Medical Engineering - Medicine - Hygiene

**Invention ID: IQ - 96410****Inventor(s):**

Ahmed Ali Moshref, Mohsen Wahyouth Yaseen, Abdulmahdi Zain Al-Abidin Khalaf

**Invention Title:**

Protective Clothing for Personnel Working in Radiation Environments

**Invention Description:**

Innovative protective clothing designed to safeguard personnel working in radiation environments by providing a lightweight and flexible protective barrier that reduces exposure to ionizing radiation while ensuring comfort and freedom of movement, making it suitable for medical and industrial applications.

**Category:**

M ) Medical Technology - Medical Engineering - Medicine - Hygiene

**Invention ID: IQ - 96411****Inventor(s):**

Prof. Dr. Baha Al-Musawi , Assist Prof. Dr. Noor Al-Musawi

**Invention Title:**

Device for Measuring Flexibility of Body Joints

**Invention Description:**

The world is witnessing a wide and tangible development in all different fields of life such as anatomy, physiology and Human physiology specially that is related with sport field. Whereas the sport achievement never came easily, but as a result of scientific efforts based on accurate objective grounds represented by researches and scientific studies of the human body parts to solve all the problems that are facing the trainers and keeping up with current scientific development and reach to accurate results and stay away of the traditional methods. Currently, Flexibility measured by the angle between two joints ,but it is not expressing the real range of that.

**Category:**

Q ) Paramedical - Health - Foodstuffs - Drinks - Cosmetics



**Invention ID: IQ - 96412**

**Inventor(s):**

Eng. Adam Abdulrahman Ramadan

**Invention Title:**

Diabetic Foot Guardian (DFG). AI-Based Non-Invasive Early Diabetic Foot Risk Assessment System

**Invention Description:**

Developed by Eng. Adam Abdulrahman Ramadan from Middle Technical University - Baqubah Technical College, Iraq, Diabetic Foot Guardian is an AI-assisted, non-invasive system that evaluates early diabetic foot risk using multimodal physical sensing and intelligent analysis.

**Category:**

M ) Medical Technology - Medical Engineering - Medicine - Hygiene



**Invention ID: IQ - 96413**

**Inventor(s):**

Muthanna Kadhim Salman, Amad Salman Abdulrasool Kobba

**Invention Title:**

Correction of the rectangular pedicle bone of the foot

**Invention Description:**

In cases of lateral displacement of the oblongata of the foot, it can be reduced without surgical intervention.

**Category:**

M ) Medical Technology - Medical Engineering - Medicine - Hygiene



**Invention ID: IQ - 96414**

**Inventor(s):**

Muthanna Kadhim Salman

**Invention Title:**

Sculpting of a Frozen Shoulder Joint

**Invention Description:**

There is a specific condition of shoulder stiffness that may be chemical in origin or physical, caused by an external factor, which can be treated with external massage using a sculpting technique, according to research.

**Category:**

M ) Medical Technology - Medical Engineering - Medicine - Hygiene



**Invention ID: IQ - 96415**

**Inventor(s):**

Dr. Alaa Ahmed

**Invention Title:**

A Novel Pitot-Static Tube Design for Aircrafts

**Invention Description:**

This design is more durable and less liable for malfunctioning than the already-used designs; hence, achieving safer flights. It can correct some malfunctions found in the already-installed devices which have led to many fatal aviation accidents (e.g., "The Air France Flight 447 accident. The Titanic of the skies"). A 3-D model.

**Category:**

J ) Traffic - Transport - Car Accessories



**Invention ID: IQ - 96416**

**Inventor(s):**

Dr. Alaa Ahmed

**Invention Title:**

Ultra Hypo-Allergic Medical Adhesive Plaster Tape

**Invention Description:**

This cheaper plaster is made from medically safe and officially FDA approved materials.

**Category:**

M ) Medical Technology - Medical Engineering - Medicine - Hygiene

90

SVIIF-2026



**Invention ID: IQ - 96417**

**Inventor(s):**

Dr. Alaa Ahmed

**Invention Title:**

An Electronic Bodyguard

**Invention Description:**

An easily-carried device that can be used by the police, military personnel, or civilians for more personal security, for apprehending and capturing criminals more easily, and for more effective escaping from attackers.

**Category:**

E ) Security - Rescue - Alarm



**Invention ID: IQ - 96418**

**Inventor(s):**

Dr. Alaa Ahmed

**Invention Title:**

A Novel Design for A Human Artificial Heart

**Invention Description:**

Corrects some defects found in already-used hearts. It has a maximized performance allowing it to be used in wider patient population: A- Higher efficiency with less power consumption. B- Enhanced mechanical durability (facilitating its long-term implantation). It needs further collaboration.

**Category:**

M ) Medical Technology - Medical Engineering - Medicine - Hygiene



**Invention ID: IQ - 96419**

**Inventor(s):**

Dr. Alaa Ahmed

**Invention Title:**

Bomb Defusing Technique with Maximum Human Safety

**Invention Description:**

A new technique used by the bomb techs and bomb squad units during defusing time bombs and other detonators, achieving better shelter and utmost safety.

**Category:**

E ) Security - Rescue - Alarm



**Invention ID: IQ - 96420**

**Inventor(s):**

Dr. Alaa Ahmed

**Invention Title:**

The Pilots' Guardian Angel

**Invention Description:**

A device that can reduce the Pilots' Tension during flight emergencies, achieving safer flights.

**Category:**

J ) Traffic - Transport - Car Accessories



**Invention ID: IQ - 96421**

**Inventor(s):**

Dr. Husam Ali Hadi

**Invention Title:**

IFSF-2035: Intelligent Fuel Security Framework for Electric Power Systems

**Invention Description:**

An AI-driven framework that evaluates fuel security risks, predicts fuel shortages, optimizes fuel allocation, and supports resilient operation of electric power systems through intelligent decision-making, risk assessment, and strategic fuel management to enhance energy security and grid reliability.

**Category:**

P ) Energy - Renewable and green energy

91

SVIIF-2026



**Invention ID: IQ - 96422**

**Inventor(s):**

Falah Hasan Salman

**Invention Title:**

Recycling of construction waste and investment in cladding materials

**Invention Description:**

Modern methods in the management and organization of the work of the treatment of the ruins of buildings. Reduce the use of natural resources. Reduce the cost of producing and transporting these raw materials. Reducing materials that are converted to landfills.

**Category:**

C ) Building - Architecture - Civil Engineering - Construction - Materials - Woodwork



**Invention ID: IQ - 96423**

**Inventor(s):**

Yildirim Salahaldin Hussein Hussein

**Invention Title:**

Yildo Ai V1.0 : Privacy-Preserving Local Large Language Model Platform

**Invention Description:**

YILDO AI is a fully local artificial intelligence platform integrating multiple large language models into a secure desktop environment. It supports multilingual interaction, offline document assistance, AI writing, and intelligent local processing without transmitting user data to external cloud services.

**Category:**

N ) Hardware - Software - Cybersecurity - Blockchain - Internet of things (IoT)



**Invention ID: IQ - 96424**

**Inventor(s):**

Yildirim Salahaldin Hussein Hussein

**Invention Title:**

Search Ai: Intelligent Retrieval System for Unstructured Digital Archives

**Invention Description:**

Search AI is an intelligent desktop system that retrieves information from unstructured digital archives using OCR, natural language processing, and semantic search. It accurately searches PDFs, Word documents, scanned files, and images while preserving privacy through fully local processing without cloud services.

**Category:**

N ) Hardware - Software - Cybersecurity - Blockchain - Internet of things (IoT)



**Invention ID: IQ - 96425**

**Inventor(s):**

Yildirim Salahaldin Hussein Hussein

**Invention Title:**

YILDO-LLM-100M:

Iraq's First Large Language Model Developed from Scratch

**Invention Description:**

YILDO-LLM-100M is Iraq's first large language model developed entirely from scratch using a custom tokenizer, independently trained neural weights, and a complete training pipeline. The model was built without fine-tuning existing LLMs, establishing a national foundation model for future multilingual AI research and applications.

**Category:**

N ) Hardware - Software - Cybersecurity - Blockchain - Internet of things (IoT)

Iraq  
Iraq

**Scientific Institute of Talents (SIT)**

Website: [www.pamconf.com](http://www.pamconf.com)

Email: [eduglobal@pamconf.com](mailto:eduglobal@pamconf.com)

Address: Orthodox Cultural Center, Karada, Baghdad, Iraq



**Invention ID: IQ - 96426**

**Inventor(s):**

Iman S. Kareem, Tarik.T.Issa, Anmar K. Ibrahim, Soheir Salim Zein and Myasar Al-Ogaidi, Sarah Safaa Hussien, Yaseen-MazinYaseen.

**Invention Title:**

Design and Construction of an Expert Drone's Traffic Control System

**Invention Description:**

An adequate traffic control system is absolutely indispensable to minimize accidents and ensure safe and speedy flow of traffic on the roads in any modern, crowded city. Such a system must include efficient techniques that are capable of prioritizing emergency vehicles, such as ambulances and fire brigades, in overcrowded crossroads.

**Category:**

J ) Traffic - Transport - Car Accessories



**Invention ID: IQ - 96427**

**Inventor(s):**

Tarik T.Issa, Safanah Albayati, Zainab Saad, Jumana Al-Dilemy, Ahmed Waad

**Invention Title:**

The Effect of Cinnamon (Cinnamomum verum) in the Treatment of Diabetes:An Experimental Study on Its Therapeutic Effects

**Invention Description:**

This experimental study investigates the therapeutic effects of Cinnamon (Cinnamomum verum) in managing Type 2 diabetes mellitus (T2DM), a significant global health concern. The research highlights cinnamon's potential due to its insulin-mimetic, antioxidant, anti-inflammatory, and anti-hyperglycemic properties.

**Category:**

M ) Medical Technology - Medical Engineering - Medicine - Hygiene



**Invention ID: IQ - 96428**

**Inventor(s):**

Tarik T.Issa, Safanah Albayati, Masarrah Abdalkhalik, Fatima Al-Abadi, Reka T. Al - Omran

**Invention Title:**

The Potential of Anisum Extract in Managing Osteonecrosis: A Comprehensive Review

**Invention Description:**

This comprehensive review explores the therapeutic potential of Anisum extract in the management of osteonecrosis, a severe bone disorder characterized by bone cell death and joint collapse due to disrupted blood flow.

**Category:**

M ) Medical Technology - Medical Engineering - Medicine - Hygiene



**Invention ID: IQ - 96429**

**Inventor(s):**

Mustafa Wadhah, Teeba Ali, Rahma Ahmed

**Invention Title:**

Step Mind

**Invention Description:**

Step Mind is a Unlimited Ai, local app acting as a "calculator for the brain". It expands cognitive boundaries by eliminating mental fatigue and boosting creativity.Processing securely on-device, it provides unlimited cognitive support without internet dependence.

**Category:**

N ) Hardware - Software - Cybersecurity - Blockchain - Internet of things (IoT)



**Invention ID: IQ - 96430**

**Inventor(s):**

Haider Ibrahim Khalil, Dr.Tarik T. Issa

**Invention Title:**

The Effect of Web Coding in Modern Problem Solving: An Analytical Study on Its Practical Benefits

**Invention Description:**

This analytical study investigates the practical benefits of Web Coding in developing modern digital solutions, a significant driver in today's global technological landscape. The research highlights web coding's potential due to its scalability, user-accessibility.

**Category:**

N ) Hardware - Software - Cybersecurity - Blockchain - Internet of things (IoT)



**Invention ID: IQ - 96431**

**Inventor(s):**

Tarik T. Issa, Abdul Salam Tawfeeq Dawood, Fatin Emad Naoum, Ghenwa Gassan Joseph, Rania Hussien Ali, Rania Duraid Nadhir, Sarah Monieer Radam, Mariam Wissam Farooq

**Invention Title:**

Thermal and mechanical behavior of used food backing paper - Epoxy recycling materials

**Invention Description:**

Used food paper in strips shape were mixed in a different weight percentage 1,2,3,4 respectively with epoxy resin .Discs of 10 cm diameter and 0.8 cm thickness were prepared in a hard shape.

**Category:**

P ) Energy - Renewable and green energy



**Invention ID: IQ - 96432**

**Inventor(s):**

Tarik T.Issa, Safanah Albayati, Sarah Al-Behadili, Ruqayah Alsadaani, Maryam Manafova, Furgan Manafov

**Invention Title:**

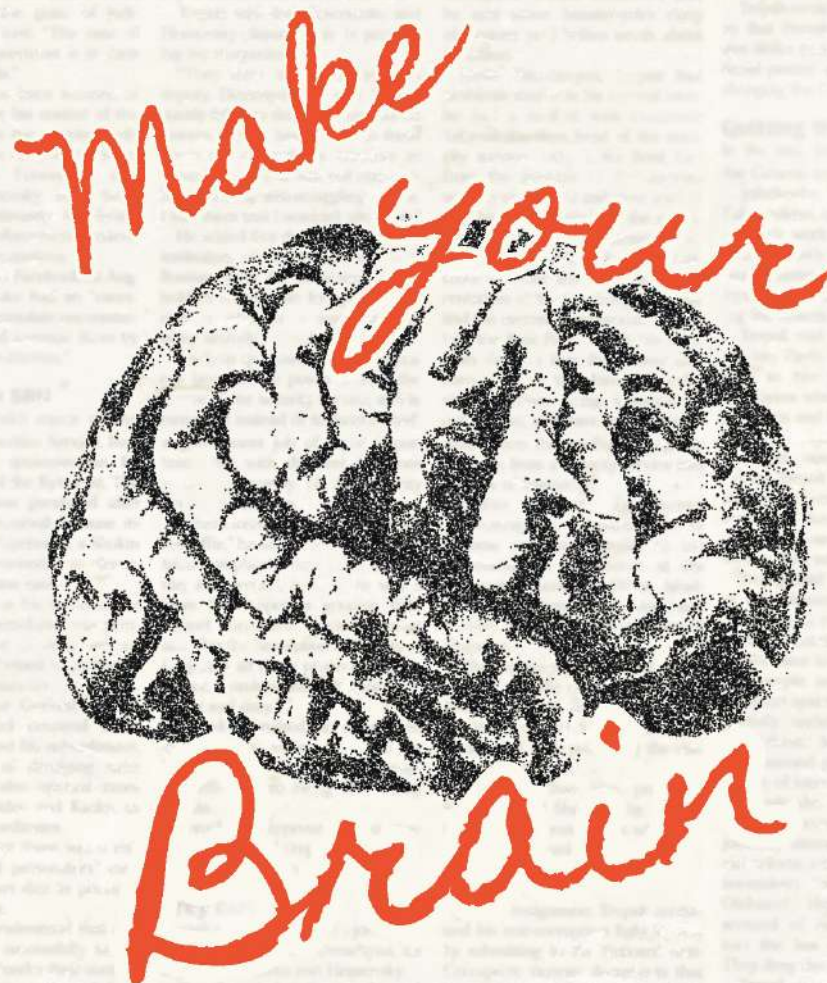
Chemotherapy-Induced Toxicity: Protective Effects of Herbal Treatments

**Invention Description:**

This study investigates the protective effects of Curcumin and Garlic against chemotherapy-induced toxicity, focusing on the alleviation of side effects caused by the chemotherapeutic agent Paclitaxel.

**Category:**

M ) Medical Technology - Medical Engineering - Medicine - Hygiene





# JORDAN

Hashemite Kingdom of Jordan

Industrial Property Protection Directorate (IPPD)

Ministry of Industry, Trade and Supply



## IPPD

Industrial Property  
Protection Directorate

Official Industrial property  
office of Jordan



Jordan's intellectual property landscape reflects a knowledge-oriented economy that combines higher education strengths, entrepreneurship, and gradual institutional modernization. The Industrial Property Protection Directorate, based in Amman under the Ministry of Industry, Trade and Supply, maintains patent and related industry patent bings, and serves as a key interface between innovators and the legal protection system. WIPO data indicate that Jordan's patent volumes remain modest in global comparison, yet the country shows active participation in international IP pathways and a steady pattern of outward-oriented inventive activity. Universities and research-led institutions contribute visibly to the ecosystem, while pharmaceuticals, medical technology, food chemistry, and selected engineering domains appear among notable technical fields. Jordan has also strengthened its international integration through WIPO membership and participation in key IP treaties, including the Patent Cooperation Treaty. Overall, the country's IP profile suggests an innovation system with meaningful regional relevance, strong human capital foundations, and continuing opportunities to deepen commercialization, technology transfer, and research-to-market performance.

PATENT  
APPLICATIONS

## 282

Filed at Jordan's national  
IP office - 2024

GLOBAL RANK

## 78<sup>th</sup>

Rank by total patent  
applications filed at the  
national office - 2024

PATENTS IN FORCE

Official data  
not available

Latest approved-source numeric  
figure not clearly available in the  
verified extract

APPLICATIONS BY  
RESIDENTS WORLDWIDE

## 92

Patent applications  
originating from Jordan  
residents worldwide - 2024



Capital

Amman



Population

11.52M

World Bank - 2025



GDP (Nominal)

US\$ 61.61B

World Bank - 2025



Patent Office

IPPD

Industrial Property  
Protection Directorate



WIPO Status

Member since 1972

PCT state since 2017

Source: WIPO Intellectual Property Statistical Country Profile: Jordan (WIPO Statistics Database, last updated 6/2026); patent indicators shown for latest available year, 2024)  
WIPO country profile and member state resources; World Bank Open Data (Population, total; GDP current US\$), latest shown 2025).



## Jordan Jordan

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Street, next to Smart Reading International Schools,  
Amman, Jordan



**Invention ID: Youth Innovation Olympiad / JO -9621**

**Inventor(s):**

Amir Hashem Mohammad AlKhalailah

**Invention Title:**

Clean Plant Energy System for Future Aviation

**Invention Description:**

A smart clean-energy system that uses natural plants such as aloe vera to generate renewable electricity for future aircraft systems, helping reduce pollution and protect the environment.

**Category:**

P ) Energy - Renewable and green energy



## Jordan Jordan

Rami Jawdat Nemer Waqqad

Email: rami1.jawdat@gmail.com

Phone: +962 799112644

Address: Amman, Jordan / Postal Code: 11941



**Invention ID: JO -9622**

**Inventor(s):**

Rami Jawdat Nemer Waqqad

**Invention Title:**

Protection of the Driver and Passenger Through the Front Glass Resulting From the Use of Highlight That Fall on the Eyes

**Invention Description:**

Accidents and injuries resulting from the use of high-beam headlights. This invention solves the problem by automatically darkening the vehicle's windshield when exposed to high-beam lights from oncoming vehicles.

**Category:**

J ) Traffic - Transport - Car Accessories



Republic of Korea



특허청

KOREAN INTELLECTUAL  
PROPERTY OFFICE

MOIP

MINISTRY OF INTELLECTUAL  
PROPERTY



PROTECTING IDEAS,  
EMPOWERING INNOVATION,  
DRIVING FUTURE GROWTH.

## Ministry of Intellectual Property (MOIP)

The Republic of Korea has developed one of the world's most research-intensive and export-oriented innovation systems, supported by advanced **digital infrastructure**, **strong industrial capabilities**, and sustained investment in science and technology. Patent filing activity remains among the highest globally, reflecting the country's concentration of technology firms, manufacturing leaders, universities, and public research institutes. Intellectual property plays a central role in commercializing research, protecting competitive advantages, and enabling growth in semiconductors, electronics, mobility, biotechnology, and green technologies. The national IP framework helps innovators convert **R&D into market value** while supporting startups and SMEs with international ambitions. High volumes of resident filings at home and abroad also highlight the outward-looking nature of Korean innovation. In this context, the IP system remains a critical institutional pillar for productivity, technology diffusion, and long-term global competitiveness.



296,041

PATENT APPLICATIONS (2024)



4<sup>th</sup>

GLOBAL RANK



1,312,294

PATENTS IN FORCE (2024)



295,722

APPLICATIONS BY RESIDENTS  
WORLDWIDE (2024)



Capital

Seoul



Population

51,684,564



GDP (Nominal)

US\$1.87T



Patent Office

MOIP



WIPO Member

Yes (since 1979)



## The Republic of Korea

Korea Invention Promotion Association (KIPA)

Website: [www.kipa.org](http://www.kipa.org)

Email: [siif@kipa.org](mailto:siif@kipa.org)

Phone: +82 2 34592758

Address: 131 Teheran-ro, Gangnam-gu, Seoul, Republic  
of Korea



Invention ID: **KR - 8201**

Inventor(s):

KOEN

Invention Title:

Method and apparatus for analyzing the impact of artificial intelligence on extracting industry-specific statute amendments through integration with the Ministry of Government Legislation API

Invention Description:

This integrated safety AI platform, built on the submitted API tech, combines 10 patents. By fusing public data and generative AI, it eliminates omission risks. AI is a source-based review tool, not replacing human judgment. Developed by field experts to cut costs, it is free to SMEs to save lives. Updating local law files grants rapid global scalability.

Category:

N ) Hardware - Software - Cybersecurity - Blockchain - Internet of things (IoT)



Invention ID: **KR - 8202**

Inventor(s):

KOEN, Electreko

Invention Title:

Sponge Ball Degassing Saturation Device

Invention Description:

This innovative vacuum device optimally hydrates sponge balls for power plant heat exchangers. It prevents ball damage and manual squeezing, ensuring rapid, uniform hydration. Hydrated balls mix evenly in coolant without floating, maximizing tube cleaning and thermal efficiency. It is also being commercialized for expansion to other power plants.

Category:

A ) Mechanics - Engines - Machinery - Robotic - Tools - Industrial Process - Metallurgy



Invention ID: **KR - 8203**

Inventor(s):

ICTK Co., Ltd.

Invention Title:

Apparatus and Method for Generating Physical Unclonable Function by Modifying Photo Mask of Semiconductor Process

Invention Description:

A method for generating a Physical Unclonable Function (PUF) by distorting photomask windows to stochastically control inter-layer contact formation. Modified OPC and down-scaled windows tune success probability to ~50%, creating a unique, unclonable hardware security key for IoT authentication.

Category:

N ) Hardware - Software - Cybersecurity - Blockchain - Internet of things (IoT)



**Invention ID: KR - 8204**

**Inventor(s):**

FIREBUSTER INC

**Invention Title:**

Fire Extinguisher Having Convenience to Manage and Use

**Invention Description:**

The Automatic One-Touch Fire Extinguisher is a patented safety invention that improves safety pin release, hose aiming, and handle operation through a mechanical interlock structure. It works intuitively without electronics or batteries, helping ordinary users respond faster during early-stage fires.

**Category:**

A ) Mechanics - Engines - Machinery - Robotic - Tools - Industrial Process - Metallurgy



**Invention ID: KR - 8205**

**Inventor(s):**

NAITEDU

**Invention Title:**

Method Of Measuring Level of Knowledge Based on Area of Interests and Computer Program for Performing the Method

**Invention Description:**

NAITEDU's Metacognitive Vocabulary Notebook is an AI-powered vocabulary learning tool. Using lightweight eye-tracking, it compares learners' perceived knowledge with actual performance to identify mastered, unknown, confused, and misunderstood words. AI provides personalized review to improve retention and vocabulary mastery.

**Category:**

N ) Hardware - Software - Cybersecurity - Blockchain - Internet of things (IoT)



**Invention ID: KR - 8206**

**Inventor(s):**

K-DEFENSE CO., LTD. / KOREA FIRE INSTITUTE

**Invention Title:**

One Touch Type Air Tank Connecting Assembly

**Invention Description:**

This is about the technology applied to the "ONE TOUCH TYPE AIR TANK CONNECTING ASSEMBLY" of an Self-Contained Breathing Apparatus, which was patented on March 21, 2024 (Patent No. 10-2651608) and for which a PCT application was completed on August 22, 2023.

**Category:**

E ) Security - Rescue - Alarm



**Invention ID: KR - 8207**

**Inventor(s):**

Hee-Jin Cho / annycoedu

**Invention Title:**

Method Of Providing Art Learning Materials and System Performing Thereof

**Invention Description:**

Anygallery is a masterpiece-based creative art program for young children, encouraging exploration, creative thinking, and self-expression through play-based, multisensory learning.

**Category:**

O ) Teaching Research - Pedagogical Items



**Invention ID: KR - 8208**

**Inventor(s):**

Sang-Won Baek

**Invention Title:**

Manufacturing Method of Molded Article for Water Purification

**Invention Description:**

Green Ball is a product that inhibits the growth of algae and kills them solely through contact between the material and water, without the need for electricity or separate maintenance.

**Category:**

P ) Energy - Renewable and green energy



**Invention ID: KR - 8209**

**Inventor(s):**

Kimblade Co., Ltd.

**Invention Title:**

Wiper Blade Strip

**Invention Description:**

Kimblade X uses a rectangular silicone edge to reduce reversal noise and ensure stable wiping with consistent pressure. Designed for EVs, it offers quiet and durable performance.

**Category:**

J ) Traffic - Transport - Car Accessories



Republic of  
**Korea**  
**Korea**

HL SCIENCE Co., Ltd.

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Email: [dayoung@hlscience.com](mailto:dayoung@hlscience.com)

Phone: +82 1068611935

Address: 89 Anyangpangyo-ro, Uiwang-si, Gyeonggi-do,  
Republic of Korea / Post Code: 16004



**Invention ID: KR - 8210**

**Inventor(s):**

HL SCIENCE Co., Ltd. , Hae Yeon Lee

**Invention Title:**

Composition for Improving Skin, Containing Pomegranate Concentrate as an Active Ingredient (P-estro)

**Invention Description:**

A pomegranate concentrate-based composition designed to promote hyaluronic acid synthesis, support skin moisturization, and enhance skin brightening by inhibiting melanin production.

**Category:**

Q ) Paramedical - Health - Foodstuffs - Drinks - Cosmetics



**Invention ID: KR - 8211**

**Inventor(s):**

HL SCIENCE Co., Ltd., Hae Yeon Lee, Jong Lae Kim, Sung Bin Lim, So Young Kim

**Invention Title:**

Pharmaceutical Composition Containing Scutellaria baicalensis Root and Olea europaea Leaf Extract Fermentate (HL ALOS)

**Invention Description:**

A composition comprising a complex of Scutellaria baicalensis root extract and olive leaf extract or a probiotic fermentate thereof for hair loss treatment and hair health improvement.

**Category:**

Q ) Paramedical - Health - Foodstuffs - Drinks - Cosmetics



**Invention ID: KR - 8212**

**Inventor(s):**

HL SCIENCE Co., Ltd., Hae Yeon Lee, Jong Lae Kim, Sung Bin Lim, So Young Kim

**Invention Title:**

Composition for Anti-Aging and Skin Improvement Comprising a Complex of Indian Gooseberry Extract and Barley Sprout Extract (IB Complex) as an active ingredient

**Invention Description:**

A composition of Phyllanthus emblica and Hordeum vulgare extracts for antioxidant, anti-wrinkle, moisturizing, and elasticity-improving effects.

**Category:**

Q ) Paramedical - Health - Foodstuffs - Drinks - Cosmetics



Republic of  
**Korea**  
**Korea**

ORBITN Co., Ltd.

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Phone: +82 1041111192

Address: KM Tower 1001-1007, 95 Gasan Digital 2-ro, Geumcheon-gu, Seoul, Republic of Korea / Post Code: 08505



**Invention ID: KR - 8213**

**Inventor(s):**

ORBITN Co., Ltd., Cha Kyung Ae

**Invention Title:**

Braking Device with Slope Detection and Deceleration Function

**Invention Description:**

Functions normally on flat surfaces. Automatically detects slopes and triggers braking without power or user input. Prevents runaway and ensures safe, controlled deceleration.

**Category:**

M ) Medical Technology - Medical Engineering - Medicine - Hygiene





# Mexico

Montabrera Co.

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## IMPI

Instituto  
Mexicano de  
la Propiedad  
Industrial

Official industrial  
property office of  
Mexico

# MEXICO

Instituto Mexicano de la Propiedad Industrial (IMPI)

Mexico combines a large domestic market with a deeply integrated manufacturing economy linked to North American value chains. Automotive, electronics, medical devices, aerospace, agribusiness and consumer products support steady demand for patents and other forms of industrial property. The Mexican Institute of Industrial Property (IMPI) administers industrial property rights and plays a central role in protecting inventions and supporting technology transfer. WIPO data show that Mexico records substantial patent filing activity at the national office, although most filings originate from non-resident applicants, reflecting the country's openness to international business and cross-border innovation. Resident patenting remains more modest, yet universities, research centers and firms continue to expand activity in advanced manufacturing, health technologies, chemistry and digital solutions. Stronger commercialization pathways, R&D investment and links between public research and industry can further improve domestic innovation performance.



**Invention ID:** Youth Innovation Olympiad / MX - 521

**Inventor(s):**

Miguel Armando Montaña Tapia, David Ricardo Cabrera Gallego

**Invention Title:**

Plunger Boy

**Invention Description:**

Remote stock price checker supported by an internet connection for real-time prices, equipped with buttons for easy-to-understand navigation and a stocks-related video game.

**Category:**

B ) Electronics - Electricity - Methods of Communication



PATENT APPLICATIONS

16,189

Total applications at  
national office • 2024



GLOBAL RANK

13<sup>th</sup>

By total patent applications  
at national office • 2024



PATENTS IN FORCE

111,190

Latest available WIPO  
figure • 2024



APPLICATIONS BY  
RESIDENTS WORLDWIDE

1,913

Patent applications by  
applicants residing in  
Mexico • 2024



Capital

Mexico City



Population

131.95M



GDP (Nominal)

US\$1.83T



Patent Office

IMPI



WIPO Member

Yes

**Source:**World Intellectual Property Organization (WIPO), Intellectual Property Statistical Country Profile 2024 – Mexico, for patent applications, patents in force, and global ranking; WIPO Country Profile for Mexico, for WIPO membership and official intellectual property institutions; Instituto Mexicano de la Propiedad Industrial (IMPI), Government of Mexico, for information on Mexico's official industrial property office; and World Bank Data for Mexico's population, nominal GDP, industrial structure, and economic profile.





# PALESTINE

## Intellectual Property and Patent Landscape

### GENERAL DIRECTORATE OF INTELLECTUAL PROPERTY

Ministry of National  
Economy Ramallah

*Institutional IP  
administration and  
registration functions*



The State of Palestine's innovation landscape is shaped by a young population, universities, entrepreneurship initiatives, and increasing interest in knowledge-based economic activity. Intellectual property administration is associated with the General Directorate of Intellectual Property within the Ministry of National Economy, which supports legal and administrative pathways for protection and registration. In the latest readily accessible cross-country institutional datasets, standard patent-series indicators for Palestine are limited or not consistently reported, so the current picture is best interpreted through institutional development rather than filing scale alone. In practice, intellectual property remains relevant to technology commercialization, brand development, creative industries, and research translation. Sectors such as ICT services, education, pharmaceuticals, agrifood activity, and small-scale manufacturing can benefit from stronger IP awareness and protection strategies. WIPO-linked cooperation, information access, and innovation-support services can also help researchers, entrepreneurs, and businesses navigate prior-art search, registration processes, and commercialization pathways with greater confidence.



Population

**5.59M**

2025



GDP Nominal

**US\$17.4B**

2025



Patent Office

**General Directorate of  
Intellectual Property**



WIPO Status

**Observer**

Source: WIPO Directory of IP Offices; WIPO Knowledge Center; WIPO IP Statistics Data Center checked for latest accessible patent-series reporting; UNData country profile for the State of Palestine 2025; World Bank Open Data(Population; GDP current US\$).



# Palestine

Higher Council for Innovation and Excellence

Website: [www.hcie.ps](http://www.hcie.ps)

Email: [info@hcie.ps](mailto:info@hcie.ps)

Phone: +972 2 2820016 / 7

Address: AI Reehan Neighborhood, Building No 5, Ramallah, Palestine



**Invention ID: PS - 97101**

**Inventor(s):**

Hisham A.H Shriam

**Invention Title:**

AGRIOTEC Agricultural Orientation Technology

**Invention Description:**

AGRIOTEC is a precision IoT system for greenhouse farmers, monitoring chemicals and resources. Using machine learning, it provides smart guidance and interaction to cut costs and boost safe yields.

**Category:**

H ) Agriculture - Forestry and Garden - Pet and Farm Animal Supplies



**Invention ID: PS - 97102**

**Inventor(s):**

Mohamad A. Abu Zahra

**Invention Title:**

μNEAB-MIP: A Wearable Molecular Memory Biosensor for Cumulative Histamine Activity Assessment

**Invention Description:**

AWearable molecular memory biosensor encoding cumulative histamine exposure using microneedles and electrochemical sensing for personalized inflammation assessment.

**Category:**

M ) Medical Technology - Medical Engineering - Medicine - Hygiene



**Invention ID: PS - 97103**

**Inventor(s):**

Laith Asabeh, Jana Taha, Reem Othman, Mariana Musallam, Waleed Rabi, Lina Fraitekh, Ioay Odeh / Medline Company

**Invention Title:**

VR Medical Training Platform

**Invention Description:**

AI and VR platform for realistic medical training. Enables safe, repeatable practice of procedures, improving skills while eliminating risks to real patients.

**Category:**

M ) Medical Technology - Medical Engineering - Medicine - Hygiene



**Invention ID: PS - 97104**

**Inventor(s):**

Ahmed Osama Naser

**Invention Title:**

PureDrop: Smart Water Quality Assessment for Crisis-Affected Communities

**Invention Description:**

Many conflict-affected regions lack access to safe water and testing facilities. PureDrop provides rapid, low-cost water quality assessment, enabling early detection of unsafe water and safer decisions.

**Category:**

B ) Electronics - Electricity - Methods of Communication



**Invention ID: PS - 97105**

**Inventor(s):**

Nour Saif

**Invention Title:**

Nuralix: Encrypted Health Digital Twin and Human Health Observability Platform

**Invention Description:**

Nuralix is an AI-powered Health Observability Platform that creates a real-time encrypted Health Digital Twin from smart-phone sensing, wearables, labs, genetics, and AI, providing health predictive analytics.

**Category:**

N ) Hardware - Software - Cybersecurity - Blockchain - Internet of things (IoT)



**Invention ID: PS - 97106**

**Inventor(s):**

Basel Sameer Mahmoud Al Herbawi

**Invention Title:**

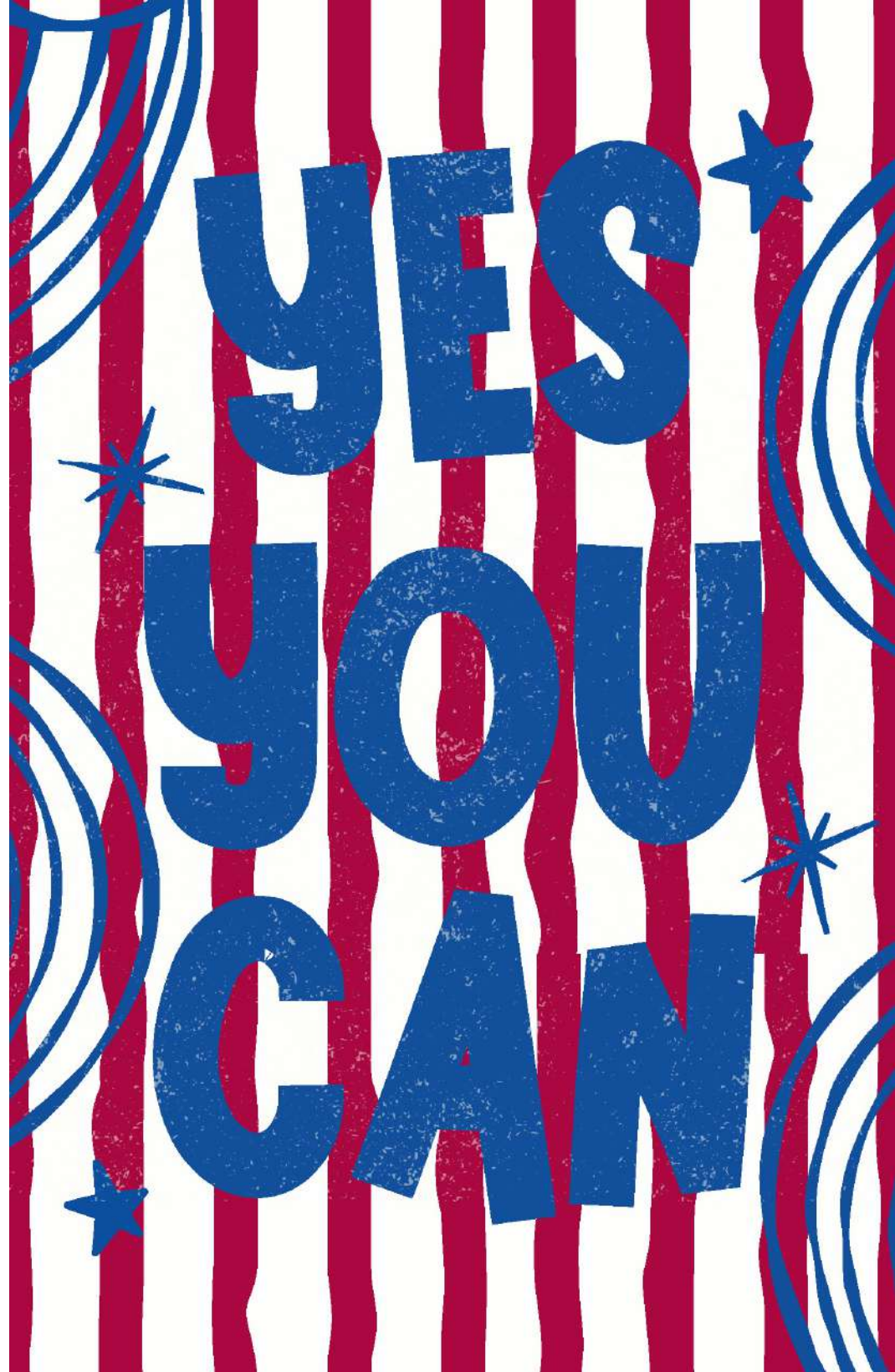
Geometrical Dimensional Mobile Laboratory

**Invention Description:**

A modular 3D educational construction system based on Cartesian coordinates that transforms spatial engineering concepts into geometrical hands-on models through assembly, measurement and spatial learning

**Category:**

A ) Mechanics - Engines - Machinery - Robotic - Tools - Industrial Process - Metallurgy





# PHILIPPINES



INTELLECTUAL PROPERTY  
OFFICE OF THE PHILIPPINES

Intellectual Property  
Office of the Philippines

## IPOP HL

Official intellectual  
property office of the  
Republic of the  
Philippines

Intellectual Property Office of the Philippines

## IPOP HL

The Philippines has a developing innovation ecosystem in which IPOP HL plays a central role in patent administration, IP awareness, commercialization support, and technology transfer. The country combines a large domestic market with strengths in electronics, manufacturing, food-related technologies, pharmaceuticals, and service-oriented digital activity.

WIPO data show that non-resident filings account for a large share of patent applications at the national office, indicating international commercial interest, while resident-origin filings worldwide show continued local inventive activity. The country's top patent-related technical fields include food chemistry, other special machines, pharmaceuticals, basic materials chemistry, and IT methods for management. As a WIPO member since 1980 and a PCT contracting state, the Philippines continues to strengthen the role of intellectual property in innovation policy, enterprise development, and integration with regional and global knowledge markets.



PATENT  
APPLICATIONS

# 4,571

Total patent  
applications filed at the  
national IP office • 2024



GLOBAL RANK

# 29<sup>th</sup>

Rank by total patent  
applications filed at the  
national IP office • 2024



PATENTS IN FORCE

# 15,463

Valid patents in force at  
the national office • 2024



APPLICATIONS BY  
RESIDENTS WORLDWIDE

# 1,064

Patent applications by  
residents worldwide • 2024



Capital

MANILA



Population

116.8M



GDP (Nominal)

US\$487.09B



Patent Office

IPOP HL



WIPO Membership

Member since 1980

Source: WIPO Statistical Country Profile 2024 (updated 6/2026); WIPO IP Statistics Data Center; WIPO Country Profile • Philippines; World Bank Open Data (Population and GDP, 2025).



# Philippines Philippines

Bauertek Farmaceutical Technologies Corp-BFT  
Filipino Inventors' Society and The Filipino Inventors  
Society (FIS)  
Email: [rigelgomez@bauertek.ph](mailto:rigelgomez@bauertek.ph)  
Phone: +63 9171307367  
Address: 9001 Kabilang Bakood, Sta. Rita, Guiguinto,  
Bulacan, Philippines



Invention ID: PH - 6301

Inventor(s):

Richard Nixon C. Gomez, Rigel R. Gomez, Bauertek Farmaceutical Technologies Corporation

Invention Title:

Pro Nitro Lite (PNL)

Invention Description:

PNL is a powdered juice drink made from Beetroot, Garcinia cambogia and Antidesma bunius which provides a wide range of health benefits. Induces fat burn and weight loss, increases endurance, enhances performance.

Category:

Q ) Paramedical - Health - Foodstuffs - Drinks - Cosmetics



Invention ID: PH - 6302

Inventor(s):

Richard Nixon C. Gomez, Rigel R. Gomez, Bauertek Farmaceutical Technologies Corporation

Invention Title:

Black Garlic. (Bauertek - All Natural Black Garlic)

Invention Description:

A combination of Black Garlic extract, Ehretia microphylla and Mimosa pudica. This helps the body deal with digestive tract disorders and diseases. Inhibits Colon cancer cell growth, antispasmodic and anti-inflammatory

Category:

M ) Medical Technology - Medical Engineering - Medicine - Hygiene



Invention ID: PH - 6303

Inventor(s):

Richard Nixon C. Gomez, Rigel R. Gomez

Invention Title:

Jamperine

Invention Description:

Jamperine is the most powerful anti-diabetic food supplement. Made from Eugenia Jambolana extracts, it can reduce blood sugar by as much as 40% in 2 hours. It also helps the body produce and utilize insulin.

Category:

M ) Medical Technology - Medical Engineering - Medicine - Hygiene



# UPRP

Patent Office of the  
Republic of Poland

Official industrial  
property office of  
Poland



# POLAND

Patent Office of the Republic of Poland

Poland combines a large European market, a diversified industrial base, and a steadily developing innovation ecosystem. The country's intellectual property framework is anchored by the Patent Office of the Republic of Poland, which administers national protection for inventions and other industrial property rights. WIPO data show a patent system led largely by resident filings at the national office, while Polish applicants also pursue protection abroad through regional and international routes. The national profile points to technical strengths in fields such as civil engineering, medical technology, specialized machinery, measurement, and organic fine chemistry. Poland's broader innovation position is supported by its manufacturing capabilities, engineering talent, and integration with European research and business models. Intellectual property the core players implement rules in helping mutual property rights, while investors translate technical knowledge into protected assets, while also linking domestic innovation activity with wider international markets.



PATENT APPLICATIONS

3.45K

Total patent applications at  
the national office



GLOBAL RANK

33<sup>rd</sup>

Rank by total patent applications  
at the national office



PATENTS IN FORCE

111.8K

Patents in force



APPLICATIONS BY  
RESIDENTS WORLDWIDE

5.52K

Patent applications filed  
worldwide by residents of Poland



Capital

Warsaw



Population

36.4M



GDP (Nominal)

US\$1.04T



Patent Office

UPPR



WIPO Membership

Member since 1975

Source: WIPO Statistical Country Profile for Poland, 2024 data, updated 6/2026; WIPO Country Profile, Poland; WIPO IP Statistics Data Center, World Bank Open Data, Population total 2025; World Bank Open Data, GDP current US\$ 2025.



# Poland

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Address: Jutrzenki 8A/1, Józefosław, Poland



Invention ID: Youth Innovation Olympiad / PL - 481

Inventor(s):

Zofia Chrapko

Invention Title:

Building a prototype of the device, conducting research on the acoustic spectrum of the heartbeat

Invention Description:

This prototype device is designed for non-invasive cardiac assessment through spectral analysis of heart sounds auscultated using a medical stethoscope equipped with a built-in condenser microphone.

Category:

M ) Medical Technology - Medical Engineering - Medicine - Hygiene



State Office for Inventions and Trademarks (OSIM)

# OSIM

STATE OFFICE FOR  
INVENTIONS AND  
TRADEMARKS

National intellectual  
property office of  
Romania

Romania's intellectual property landscape reflects a diversified economy shaped by manufacturing, engineering capability, research institutions, and growing digital services. The national patent system is administered by the State Office for Inventions and Trademarks (OSIM), which serves as the central authority for patent filing and protection at the national level. Patent activity remains moderate in global comparison, yet resident-origin filings indicate continuing inventive output from companies, universities, and public research bodies. Romania's innovation profile is linked to sectors such as automotive production, electrical equipment, ICT services, industrial technologies, health-related research, and energy solutions. As a member of the European Union and a WIPO member state, Romania operates within a broader international intellectual property framework that supports protection, technology transfer, and market expansion. Strengthening IP awareness, commercialization pathways, and research-to-market conversion remains important for improving the national innovation ecosystem.



PATENT  
APPLICATIONS

810

Total applications at  
national IP office - 2024



GLOBAL RANK

56<sup>th</sup>

Rank by total patent  
applications at national IP  
office - 2024



PATENTS IN FORCE

27,474

Latest available WIPO  
figure - 2024



APPLICATIONS BY  
RESIDENTS WORLDWIDE

1,029

Resident-origin  
patent applications  
filed worldwide - 2024



Capital

Bucharest



Population

19.02M



GDP (Nominal)

US\$428.68B



Patent Office

OSIM



WIPO Membership

Since 1970

Source: WIPO Intellectual Property Statistics Country Profile: Romania (2024);  
WIPO Country Profile: Romania; World Bank Data — Population, total (2025)  
and GDP, current US\$ (2025).

# Romania

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Phone: +40 745438604

Address: Bulevardul Profesor Dimitrie Mangeron 67,  
700050 Iași, Romania



**Invention ID: RO - 4001**

**Inventor(s):**

Petrică Vizureanu, Mădălina Simona Bălțatu, Andrei Victor Sandu, Dragoș Cristian Achitei, Manuela Cristina Perju, Corina Ioana Moga, Dumitru Doru Burduhos-Nergis

**Invention Title:**

A new generation of metallic biomaterials as health solution for a sustainable life

**Invention Description:**

The project aims to obtain a new alloys system containing Ti, Mo, Nb and Sn, with characteristics suitable for medical applications. In this sense, the new titanium-based alloys will undergo specific heat treatments to obtain alloys with good mechanical properties intended for orthopedic applications.

**Category:**

M ) Medical Technology - Medical Engineering - Medicine - Hygiene



**Invention ID: RO - 4002**

**Inventor(s):**

Rîpanu Marius-Ionuț, Slătineanu Laurențiu, Guriță Alexandru

**Invention Title:**

Punching pliers

**Invention Description:**

The invention relates to punching pliers meant to enable the evaluation of the force required to make holes in thin semi-finished products by punching.

**Category:**

A ) Mechanics - Engines - Machinery - Robotic - Tools - Industrial Process - Metallurgy



**Invention ID: RO - 4003**

**Inventor(s):**

Burlacu Andrei, Vizitiu Robert-Ștefan, Seghedin Neculai-Eugen

**Invention Title:**

Compact system for defrosting roadways and pedestrian pathways

**Invention Description:**

The invention relates to a compact system for highly efficient defrosting of roadways and pedestrian pathways, operating with an ecological non-polluting working medium, without consumption of thermal or electrical energy from the outside, by using gravitational heat pipes.

**Category:**

C ) Building - Architecture - Civil Engineering - Construction - Materials - Woodwork



**Invention ID: RO - 4004**

**Inventor(s):**

Georgiana Bunea, Sergiu-Mihai Alexa-Stratulat

**Invention Title:**

Mobile Experimental Stand for Testing a Linear Structural Element Under the Action of High Temperatures

**Invention Description:**

The invention refers to a mobile experimental stand for testing a linear structural element, with a length of approximately 1 ÷ 4 m, to temperatures of 600°C÷800°C.

**Category:**

C ) Building - Architecture - Civil Engineering - Construction - Materials - Woodwork



**Romania**  
**Romania**

**Petroleum and Gas University**

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Phone: +40 757528929

Address: B-dul Bucuresti, nr. 39, Ploiesti, Prahova, Ploiesti, Romania



**Invention ID: RO - 4005**

**Inventor(s):**

Nicusor Serban, Casen Panaitescu, Monica-Emanuela Stoica

**Invention Title:**

System for Modernizing Existing Pipeline Infrastructure for Hydrogen Transportation

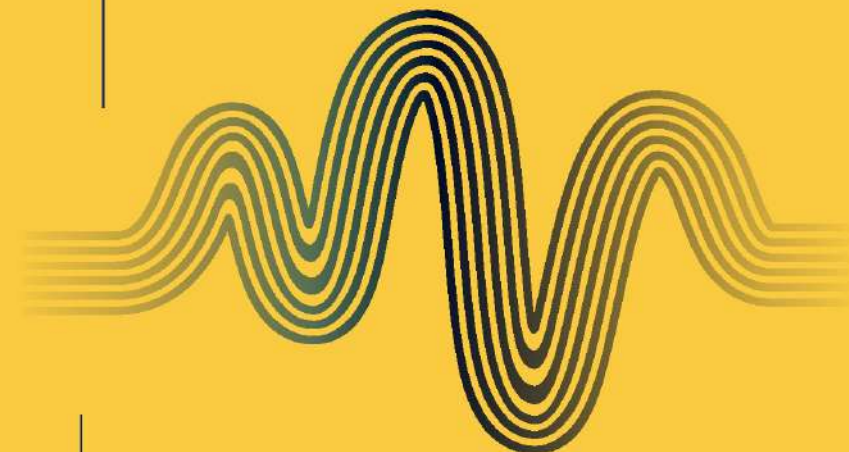
**Invention Description:**

An intelligent autonomous in-pipe robotic system for inspecting and upgrading existing pipelines, enabling their safe and cost-effective adaptation for Hydrogen transportation.

**Category:**

P ) Energy - Renewable and green energy

# Digital Future Technology



Opening a  
Borderless World,  
Connecting the  
Future Today.



# SAUDI ARABIA

SAUDI AUTHORITY  
FOR INTELLECTUAL  
PROPERTY

## SAIP

Official intellectual  
property office of  
Saudi Arabia.



## SAUDI AUTHORITY FOR INTELLECTUAL PROPERTY SAIP

Saudi Arabia has expanded its intellectual property ecosystem in step with broader economic diversification and innovation goals. The Saudi Authority for Intellectual Property centralizes the administration of patents, trademarks and industrial designs while supporting awareness, enforcement and commercialization. Recent filing levels at the national offices show a significant increase in the number of applicants, while resident-origin patent applications filed worldwide point to a growing base of local inventive activity. Universities and research institutions, including King Abdullah University of Science and Technology, contribute meaningfully to the country's patent pipeline. Industrial technologies, petrochemicals, energy, advanced materials, digital services and health-related innovation remain relevant to the national landscape. As one of the largest economies in the Middle East, Saudi Arabia assigns increasing strategic importance to intellectual property as part of its long-term knowledge economy agenda. Its patent profile reflects stronger integration with international IP systems together with continued opportunities to deepen resident innovation intensity and commercialization outcomes.



PATENT APPLICATIONS

### 8,029

2024

Total patent applications at the national IP office.



GLOBAL RANK

### 25<sup>th</sup>

2024

Rank by total patent applications at the national IP office, sourced from WIPO.



PATENTS IN FORCE

### 14,739

2024

Total patents in force at the national IP office.



APPLICATIONS BY  
RESIDENTS WORLDWIDE

### 6,071

2024

Resident-origin patent applications filed worldwide.



Capital

Riyadh



Population

37.0M



GDP (Nominal)

US\$1.28T



Patent Office

SAIP



WIPO Membership

1982



Source: WIPO Intellectual Property Statistical Country Profile 2024 and WIPO IP Statistics Data Center, updated 6/2026; WIPO Country Profile for Saudi Arabia; World Bank Open Data for Population total 2025 and GDP current US\$ 2023.

## Saudi Arabia Saudi Arabia

Dr. Anas Bassam Barnawi

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**Invention ID: SA - 96601**

**Inventor(s):**

Dr. Anas Bassam Barnawi

**Invention Title:**

AdenoGlyco-Challenge: Functional Glycan-Based Screening for Early Colorectal Adenomas

**Invention Description:**

An oral glycan challenge that analyzes stool/FIT glycan depletion and cleavage patterns to generate an AdenoGlyco Score for early adenoma risk.

**Category:**

M ) Medical Technology - Medical Engineering - Medicine - Hygiene



## Saudi Arabia Saudi Arabia

Eng. Remas Faisal

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Address: Riyadh, Saudi Arabia / Post Code: 13253



**Invention ID: SA - 96602**

**Inventor(s):**

Remas Faisal Alenazi

**Invention Title:**

Spectrum Vision: AI-Powered VR Diagnostic and Vision Assessment System Using Eye Tracking Technology

**Invention Description:**

Spectrum Vision is an AI-powered virtual reality system that uses eye tracking and adaptive lens simulation to assess visual conditions including myopia, astigmatism, color vision deficiency, and amblyopia. The system provides rapid, accessible, and immersive vision screening with real-time analysis.

**Category:**

M ) Medical Technology - Medical Engineering - Medicine - Hygiene



**Invention ID: SA - 96603**

**Inventor(s):**

Remas Faisal Alenazi

**Invention Title:**

Glimmer: AI-Based Neural Signal Analysis System for Early Brain Tumor Detection

**Invention Description:**

Glimmer is an AI-powered system designed to analyze neural signals and identify abnormal neurological patterns associated with brain tumors. The system combines signal processing, machine learning, and continuous monitoring to support early detection and assist healthcare professionals in diagnosis.

**Category:**

M ) Medical Technology - Medical Engineering - Medicine - Hygiene



## Saudi Arabia

## Saudi Arabia

King Abdulaziz University / Tuwaiq Academy

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Address: Jeddah, Saudi Arabia



**Invention ID: SA - 96604**

**Inventor(s):**

Jehaad Aljohani, Duaa Mufarreh, Alanoud Alqarzaie, Hassan Alzahrani, Abdulrahman Alduraibi, Madaa Mufarreh

**Invention Title:**

Solara

**Invention Description:**

Solar panels lose efficiency due to dust and reflection. This project develops a multifunctional nanocoating to improve performance, increase efficiency, and reduce cleaning costs.

**Category:**

P ) Energy - Renewable and green energy



**Invention ID: SA - 96605**

**Inventor(s):**

Jehaad Aljohani, Duaa Mufarreh, Alanoud Alqarzaie, Hassan Alzahrani, Abdulrahman Alduraibi, Madaa Mufarreh

**Invention Title:**

Tremora

**Invention Description:**

A sensor-based smart glove that detects and analyzes hand tremors in real time, enabling objective assessment of surgical training performance and motor skill development.

**Category:**

O ) Teaching Research - Pedagogical Items



**Invention ID: SA - 96606**

**Inventor(s):**

Jehaad Aljohani, Duaa Mufarreh, Alanoud Alqarzaie, Hassan Alzahrani, Abdulrahman Alduraibi, Madaa Mufarreh

**Invention Title:**

HospitalLink

**Invention Description:**

A smart, low-power system designed for emergency resource management, bed monitoring, intelligent routing, and real-time hospital bed tracking.

**Category:**

M ) Medical Technology - Medical Engineering - Medicine - Hygiene



## Saudi Arabia

## Saudi Arabia

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**Invention ID: SA - 96607**

**Inventor(s):**

Amira Ibrahim Alqabbaa

**Invention Title:**

DIRA: AI-Powered Adaptive Safety Layer for Video Games

**Invention Description:**

DIRA is an AI-powered middleware that monitors game play behavior estimates mental health risk, and adapts game experiences to promote safer gaming for vulnerable players.

**Category:**

L ) Games - Sports - Hobbies

# Saudi Arabia

## Saudi Arabia

Al-Riyadah Educational Association

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Address: Riyadh, Saudi Arabia



**Invention ID: SA - 96608**

**Inventor(s):**

Obaid Mubarak Al-Harhi

**Invention Title:**

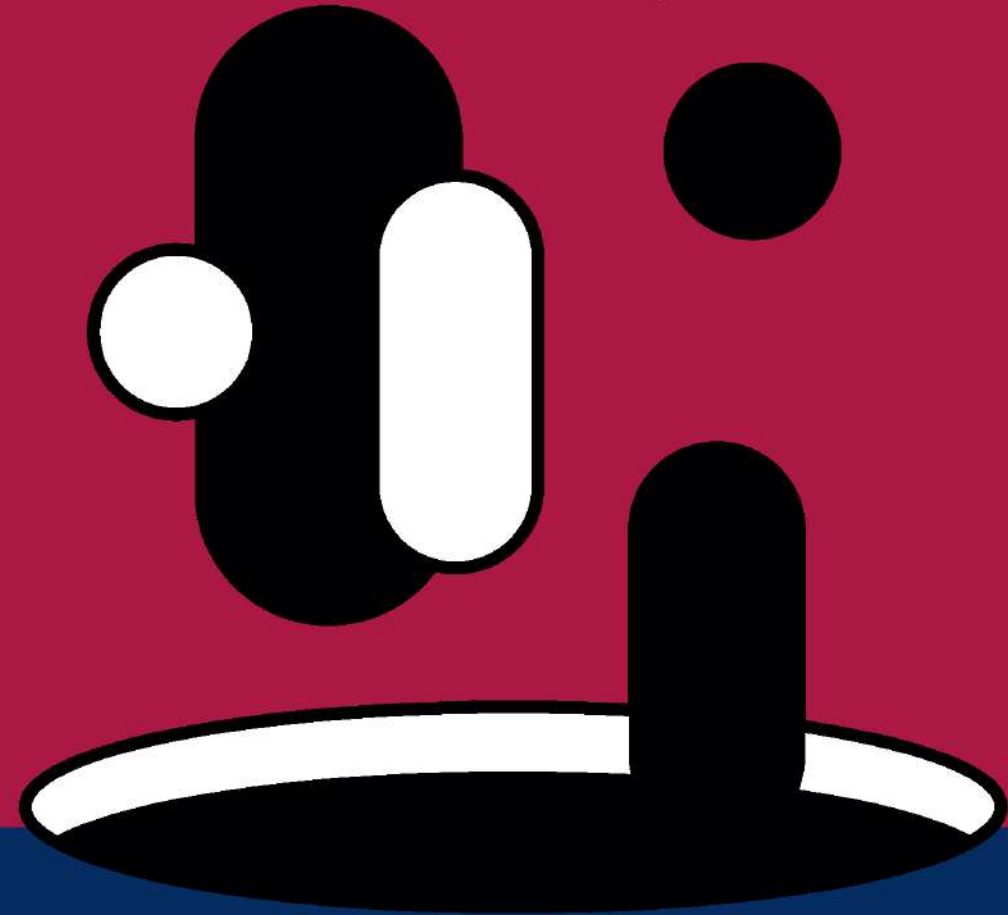
Wearable Device to Predict Epileptic Seizures

**Invention Description:**

An innovative AI-powered wearable device that identifies each patient's epileptic focus from clinical EEG data to enable personalized brain monitoring and proactive seizure prediction before seizure onset through adaptive artificial intelligence.

**Category:**

M ) Medical Technology - Medical Engineering - Medicine - Hygiene



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# SERBIA

Intellectual Property Office of the Republic of Serbia

## IPO

Intellectual  
Property Office of  
the Republic of  
Serbia

National IP office of  
the Republic of  
Serbia



Serbia's intellectual property landscape reflects a mixed but steadily developing innovation ecosystem rooted in engineering, manufacturing, ICT, pharmaceuticals, agriculture-related industries, and university research. Patent activity remains modest in absolute scale, yet the country maintains a functioning institutional framework, active resident filing, and participation in international IP systems. The Intellectual Property Office of the Republic of Serbia supports protection across patents, trademarks, industrial designs, and related rights, helping domestic applicants formalize innovation and compete more effectively in regional and international markets. Resident-origin filings worldwide indicate continued outward engagement beyond the domestic office, while patents in force show an established stock of protected technical knowledge. Serbia's broader innovation environment benefits from a skilled human-capital base, research institutions in Belgrade and Novi Sad, and growing integration with European markets. Overall, IP plays an important enabling role in strengthening commercialization, technology transfer, and long-term competitiveness.



PATENT  
APPLICATIONS

151

Total applications at  
the national IP office  
2024



GLOBAL RANK

90<sup>th</sup>

Rank by total patent applications  
at the national IP office  
2024



PATENTS IN FORCE

9,368

Patents in force  
2024



APPLICATIONS BY  
RESIDENTS WORLDWIDE

285

Patent applications filed  
worldwide by residents of Serbia  
2024



Capital

Belgrade



Population

6.55M  
2025



GDP Nominal

US\$99.95B  
2025



Patent Office

Intellectual Property  
Office of the Republic of  
Serbia



WIPO Membership

Member since 1992

Source: WIPO IP Statistics Data Center; WIPO Statistical Country Profile,  
last updated 6/2026; WIPO Country Profile



Republic of  
**Serbia**  
Serbia

Belgrade Association of Inventors

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Address: Obilicev venac 18/20, 11000 Belgrade, Republic  
of Serbia



**Invention ID: RS - 38101**

**Inventor(s):**

Galenika Company Serbia / BAI

**Invention Title:**

Bronhera 600mg

**Invention Description:**

The product Bronhera 600mg granules is made using the dry granulation technique, where the physico-chemical characteristics are completely preserved and good solubility of N-acetyl-cysteine is achieved. In this way, optimal bioavailability and action in the body are ensured.

**Category:**

M ) Medical Technology - Medical Engineering - Medicine - Hygiene



**Invention ID: RS - 38102**

**Inventor(s):**

Aleksandar Ćirić / Vinča Institute of Nuclear Sciences, University of Belgrade, Serbia / BAI

**Invention Title:**

E-COAT

**Invention Description:**

E-COAT is an innovative device and process for local electrolytic application of protective and functional layers on metal surfaces. It enables precise, adaptable and environmentally friendly application of electrochemical coatings, including local repair of damaged layers, creation of optical sensors and printing on metal.

**Category:**

A ) Mechanics - Engines - Machinery - Robotic - Tools - Industrial Process - Metallurgy



**Invention ID: RS - 38103**

**Inventor(s):**

Mladen Radaković / ITS - Information Technology School, Belgrade, Serbia / BAI

**Invention Title:**

Intelligent AI Vision System for Serbian Sign Language Letter Recognition

**Invention Description:**

This project presents an intelligent AI vision system designed to recognize letters of the Serbian Sign Language alphabet in real time. The innovation lies in using video clips instead of static images, allowing the system to accurately detect both static and motion-based gestures.

**Category:**

N ) Hardware - Software - Cybersecurity - Blockchain - Internet of things (IoT)

**Invention ID: RS - 38104****Inventor(s):**

Nataša Šekuljica, Milica Svetozarevic-Arsoovic, Stevan Stupar, Tanja Nedeljkovic, Aleksandra Ivanovska, Zorica Knezevic - Jugovic, Dusan Mijin / Innovation Center of the Faculty of Technology and Metallurgy, Belgrade, Serbia / BAI

**Invention Title:**

Method for enzyme immobilization on oxidized potato peels

**Invention Description:**

The present invention relates to an innovative process that repurposes waste from the potato processing industry, peel as a carrier for immobilizing peroxidase enzymes. This approach is not only cost-effective but also aligns with the principles of the "zero waste" concept and contributes to the reduction of greenhouse gas emissions.

**Category:**

A ) Mechanics - Engines - Machinery - Robotic - Tools - Industrial Process - Metallurgy

**Invention ID: RS - 38105****Inventor(s):**

Dr Mladen Ćosić , Dr. Nenad Šušić, Marko Prica / Institute for Testing of Materials - IMS, Belgrade, Serbia / BAI

**Invention Title:**

Innovative Prestressing-Based Pile Load Test

**Invention Description:**

The subject of this invention is an innovative method for testing the bearing capacity of reinforced concrete piles - the Prestressing-Based Pile Load Test (PBPLT), used in foundation engineering. This test determines pile capacity by applying a static prestressing force at the pile head, producing a reliable load-settlement curve and enabling assessment of both working and ultimate bearing capacity. The PBPLT was developed in accordance with existing engineering models and standards, with the added benefit that test piles can remain in service as working piles after testing. The procedure is carried out in several stages: site and soil analysis, pile construction, test preparation and execution, result evaluation, and pile strengthening/grouting. The method is based on the theory of prestressing, soil-structure interaction, and signal processing, and is designed to be safe for the testing crew and applicable to all types of reinforced concrete piles.

**Category:**

C ) Building - Architecture - Civil Engineering - Construction - Materials - Woodwork

**Invention ID: RS - 38106****Inventor(s):**

Marija Kostadinović, Dragana Ignjatovic Micici, Jelena Vancetovic, Nenad Delic, Danijela Ristic, Marijana Simic, Goran Stankovic / Maize Research Institute Zemun Polje, Belgrade, Serbia / BAI

**Invention Title:**

Quality Protein Maize (QPM) for Monogastric Animal Feed

**Invention Description:**

Hybrid ZPQPM13 is a high quality protein maize with elevated levels of the essential amino acids lysine and tryptophan, adapted to temperate regions. It exhibited key QPM traits, including good grain yield, hard kernel endosperm, high tryptophan and protein contents, good quality index

**Category:**

H ) Agriculture - Forestry and Garden - Pet and Farm Animal Supplies

**Invention ID: RS - 38107****Inventor(s):**

Tomislav Trisovic, Ana Trisovic, Lidija Rafailovic, Branimir Grgur, Zaga Trisovic / ITN SANU, Belgrade, Serbia / BAI

**Invention Title:**

Automatic Control and Artificial Intelligence: Device for Continuous Chlorine Residual Measurement

**Invention Description:**

The device integrates a PLC/HMI platform with an industrial computer and touch-screen interface, enabling data acquisition, visualization, remote control, and long-term storage of operational parameters. This setup allows both real-time management and the development of historical databases for advanced analysis.

**Category:**

N ) Hardware - Software - Cybersecurity - Blockchain - Internet of things (IoT)

**Invention ID: RS - 38108****Inventor(s):**

Sanja Milošević Govedarović, Tijana Pantic, Ana Mrakovic / Vinča Institute of Nuclear Sciences, University of Belgrade, Serbia / BAI

**Invention Title:**

Smoke Managing Gap

**Invention Description:**

SMG Filter System - A Breakthrough in Industrial Gas Purification. Patented by scientists from INN Vinča and IRM Bor, the SMG filter system is an innovative solution for smoke purification, designed to address harmful gasses: SO<sub>2</sub>, NO<sub>x</sub>, CO, and CO<sub>2</sub>.

**Category:**

A ) Mechanics - Engines - Machinery - Robotic - Tools - Industrial Process - Metallurgy

**Invention ID: RS - 38109****Inventor(s):**

Djordja Nedeljkovic, Aleksandra Popovac, Ivica Stancic, Nemanja Grkinic, Janko Jevremovic / School of Dental Medicine University of Belgrade, Serbia and DDS Digital Dental, Belgrade, Serbia / BAI

**Invention Title:**

Improved Design of the Connection Between the Dental and Mucosal Parts in a Telescopic Denture

**Invention Description:**

A telescopic denture with heterogeneous tearing pairs can be fabricated by making the inner crown from cobalt-chromium alloy, zirconia, titanium, or gold, while the outer crown is obtained either through a gold electroforming process or by applying a thin layer of gold to the inner surface of a crown made from cobalt-chromium alloy.

**Category:**

M ) Medical Technology - Medical Engineering - Medicine - Hygiene

**Invention ID: RS - 38110****Inventor(s):**

Nikola Milanovic / WellPet.ai / Kragujevac, Serbia

**Invention Title:**

WELLPET.AI - Smart Collar for Dogs

**Invention Description:**

WellPet reads your dog's emotions, activity, and health signals in real time so you catch what matters before it becomes a problem. Not a tracker. A longevity platform.

**Category:**

H ) Agriculture - Forestry and Garden - Pet and Farm Animal Supplies



# SPAIN

Spanish Patent and Trademark Office (OEPM)

## OEPM

Spanish Patent and Trademark Office

Official intellectual property office of Spain



Spain maintains a diversified innovation base supported by industrial capability, scientific research, and participation in both national and European intellectual property systems. Patent activity by residents reflects continued strength in science-driven and applied technology fields, with pharmaceuticals, medical technology, biotechnology, electrical machinery, and transport among the notable areas of activity. The Spanish Patent and Trademark Office, known as OEPM, serves as the national authority for patent protection while inventors also make active use of regional and international routes. WIPO data show that Spain combines domestic filing activity with a broader international patent footprint, indicating outward-looking innovation behavior by resident applicants. Patents in force remain comparatively substantial, suggesting a mature stock of protected technology rights. In this context, intellectual property functions as an important instrument for translating research, industrial development, and business innovation into legally protected assets within Spain and across foreign markets.



PATENT APPLICATIONS

1,294

Total patent applications at the national office



GLOBAL RANK

47<sup>th</sup>

Rank by total patent applications at the national office



PATENTS IN FORCE

217,849

Patent applications by residents worldwide



APPLICATIONS BY RESIDENTS WORLDWIDE

8,306

Patent applications by residents worldwide



Capital  
Madrid



Population  
49.36M



GDP (Nominal)  
US\$1.91T



Patent Office  
OEPM



WIPO Membership  
Member since 1970

Source: WIPO IP Statistics Data Center; WIPO Statistical Country Profile 2024; WIPO country profile and office information; World Bank Open Data 2025.



# Spain

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Invention ID: ES - 3401

Inventor(s):

Mohammad Mohammadi

Invention Title:

Stable peracetic acid aqueous solution with scale removal property, for use in CIP systems in the food, dairy, and beverage industries

Invention Description:

This invention is related to the preparation of commercial acid sanitizing and/or cleaning compositions comprising peracetic acid with antimicrobial and descaling properties at the same time. The present invention is used in CIP (cleaning in place) systems in the food, dairy, and beverage industries, as well as heating and cooling circulating water systems in all industries.

Category:

Q ) Paramedical - Health - Foodstuffs - Drinks - Cosmetics



Invention ID: ES - 3402

Inventor(s):

Meysa Malaek, Ali Ghasemi

Invention Title:

Noise-free hybrid temperature control system for building mechanical systems

Invention Description:

This invention aims to provide sustainable energy for building mechanical systems while eliminating the noise generated by conventional fluid transfer pumps. The system utilizes the full solar spectrum by converting ultraviolet light into electricity through photovoltaic cells, while visible and infrared radiation are transformed into thermal energy using a xenon-filled heat-absorbing coil. Heated air is transferred against natural convection using a modified ion thruster that accelerates ionized xenon with electric fields and permanent magnets, eliminating mechanical blowers. To increase thermal efficiency, methane recovered from wastewater and hydrogen produced through solar-powered electrolysis are used as additional heat sources. The treated wastewater can be reused as fertilizer, while water produced from hydrogen combustion is collected for recycling. Furthermore, the invention replaces conventional water circulation pumps with a particle acceleration system that guides water molecules through staged flow correction modules. Since the process operates at frequencies beyond human hearing, it enables silent circulation of both compressible and incompressible fluids while reducing energy consumption and improving overall system efficiency.

Category:

P ) Energy - Renewable and green energy



**Invention ID: ES - 3403**

**Inventor(s):**

Seher Hasanzade

**Invention Title:**

*Dentin Derivative Signal (DDS) for Differentiation of Dental Pulp Stem Cells and Dentin-Pulp Complex Regeneration*

**Invention Description:**

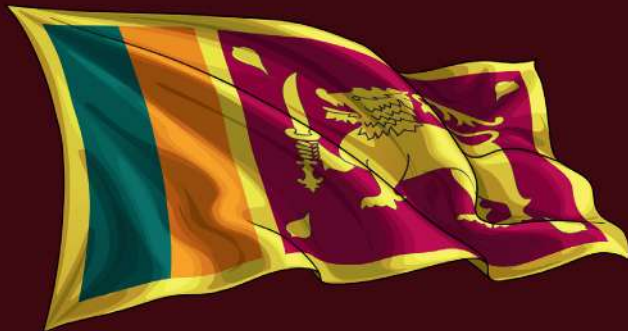
*The present invention relates generally to the field of regenerative dentistry and tissue engineering. More specifically, it pertains to a novel biological signal derived from natural dentin for inducing the differentiation of dental pulp stem cells (DPSCs) into odontoblasts, thereby promoting the regeneration of the dentin-pulp complex. This invention offers a natural, cost-effective, and accessible alternative to conventional synthetic growth factors and complex regenerative procedures.*

**Category:**

*M ) Medical Technology - Medical Engineering - Medicine - Hygiene*

DON'T  
OVERTHINK  
IT





# NIPO

National  
Intellectual  
Property  
Office of Sri  
Lanka

Official intellectual  
property office of  
Sri Lanka



PATENT  
APPLICATIONS

## 434

National office total • 2024



GLOBAL  
RANK

## 68<sup>th</sup>

By total patent applications  
at the national office • 2024



PATENTS IN FORCE

## 1,007

Latest available  
WIPO figure • 2024



APPLICATIONS BY  
RESIDENTS WORLDWIDE

## 323

Resident-origin patent  
applications filed worldwide • 2024



Capital

Sri Jayawardenepura  
Kotte



Population

21.76M

2025



GDP (Nominal)

US\$108.83B

2025



Patent Office

NIPO



WIPO Member

Yes

Source: WIPO Statistical Country Profile for Sri Lanka, updated 6/2026; WIPO IP Statistics Data Center; World Bank Open Data, Population total 2025; World Bank Open Data, GDP current US\$, 2025; National Intellectual Property Office of Sri Lanka official website.



# Sri Lanka Sri Lanka

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Ampara, Sri Lanka / Post Code: 32350



**Invention ID: LK - 9401**

**Inventor(s):**

Mohamed Macbool Misharif Ahamath

**Invention Title:**

Smart Spectacle System Utilizing Artificial Intelligence for Visually Impaired Persons

**Invention Description:**

AI-powered smart spectacles that provide object detection, currency recognition, OCR text reading, GPS navigation, and multilingual voice assistance for visually impaired users.

**Category:**

N ) Hardware - Software - Cybersecurity - Blockchain - Internet of things (IoT)

TAIWAN  
INTELLECTUAL  
PROPERTY OFFICE

TIPO

Intellectual property  
office under the  
Ministry of Economic  
Affairs



# TAIWAN

Taiwan Intellectual Property Office

Taiwan has a mature innovation economy built on advanced manufacturing, semiconductors, electronics, ICT, precision engineering, and strong private-sector R&D. Patent activity at TIPO remained stable in 2024, with 50,823 invention patent applications. Domestic applicants remained the largest single origin group with 19,586 invention filings, while Japan, the United States, Mainland China, and the Republic of Korea were major non-resident origins. Semiconductors were the leading technical field in Taiwan, while the broader ecosystem is reinforced by export-oriented industry, research institutions, and a strong culture of technological commercialization.

PATENT  
APPLICATIONS

50,823

Invention patent  
applications at TIPO

2024

GLOBAL  
RANK

8<sup>th</sup>

Rank by invention patent  
applications received at the office

2024

RESIDENT  
FILINGS

19,586

Invention patent applications filed  
by domestic applicants at TIPO

2024



Capital

Taipei



Population

23.25M  
(Latest official indicator)



GDP (Nominal)

US\$976.7B



Patent Office

TIPO



Currency

TWD

Source: Taiwan Intellectual Property Office, Statistics Report on Patent and Trademark Applications in 2024 and 2024 Annual Report; WIPO World Intellectual Property Indicators 2025 and patent statistics materials; National Statistics, Republic of China (Taiwan), latest population indicator; IMF DataMapper, nominal GDP current prices 2025.



# Taiwan<sup>(ROC)</sup>

## Taiwan

Taiwan Invention Association (TIA)

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Dist., 241608 New Taipei City, Taiwan (ROC)



**Invention ID: TW - 88601**

**Inventor(s):**

Min Di, Ching-Han Yang, Li-Wei Kuo, Ti-Hung Ku, Yu-Wei Yang, Yan-Cheng Ji, Chia-Wei Tsai, Ying-Hsun Lai / Institute for Information Industry / National Taichung University of Science and Technology / National Taitung University

**Invention Title:**

AI Edge-XR Fusion Sphere: AI Edge Computing x XR Immersive Interactive System

**Invention Description:**

AI Edge-XR Fusion Sphere is an AI Edge-driven extended reality fusion multimedia system that integrates hardware, software, and generative AI technology to deliver a multimedia fusion service for diverse exhibition events and educational applications.

**Category:**

N ) Hardware - Software - Cybersecurity - Blockchain - Internet of things (IoT)



**Invention ID: TW - 88602**

**Inventor(s):**

Min Di, Ching-Han Yang, Li-Wei Kuo, Ti-Hung Ku, Sheng-Hui Ko, Chin-Feng Lai, Shih-Yeh Chen, Ying-Hsun Lai / Institute for Information Industry / KENMEC Mechanical Engineering Co., Ltd / National Cheng Kung University / National Taitung University

**Invention Title:**

Mixed Reality Industrial Assembly Collaboration System with AI Glasses

**Invention Description:**

This invention is an AI software system for industrial assembly collaboration that integrates with smart glasses to achieve mixed reality (MR) technology. This system employs smart glasses with MR technology, combined with AI recognition and collaboration from experienced personnel.

**Category:**

N ) Hardware - Software - Cybersecurity - Blockchain - Internet of things (IoT)



**Invention ID: TW - 88603**

**Inventor(s):**

Tien-Hong Chang / Lytone Enterprise, Inc.

**Invention Title:**

Lactobacillus paracasei strain LT12 as immunity regulatory agent.

**Invention Description:**

The core of this technology is our independently developed and isolated probiotic strain, Lactobacillus paracasei LT12. Patented for its remarkable immune-regulatory mechanisms, LT12 effectively modulates cytokine secretion to enhance immune defense.

**Category:**

Q ) Paramedical - Health - Foodstuffs - Drinks - Cosmetics

**Invention ID: TW - 88604****Inventor(s):**

Tien-Hong Chang / Lytone Enterprise, Inc.

**Invention Title:**

Innovative Formula for Effectively Relieving Muscle Cramps and Discomfort

**Invention Description:**

We discovered an innovative composition effectively designed to alleviate muscle cramps caused by exercise or nocturnal events, significantly reducing cramp frequency, pain intensity, and duration.

**Category:**

Q ) Paramedical - Health - Foodstuffs - Drinks - Cosmetics

**Invention ID: TW - 88605****Inventor(s):**

Tsung-Hsin Lin, Chia-Ling Lin, Yu-Xuan Wu, Tsung-Jen Su, Yao-Ren Li, Shang-Hua Yang, Yu-Ching Kang, Yi-Li Lin / Lung-hwa University of Science and Technology

**Invention Title:**

Copper Alloy Coatings for Semiconductor Manufacturing

**Invention Description:**

This invention provides a method for preparing copper-rhodium coatings. Furthermore, depending on the total number of atoms in the copper-rhodium plating layer, the rhodium content ranges from 0.2 to 1.5 at%. Copper-rhodium plating layers prepared by the aforementioned method possess low resistivity and high stability.

**Category:**

C ) Building - Architecture - Civil Engineering - Construction - Materials - Woodwork

**Invention ID: TW - 88606****Inventor(s):**

Chui-Ping Hu, Jung-Hui Yen, Chen-Ying Chiang, Robert David Suhr, Chun-Tai Yen / Baichao Greenergy Tech. Co., Ltd.

**Invention Title:**

Cross-Domain Data Analyzer: Multimodal Signal Fusion & Matching Platform for Pre-Test Research

**Invention Description:**

Operating offline, it employs an innovative "acoustic trigger timing mechanism" to synchronize audio spectra with skin micro-current signals, eliminating transmission delays and observational bias while ensuring maximum data privacy.

**Category:**

N ) Hardware - Software - Cybersecurity - Blockchain - Internet of things (IoT)

**Invention ID: TW - 88607****Inventor(s):**

Chui-Ping Hu, Jung-Hui Yen, Chen-Ying Chiang, Robert David Suhr, Chun-Tai Yen / Baichao Greenergy Tech. Co., Ltd.

**Invention Title:**

LSF Intelligent Cross-Domain Pre-Test System

**Invention Description:**

The LSF Intelligent Pre-Test System breaks the traditional requirement of taking medicine before evaluating effects. It captures voice, image, or skin micro-current signals and compares them with over 800 specially processed herbal image modules.

**Category:**

Q ) Paramedical - Health - Foodstuffs - Drinks - Cosmetics

**Invention ID: TW - 88608****Inventor(s):**

Shang-Chen Hsieh, Bing-Chen Hsieh, Tang-Chuan Wang, Alexander Hsieh, Shih-Huan Chen, You-Cheng Yu, Sung-Huai Hsieh / Yujing Vision System Inc.

**Invention Title:**

AI-Powered Multi-Modal RAG Platform for NBI-Based Early Gastric Cancer Detection

**Invention Description:**

This intelligent multimodal platform enhances early gastric cancer detection by integrating AI, medical imaging, and Retrieval-Augmented Generation (RAG). It offers real-time endoscopic analysis, automated lesion detection with heatmaps, and evidence-based diagnostic suggestions from medical literature.

**Category:**

N ) Hardware - Software - Cybersecurity - Blockchain - Internet of things (IoT)

**Invention ID: TW - 88609****Inventor(s):**

Bing-Chen Hsieh, Shang-Chen Hsieh, Tang-Chuan Wang, Alexander Hsieh, Shih-Huan Chen, You-Cheng Yu, Sung-Huai Hsieh / Yujing Vision System Inc.

**Invention Title:**

Real-Time AI Audio Monitoring System for Low-Cost Sleep Apnea Detection

**Invention Description:**

This non-invasive AI system offers a cost-effective alternative to complex hospital-based polysomnography (PSG) for sleep apnea detection. By employing a CNN-LSTM hybrid model, it processes real-time audio data converted into Mel-spectrograms to predict symptoms continuously.

**Category:**

N ) Hardware - Software - Cybersecurity - Blockchain - Internet of things (IoT)

**Invention ID: TW - 88610****Inventor(s):**

Tsung-Lung Yang / Cotron Corporation

**Invention Title:**

Brainwaves induction earphone

**Invention Description:**

Innovation: We find that the pure tone let people reduce sensation and the frequency-difference to trig brainwaves vary from people to people. We use music(multi-tones) and sweep frequency-difference to replace pure tone and fixed frequency-difference. Finally, the brainwaves can be always evoked.

**Category:**

Q ) Paramedical - Health - Foodstuffs - Drinks - Cosmetics

**Invention ID: TW - 88611****Inventor(s):**

Ching-Tzu Huang, Jin-Shan Huang, Chin-Chun Huang / JHENHE Co., Ltd.

**Invention Title:**

Fully Personalized Height-Adjustable Pillow

**Invention Description:**

This pillow features zones for both back and side sleeping, with adjustable comfort to fit individual body types, offering over 300 size options for the most comfortable sleeping position. Made from high-heat-dissipation, hydrophilic memory foam, it includes fully perforated ventilation holes and heat-conducting channels to stay cool and comfortable.

**Category:**

Q ) Paramedical - Health - Foodstuffs - Drinks - Cosmetics



**Invention ID: Youth Innovation Olympiad / TW - 88612**

**Inventor(s):**

Vicky Shen / Sierra Canyon School

**Invention Title:**

ECOSPHERE

**Invention Description:**

An Interactive Rainforest Terrarium + Educational App for Children A living architectural micro-environment designed to reconnect kids with nature.

**Category:**

O ) Teaching Research - Pedagogical Items



**Invention ID: Youth Innovation Olympiad / TW - 88613**

**Inventor(s):**

Monica Li / Arcadia High School

**Invention Title:**

CoNest

**Invention Description:**

CoNest is a connected system that rethinks urban wildlife management through humane design. By combining AI- assisted observation, modular nesting infrastructure, and public education, the project explores how design can shift urban interaction from control toward coexistence.

**Category:**

N ) Hardware - Software - Cybersecurity - Blockchain - Internet of things (IoT)



**Invention ID: Youth Innovation Olympiad / TW - 88614**

**Inventor(s):**

Katherine Yao / Northfield Mount Hermon

**Invention Title:**

Kreyate

**Invention Description:**

Katalyze is a dynamic skincare "printer" to create bespoke skincare formulas on demand. Reimagining beauty routines as a personalised, intuitive experience similar to "cooking in the kitchen", Katalyze replaces static, one-size-fits-all bottled products with a countertop Smart Mixer that creates fresh, single-use formulas on demand.

**Category:**

Q ) Paramedical - Health - Foodstuffs - Drinks - Cosmetics



**Invention ID: Youth Innovation Olympiad / TW - 88615**

**Inventor(s):**

Cindy Huang

**Invention Title:**

Echo Sense

**Invention Description:**

Echo Sense is a connected system that makes environmental noise visible through space. By combining real-time sound sensing, responsive architectural surfaces, and data interpretation, the project transforms invisible sound into light, color, and spatial feedback.

**Category:**

N ) Hardware - Software - Cybersecurity - Blockchain - Internet of things (IoT)

The poster for the Taiwan Innotech Expo features a vibrant, abstract geometric design in blue, green, and yellow. A large white circle in the upper right corner contains the text "Sustainability", "Innovation Economy", and "Future Tech". The event title "tie Taiwan Innotech Expo" is prominently displayed in the center, with "tie" in a stylized blue and yellow font. Below the title, the dates "SEP. 17 - 19, 2026" and the location "TWTC HALL 1" are listed, along with the website "www.InvenTaipei.com.tw". A QR code is positioned to the right of the website information. The bottom section of the poster lists the supervising, hosting, and organizing bodies, including various government ministries and industry associations.

**Sustainability**  
**Innovation Economy**  
**Future Tech**

**tie**  
**Taiwan Innotech Expo**

SEP. 17 - 19, 2026 TWTC HALL 1  
[www.InvenTaipei.com.tw](http://www.InvenTaipei.com.tw)

  
Website

**Supervised by**  
Ministry of Economic Affairs  
National Science and Technology Council  
Ministry of Agriculture  
Ministry of National Defense  
Ministry of Education  
Ministry of Labor  
Ministry of Environment  
Ministry of Health and Welfare  
Ministry of Digital Affairs  
National Development Council  
Academia Sinica

**Hosted by**  
Intellectual Property Office, MOEA  
Industrial Development Administration, MOEA  
Energy Administration, MOEA  
Department of Industrial Technology, MOEA  
Small and Medium Enterprise and Startup Administration, MOEA  
Department of State-owned Enterprise Affairs  
Institute of Labor, Occupational Safety and Health, NIOS  
Resource Coordination Administration

**Organizers**  
Taiwan External Trade Development Council (ETDA)  
Industrial Technology Research Institute (ITRI)

**Co-organizers**  
World Inventions Intellectual Property Association  
Taiwan Inventors Association  
Taiwan International Invention Award Winner's Association  
Taiwan Invention Products Promotion Association  
Chinese Invention & Innovation Society  
The Excellent Inventors Society of The Republic of China  
The Union Association of Taiwan Inventors and Inventors  
Taiwan Fashion Colour Association



**Invention ID: Youth Innovation Olympiad / TW - 88616**

**Inventor(s):**

Tracy Yutong Tang / Concordia International School Shanghai

**Invention Title:**

Inner Projection

**Invention Description:**

Inner Projection is an experimental system that translates human psychological states into dynamic ground-based visual projections. Through a hybrid framework of spatial sensing, generative visuals, and interaction design, the project explores how perception is continuously shaped by external forces and collective environments.

**Category:**

O ) Teaching Research - Pedagogical Items



**Invention ID: Youth Innovation Olympiad / TW - 88617**

**Inventor(s):**

Xie Yi / Interlochen Arts Academy

**Invention Title:**

Vantage Point Deck

**Invention Description:**

A location-based spatial computing platform — a UGC social network for physical space. Four modules form a complete creative loop: discover hidden spatial content, experience it through AR, contribute your own emotional imprint, and build your spatial portfolio.

**Category:**

N ) Hardware - Software - Cybersecurity - Blockchain - Internet of things (IoT)



**Invention ID: Youth Innovation Olympiad / TW - 88618**

**Inventor(s):**

Hui-Han Cheng, Yu-Sheng Huang, Kenneth Hsu / Kaohsiung Municipal Longhua Junior High School / St. Paul's High School

**Invention Title:**

FocusMastery

**Invention Description:**

Focus Mastery: An AI-Powered Gamified Support System is designed for children with ADHD. To reduce the stress often associated with traditional training or therapy, it integrates the Schulte Grid, Whac-A-Mole, memory games, and a task-based virtual pet into an engaging digital experience.

**Category:**

Q ) Paramedical - Health - Foodstuffs - Drinks - Cosmetics



**Invention ID: Youth Innovation Olympiad / TW - 88619**

**Inventor(s):**

Hui-Han Cheng, Kaijing Hsu / Kaohsiung Municipal Longhua Junior High School / Fuhwa Junior High School

**Invention Title:**

Intelligent Hazard Alarm Safety Helmet Management System

**Invention Description:**

It is designed for high-risk environments such as construction sites, sewers, and confined spaces. Unlike traditional helmets that provide only passive impact protection, this system integrates gas detection, temperature and humidity monitoring, ZigBee communication, LED hazard indicators, voice alarms, and a management platform.

**Category:**

E ) Security - Rescue - Alarm



**Invention ID: Youth Innovation Olympiad / TW - 88620**

**Inventor(s):**

Yu-Ting Chien, Pei-Cheng Shih, Yu-Sheng Huang, Mu-Lin Lee / Fuhwa Senior High School ; St. Paul's High School / St.Dominic Catholic High School

**Invention Title:**

VoiceWeaver

**Invention Description:**

An AI-Assisted Multimodal Communication System is designed for people with aphasia who have difficulty forming complete spoken sentences. By turning limited signals into meaningful sentences, VoiceWeaver helps people who struggle to speak regain a more natural way to be heard and understood.

**Category:**

Q ) Paramedical - Health - Foodstuffs - Drinks - Cosmetics



**Invention ID: Youth Innovation Olympiad / TW - 88621**

**Inventor(s):**

Yu-Sheng Huang, Chin-Yu Yang, Chin-Siang Yang, Kenneth Hsu, Jayden Weichieh Chen, Chen-Hsiang Ko, Yin-His Liang, Calvin Yokuan Creekmore / St. Paul's High School ; St.Dominic Catholic High School / Kaohsiung Municipal Cisian Junior High School

**Invention Title:**

AllerDetect GO: An AI-Powered Comprehensive Allergen Detection and Analysis System

**Invention Description:**

AllerDetect GO is a proactive health-protection system designed for children, older adults, and allergy-sensitive users. By integrating detection, warning, recording, and smart-home response, this invention helps users identify allergen risks earlier, reduce accidental exposure, and build a safer daily health-protection network.

**Category:**

Q ) Paramedical - Health - Foodstuffs - Drinks - Cosmetics



**Invention ID: Youth Innovation Olympiad / TW - 88622**

**Inventor(s):**

Yu Hsia, Zhi-Ting Lin, Shih-Chi Lin, Tsu-Hsuan Chao / Kang Chiao International School Linkou Campus

**Invention Title:**

Siphon-Based Micro Hydropower Generator

**Invention Description:**

Our invention uses the power of flowing water and height differences to operate, allowing water to keep moving in an energy-saving and environmentally friendly way. It does not require a large amount of electricity, making it suitable for irrigation systems, water supply in remote areas, and green energy projects.

**Category:**

P ) Energy - Renewable and green energy



**Invention ID: Youth Innovation Olympiad / TW - 88623**

**Inventor(s):**

Zhi-Ting Wang / Kang Chiao International School Linkou Campus

**Invention Title:**

Underwater Feeding System

**Invention Description:**

This project presents an innovative Underwater Eating System that combines a sealed container, one-way valves, and waterproof tubing technology. The system uses air pressure control and airtight structures to allow users to safely consume food underwater while preventing external water from entering the container or helmet.

**Category:**

E ) Security - Rescue - Alarm



#### **Invention ID: Youth Innovation Olympiad / TW - 88624**

##### **Inventor(s):**

Yu-Chi Cheng, Yu-Ming Cheng, Kai-Hsuan Weng / Dong-Guang Junior High School

##### **Invention Title:**

Multi-purpose bionic rescue robot

##### **Invention Description:**

This work incorporates various biological structures and features to address safety issues faced by divers in distress or due to severe weather and low visibility. Its biomimetic design minimizes environmental impact. This work can also be easily applied to other fields. The multi-unit operation mode makes rescue operations more flexible.

##### **Category:**

E ) Security - Rescue - Alarm



#### **Invention ID: Youth Innovation Olympiad / TW - 88625**

##### **Inventor(s):**

Shao-Yung Chou, Yung-Che Tsao, Mu-Cheng Chou / National Lotung Industrial Vocational High School / National Lo-Tung Senior High School / County Shing-Chung Junior High School

##### **Invention Title:**

Smart Monitoring System

##### **Invention Description:**

This system serves as a Smart Monitoring System featuring five core AI functions: Item Search Mode; Security Monitoring Mode; Open Cabinet Alert Mode; Leaving Home Reminder Mode; and an Intelligent assistant that analyzes item placements.

##### **Category:**

N ) Hardware - Software - Cybersecurity - Blockchain - Internet of things (IoT)



#### **Invention ID: Youth Innovation Olympiad / TW - 88626**

##### **Inventor(s):**

Yu-Jen Lin, Bo-Yu Lin / Zhongshan Elementary School / Fu-Shing Junior High School

##### **Invention Title:**

BrellaLink

##### **Invention Description:**

When entering the store, customers place their umbrellas in the stand and receive a dedicated Beacon device to pair the user with their umbrella. If the system detects the user leaving without returning the device or retrieving the umbrella, a buzzer sounds to prevent them from forgetting it.

##### **Category:**

G ) Commercial, Industrial and Office Equipment



#### **Invention ID: Youth Innovation Olympiad / TW - 88627**

##### **Inventor(s):**

An-Yun Liu, Yu-Chieh Hsiao, Phoebe Lee, Yu-Kai Lin, Chia-Hsun Yao, Tsung-Yu Tsai, Allen Pin-Kuan Yeh, Pin-Yi Yeh, Pin-Wei Yeh

##### **Invention Title:**

OmniHabitat

##### **Invention Description:**

"OmniHabitat" is an all-in-one IoT-enabled smart habitat ecosystem designed for amphibians, reptiles, and exotic pets. Addressing the challenges of live-prey feeding, the system introduces a pioneering "Smart Dietary Management" framework.

##### **Category:**

H ) Agriculture - Forestry and Garden - Pet and Farm Animal Supplies



#### **Invention ID: Youth Innovation Olympiad / TW - 88628**

##### **Inventor(s):**

An-Yun Liu, Yu-Chieh Hsiao, Phoebe Lee, Yu-Kai Lin, Chia-Hsun Yao, Tsung-Yu Tsai, Allen Pin-Kuan Yeh, Pin-Yi Yeh, Pin-Wei Yeh

##### **Invention Title:**

Rhythm Racer

##### **Invention Description:**

"Rhythm Racer" is an innovative educational toy designed to tackle the issues of childhood physical inactivity and lack of focus caused by excessive screen time. By combining rhythmic drumming with a remote-controlled vehicle, this device transforms gaming into an active learning experience.

##### **Category:**

L ) Games - Sports - Hobbies



#### **Invention ID: Youth Innovation Olympiad / TW - 88629**

##### **Inventor(s):**

Yu-Cheng Lin, Yi-Li Chen, Kuan-Chen Kuo, Yu-Che Chiang, Jui-Tse Sun, Chien-Hung Tien, Tzu-Hsun Kuang, Hsin-Tung Liu / The Affiliated Senior High School of National Taiwan Normal University

##### **Invention Title:**

Visible Knowledge: An Interdisciplinary Marble-Run STEM Learning Platform

##### **Invention Description:**

This invention uses a marble-run system to transform abstract STEM concepts into a visible, hands-on, and interactive learning experience. It integrates mechanical transmission, magnetic force, gas sensing, electronic control, and AI gesture recognition.

##### **Category:**

O ) Teaching Research - Pedagogical Items



#### **Invention ID: Youth Innovation Olympiad / TW - 88630**

##### **Inventor(s):**

Ting-Wei Hsu / Kang Chiao International School

##### **Invention Title:**

Heat Sensitive Fire Exit

##### **Invention Description:**

This invention uses a special thermochromic organic coating that changes color as the temperature rises. When the ambient temperature exceeds 70°C, the coating turns into a warning color, allowing firefighters or evacuees to visually identify whether there is flame or dangerous heat behind the door.

##### **Category:**

E ) Security - Rescue - Alarm



#### **Invention ID: Youth Innovation Olympiad / TW - 88631**

##### **Inventor(s):**

Ting-Wei Hsu / Kang Chiao International School

##### **Invention Title:**

Novel Artificial Electronic Nose

##### **Invention Description:**

This invention is an intelligent non-contact security screening platform that integrates a real-time air sampling system, Gas Chromatography-Mass Spectrometry (GC-MS), and Artificial Intelligence (AI)-based odor recognition technology. This system can be installed behind airport X-ray baggage inspection equipment.

##### **Category:**

D ) Sanitation - Ventilation - Heating



**Invention ID: Youth Innovation Olympiad / TW - 88632**

**Inventor(s):**

Yi-Feng Kuo, Yi-Lung Kuo / Keelung Municipal Ming Chuan Junior High School / Walnut Grove Secondary School

**Invention Title:**

Infrared type of collision alarm devices

**Invention Description:**

This device is a warning system integrated with infrared sensor technology, specifically designed to prevent secondary collisions after vehicle accidents. Compared with traditional warning triangle signs, this system features included proactive detection and real-time alerts, greatly improving environmental safety around accident area.

**Category:**

E ) Security - Rescue - Alarm



**Invention ID: Youth Innovation Olympiad / TW - 88633**

**Inventor(s):**

Yu-Chia Lei / New Taipei San-Chung Commercial and Industrial Vocational High School

**Invention Title:**

Multi-Function Safety Carton Cutter

**Invention Description:**

Traditional cutters often cause injuries during bulk carton processing. This innovative 3D-printed cutter features a "latch-locking mechanism" for safe blade retraction. It enhances operational safety while enabling precise measuring and dual-direction cutting—perfectly advancing green recycling and the circular economy.

**Category:**

A ) Mechanics - Engines - Machinery - Robotic - Tools - Industrial Process - Metallurgy



**Invention ID: TW - 88634**

**Inventor(s):**

Danny Peng

**Invention Title:**

Radar Assisted Bicycle Safety Deceleration System

**Invention Description:**

A bicycle safety system that combines radar detection, speed monitoring, warning alerts, and a variable resistance wheel to reduce accident risk before emergency braking becomes necessary.

**Category:**

E ) Security - Rescue - Alarm





# THAILAND

Department of Intellectual Property

Ministry of Commerce

## DIP

Department of  
Intellectual Property

Official intellectual property  
office of Thailand

Thailand has a **diversified innovation** base shaped by export-oriented manufacturing, electronics, automotive production, agroindustry, consumer goods, and a **growing health** and life-sciences ecosystem. WIPO data show that Thailand functions both as a domestic market for **intellectual property protection** and as a regional **destination for foreign filings**, with non-resident applications accounting for a large share of patent activity at the national office. In 2024, the Thai office received 8,727 patent applications, while applicants residing in Thailand filed 1,553 patent applications worldwide. WIPO profile data also highlight technical activity in optics, macromolecular chemistry and polymers, electrical machinery and energy, and medical technology.

The Department of Intellectual Property plays a central role in examination, registration, and administration across industrial property rights.

Overall, Thailand's patent profile reflects a maturing IP system that supports industrial upgrading, technology transfer, commercialization, and broader participation in regional innovation networks.



PATENT  
APPLICATIONS

8,727

2024



GLOBAL  
RANK

22<sup>nd</sup>

2024



PATENTS IN  
FORCE

24,635



APPLICATIONS BY  
RESIDENTS WORLDWIDE

1,553

2024

Resident share of national-office patent filings: 10.7% • 2024



Capital

Bangkok



Population

71.62M



GDP (Nominal)

US\$577.0B



Abomination

DIP

Source: WIPO Statistics Country Profile, Thailand, last updated 6/2026;  
WIPO IP Statistics Data Center; World Bank Open Data, Thailand,  
Population total 2025 and GDP current US\$ 2025.

## Thailand Thailand

National Research Council of Thailand (NRCT)

website: [www.nrct.go.th](http://www.nrct.go.th)

Email: [contact@nrct.go.th](mailto:contact@nrct.go.th)

Phone: +66 2561 2445

Address: National Council The Research, Of Thailand  
(NRCT), 196 Paholyotin RD., Chatuchak, Bangkok 10900,  
Thailand



Invention ID: TH - 6601

Inventor(s):

P.Sakulsirirat, J.Patthanavarit, D.Kingphan and S. Ekgasit / Chulalongkorn University

Invention Title:

AiryFeet: Innovation for Foot Hygiene

Invention Description:

AiryFeet invention relates to an antifungal spray for athletes, such as golfers and other sports participants, to help prevent common fungal infections caused by sweat, moisture, and prolonged use of footwear. The spray contains antifungal agents that can be applied to the feet, toes, nails, socks, and shoes to inhibit fungal growth and reduce the risk of conditions such as onychomycosis (fungal nail infection), athlete's foot (tinea pedis), and other superficial fungal skin diseases. Its formulation promotes foot hygiene, comfort, and protection during sports and daily activities.

Category:

D ) Sanitation - Ventilation - Heating



Invention ID: TH - 6602

Inventor(s):

W. Nitipaparnan, V. Vimolchalao, P. Chutima, S. Ekgasit / Chulalongkorn University

Invention Title:

AbleCoach: The Digital Collaboration Platform for Inclusive Workplaces

Invention Description:

AbleCoach is a technical prototype of a digital collaboration platform designed to support workplace coordination among employees with disabilities and organizational stakeholders. The current prototype module is named DCC (Digital Collaboration Coach) under the AbleCoach platform. The system receives role-based user data, work situations, support requests, workplace barriers, and coordination status from employees with disabilities, co-workers, supervisors, HR, and management. Its Rule-Based Coordination Engine processes these inputs against predefined coordination rules to classify issues and generate practical recommendations, such as communication adjustments, assignment to responsible persons, follow-up actions, status monitoring, and escalation alerts.

Category:

B) Electronics - Electricity - Methods of Communication



Invention ID: TH - 6603

Inventor(s):

Pariya Na Nakorn and Booppa Petcharad / Thammasat University

Invention Title:

Aura-P Advanced Nano

Invention Description:

A breakthrough smart nano-cosmeceutical powered by Phellinus linteus extract via innovative ROS-Responsive Nanocarriers. Utilizing smart nano, it triggers active release exclusively upon exposure to pollution and PM2.5 free radicals. This automated, precision-targeted shield maximizes stability and effectively prevents premature 'Urban Aging'

Category:

Q ) Paramedical - Health - Foodstuffs - Drinks - Cosmetics



**Invention ID: TH - 6604**

**Inventor(s):**

A. Klomchit, K. Anan, and D. Athinuwat / Thammasat University

**Invention Title:**

Biological Innovation for Managing Citrus Greening Disease and Reducing Antibiotic Use in Citrus Export Production Systems

**Invention Description:**

Biological Innovation for Managing Citrus Greening Disease and Reducing Antibiotic Use in Citrus Export Production Systems is an eco-friendly solution developed to control citrus greening disease through beneficial microbial technology.

**Category:**

H ) Agriculture - Forestry and Garden - Pet and Farm Animal Supplies



**Invention ID: TH - 6605**

**Inventor(s):**

Sopa Visitsak and Nattaree Sridaranon / Kasetsart University

**Invention Title:**

Natural Ventilation Skydome (100% Direct Radiation Protection)

**Invention Description:**

An innovative roof-mounted solution providing 100% UV-protected indirect daylight and electricity-free ventilation that functions even in windless conditions. It effectively reduces glare, heat, and mold without noise or leakage, while enhancing occupant well-being across all building scales through zero-carbon operation and recyclable materials.

**Category:**

C ) Building - Architecture - Civil Engineering - Construction - Materials - Woodwork



**Invention ID: TH - 6606**

**Inventor(s):**

Daranee Saksiriphol / Srinakharinwirot University

**Invention Title:**

Moral Mind Story Series: A Short Story Collection for Promoting Moral Values and Reading Habits in Children

**Invention Description:**

The "8 Virtue Moral Storybook" (Diligence, Thrift, Honesty, Discipline, Politeness, Cleanliness, Unity, Kindness) aims to help children develop reading skills and essential moral values. Featuring animal characters to represent virtues, using color codes, visual guidance, and QR codes with sign language and Braille children with special needs.

**Category:**

O ) Teaching Research - Pedagogical Items



**Invention ID: TH - 6607**

**Inventor(s):**

Patcharapol Sanpote / Srinakharinwirot University

**Invention Title:**

Magic Box for Special Needs Development

**Invention Description:**

The innovation entitled "Magic Box for Special Needs Development" for Children with Special Needs" was developed as a readiness-training toolkit designed to strengthen fine motor skills, enhance hand-eye coordination, and promote self-help skills in daily living activities.

**Category:**

O ) Teaching Research - Pedagogical Items



**Invention ID: TH - 6608**

**Inventor(s):**

N. Phakdee, P. Sroyetkasem and P. Chaiprasart / Naresuan University

**Invention Title:**

TropiSense AI™

AIoT Autonomous Irrigation and Climate Intelligence Platform for Precision Tropical Fruit Production

**Invention Description:**

TropiSense AI™ is an AIoT platform for precision tropical fruit production that combines smart sensors, AI, and automated irrigation. It optimizes water use, improves fruit quality, reduces labor, and supports climate-smart Agriculture 5.0.

**Category:**

H ) Agriculture - Forestry and Garden - Pet and Farm Animal Supplies



**Invention ID: TH - 6609**

**Inventor(s):**

A. Thongklin, P. Sroyetkasem and P. Chaiprasart / Naresuan University

**Invention Title:**

CocoSense AI: Intelligent

NIR-Based Platform for Precision Harvesting and Export Quality Prediction of Aromatic Coconut

**Invention Description:**

CocoSense AI™ combines NIR spectroscopy and AI to non-destructively predict aromatic coconut maturity and quality in real time. The system enables precise harvesting, improves export quality consistency, reduces postharvest losses, and supports smart agriculture and sustainable tropical fruit supply chains.

**Category:**

H ) Agriculture - Forestry and Garden - Pet and Farm Animal Supplies



**Invention ID: TH - 6610**

**Inventor(s):**

A. Khantachawana, A. Kijitawornrat, S. Thammasirikul, S. Amornthitipong, Y. Sarojakaranun, K. Kanjanataveelap / King Mongkut's University of Technology Thonburi

**Invention Title:**

MEMOs AIRWAY SERIES: Patient-Matched High-Performance NiTi Stent System with Recapturable Delivery System for Canine Tracheal Collapse

**Invention Description:**

Self-expanding NiTi tracheal stent for canine tracheal collapse, with a tapered, recapturable delivery system for minimally invasive placement. Its 9 sizes fit each dog's breed and weight, reducing complications. Validated under ISO 25539-2 and ISO 10993 and clinically proven, it replaces surgery and cuts treatment time more than fourfold.

**Category:**

M ) Medical Technology - Medical Engineering - Medicine - Hygiene



**Invention ID: TH - 6611**

**Inventor(s):**

Krittidet Anan and Dusit Athinuwat / Rajamangala University of Technology Krungthep

**Invention Title:**

Antibacterial Bed Sheets and Pillowcases from Thai Herbs for Elderly and Dependent Care in Nursing Homes

**Invention Description:**

This innovation develops antibacterial bed sheets and pillowcases infused with Thai herbal extracts for elderly and dependent care in nursing homes.

The herbal-treated fabric effectively inhibits the growth of pathogenic bacteria commonly associated with healthcare-associated infections.

**Category:**

Q ) Paramedical - Health - Foodstuffs - Drinks - Cosmetics

**Invention ID: TH - 6612****Inventor(s):**

Wechsawan Lakas / Chiang Mai Rajabhat University

**Invention Title:**

Plastic Waste-Modified Asphalt Model for Sustainable Road Construction

**Invention Description:**

An innovative infrastructure solution incorporating non-commercial plastic bag waste into asphalt cement at a 25% weight ratio. Tested across 4 Thai national parks, it diverts over 30,010 kg of plastic from landfills and improves road stability by up to 30% , offering a scalable model for global circular economy.

**Category:**

C ) Building - Architecture - Civil Engineering - Construction - Materials - Woodwork

**Invention ID: TH - 6613****Inventor(s):**

M. Kuntapa, P. Ninduangdee, S. Chomphutawach, D. Arlai and B. Srianuay / Phetchaburi Rajabhat University

**Invention Title:**

Hybrid Citrate (Hy-CiP): A Waste-Derived Green Surfactant Platform for Energy and Industrial Application

**Invention Description:**

Hy-CiP (Hybrid Citrate Platform) is a green surfactant and bio-based ionic liquid platform developed from agricultural waste, including used palm oil, lime peels, and biomass ash. The innovation enhances biodiesel stability, reduces CO<sub>2</sub> emissions, and supports eco-friendly cleaning products. Hy-CiP integrates Green Chemistry, Circular Economy, ESG, and Blue Ocean Strategy to create sustainable value for energy and industrial applications.

**Category:**

P ) Energy - Renewable and green energy

**Invention ID: TH - 6614****Inventor(s):**

B. Keawaram, T. Boonprakob, J. Sittiyoth, W. Sawasdee, T. Sankumlue and C. Saengchan / Electricity Generating Authority of Thailand (EGAT)

**Invention Title:**

Smart Data Fusion: Enhancing UAV Photogrammetric Point Clouds with Terrestrial Laser Scanning

**Invention Description:**

Process innovation fusing UAV photogrammetry with terrestrial laser scanning to create high-accuracy 3D terrain models for mines without disrupting machinery and operation. This boosts coal production by 10,000 tons/month, adding \$12M over 3.5 years.

It reduces deep-mine exposure to improve safety, and scales to overseas mines.

**Category:**

G ) Commercial, Industrial and Office Equipment

**Invention ID: TH - 6615****Inventor(s):**

T. Sungrai, M. Utsintong, P. Kookasamkij, T. Thaneerat / Department of Thai Traditional and Alternative Medicine

**Invention Title:**

DTAM AlcoDeltaBlock™ Effervescent Tablets: An Innovative Public Health Solution for Alcohol Use Disorder Management

**Invention Description:**

DTAM AlcoDeltaBlock™ transforms a Thai traditional opium addiction treatment recipe into an eco-friendly effervescent tablet with stable dosing and rapid dissolution. Clinical studies showed the 83% success rate in reducing alcohol craving and decreasing AUDIT scores within 2 weeks, no serious adverse events and potential neuroprotective effects.

**Category:**

M ) Medical Technology - Medical Engineering - Medicine - Hygiene

**Invention ID: TH - 6616****Inventor(s):**

Piyada T., Panward J., Patsapong C., Tawatchai T., Niracha E., Ngamnetr E., Sanong E. / LifeQuest Solutions Co., Ltd.

**Invention Title:**

AuraBoost+: AI-Physical Care Ecosystem for Proactive Mental Wellness of Family Caregivers

**Invention Description:**

Caregivers risk becoming secondary patients - yet nothing detects their stress early or connects digital AI to physical relief. AuraBoost+ is the first Hybrid AI ecosystem to bridge both: on-device biosignal detection, AI coaching and journaling, relief networks, and professional expert connection - unified by the Aura Score. A Solution of Hope.

**Category:**

M ) Medical Technology - Medical Engineering - Medicine - Hygiene

**Invention ID: TH - 6617****Inventor(s):**

J. Sengnongban, S. Thammasirikul, P. Rittarwet, A. Khantachawana / Smart MED Group 2019 Co., Ltd with Thai Biomedical Engineering Association

**Invention Title:**

PEAK: A Daily Bone-Support for Targeted Preventive Bone Care

**Invention Description:**

PEAK is an evidence-based bone nutrition platform that combines highly bioavailable nutrients with a clinically designed formulation to optimize calcium absorption and bone mineralization. Its innovative Screening-to-Supplement Loop integrates bone health screening with personalized nutrition, enabling affordable preventive bone care at scale.

**Category:**

Q ) Paramedical - Health - Foodstuffs - Drinks - Cosmetics

**Invention ID: Youth Innovation Olympiad / TH - 6618****Inventor(s):**

A. Petcharat, C. Heangha, K. Anusongsak, V. Donram and T. Charoentia / Princess Chulabhorn Science High School Chon-buri

**Invention Title:**

Development of a Screening System for Detecting Potential Atrial Fibrillation to Estimate Stroke Risk

**Invention Description:**

ThromiSense uses AI and real-time ECG analysis to detect Atrial Fibrillation (AF), a major stroke risk factor. Abnormal heart rhythms can cause blood clots that may travel to the brain and block blood vessels. The system provides accessible early screening, real-time monitoring, and risk alerts for users.

**Category:**

M ) Medical Technology - Medical Engineering - Medicine - Hygiene

**Invention ID: Youth Innovation Olympiad / TH - 6619****Inventor(s):**

Prach Tahnpoonsuk / Harrow International School Bangkok

**Invention Title:**

Asteroid -Music Universe Application on Apple App Store Platform

**Invention Description:**

Asteroid makes music discovery feel human again. Independent artists are buried by algorithms and pay-to-play mechanics — we're fixing that. Upload, live concerts, social interaction. No ads, no artificial reach limits. Just artists, listeners, and the music between them. With this, it creates a community, with small artists getting discovered.

**Category:**

N ) Hardware - Software - Cybersecurity - Blockchain - Internet of things (IoT)



# UNITED ARAB EMIRATES

## Development of Innovation in the Economy and Patents Department

Abbreviation:  
DIEPD

Ministry of Economy & Tourism

Descriptor:  
Official patent  
administration in the United  
Arab Emirates

Location:  
Abu Dhabi



The **United Arab Emirates** combines hydrocarbons wealth with an active diversification agenda. The country has strengthened its innovation ecosystem through investment in advanced manufacturing, logistics, aviation, digital technologies, clean energy, and knowledge-intensive services. While patenting activity remains smaller than in the **world's largest filing economies**, domestic and cross-border activity reflects the UAE's role as an international business and technology gateway connecting markets across the Middle East, Africa, and Asia. The institutional IP framework is managed through the Ministry of Economy & Tourism, which administers patents and industrial property rights. The UAE participates in the international IP system through its membership in the **World Intellectual Property Organization (WIPO)** and its use of global IP services to support innovation and commerce.



PATENT APPLICATIONS  
(NATIONAL OFFICE TOTAL)

3,598



GLOBAL RANK

31<sup>st</sup>



PATENTS IN  
FORCE

4,587



APPLICATIONS BY  
RESIDENTS WORLDWIDE

1,184



Capital

Abu Dhabi



Population

11.5M



GDP (Nominal)

US\$552.32B



Patent Office

DIEPD / Ministry of  
Economy & Tourism



WIPO Membership

Member since 1974

Source: WIPO Statistical Country Profile, United Arab Emirates (latest profile, patent data for 2024); WIPO IP Statistics Data Center; WIPO Country IP Profile; World Bank Open Data (GDP current US\$, 2024; population latest available); UN Data / Official UAE Government platform (capital city).

## United Arab Emirates Emirates

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Phone: +971 56 629 9711  
Address: United Arab Emirates



**Invention ID: Youth Innovation Olympiad / UAE - 97101**

**Inventor(s):**

Ali Humaid Alloghani Al Ali

**Invention Title:**

Smart Astronaut Suit Monitoring System Using AI for Real-Time Health and Radiation Monitoring

**Invention Description:**

A wearable hybrid embedded system (Raspberry Pi 5 + 2x Arduino Nano) that monitors astronaut physiological and environmental conditions in real-time. Uses EMG sensor for muscle activity, Geiger counter for radiation, a display unit for live data, and 4 vibration motors for tactile alerts. Housed in a custom 3D-printed enclosure.

**Category:**

N ) Hardware - Software - Cybersecurity - Blockchain - Internet of things (IoT)



# USPTO

United States  
Patent and Trademark Office

National patent and trademark  
office of the United States.



An agency of the  
U.S. Department of  
Commerce.

## UNITED STATES OF AMERICA

United States Patent and Trademark Office

The U.S. **patent system** is a cornerstone of one of the world's most innovative and **competitive economies**, supporting leadership across digital **technology**, **semiconductors**, **advanced manufacturing**, **pharmaceuticals**, **biotechnology**, **aerospace**, **energy**, and a wide range of **research-intensive industries**. The United States Patent and Trademark Office (USPTO) is among the world's largest patent offices and plays a central role in fostering innovation and protecting intellectual property rights.

The United States remains a leading origin of patent filings worldwide, with U.S. residents filing substantial patent applications at home and abroad. At the same time, the USPTO receives a large volume of applications from non-residents seeking protection in the U.S. market.

Intellectual property rights granted by the USPTO enable commercialization of inventions, attract investment, support the formation and growth of enterprises, and facilitate technology transfer between academia and industry. By safeguarding innovations and research outputs, the USPTO strengthens U.S. economic growth, global competitiveness, and public welfare.



PATENT  
APPLICATIONS

603,194

Total patent applications  
at the national office



GLOBAL RANK



Rank by total patent applications  
at the national office



PATENTS IN FORCE

3,519,879

Patents in force at the  
national office



APPLICATIONS BY  
RESIDENTS WORLDWIDE

503,283

Patent applications filed  
worldwide by U.S. residents



Capital

Washington, D.C.



Population

341.78M



GDP Nominal

US\$30.77T



Patent Office

USPTO



WIPO Membership

Member State

Source: WIPO Statistical Country Profile 2024; WIPO IP Statistics Data Center; USPTO official information; World Bank Open Data, Population total 2025 and GDP current US\$ 2025.



## United Kingdom Kingdom

Amonova Limited

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Road, Oxford, United Kingdom



Invention ID: UK – 4401

Inventor(s):

Dr. Simson Wu

Invention Title:

Regenerative Solar-Driven Air-to-Fertilizer Production Platform

Invention Description:

An Oxford-developed catalytic platform transforming air and water into farm-ready nitrogen fertilizers with tunable composition & concentration, enabling cleaner, cheaper local production and more resilient agriculture.

Category:

P ) Energy - Renewable and green energy



## United States of America

Seikun Design

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USA



Invention ID: US - 101

Inventor(s):

Huan Hsiung Tseng and Kuo-Hung Tseng

Invention Title:

Original Shift System (O.S.S.)

Invention Description:

Universal modular transmission for ICE, EV, and hybrid power. 80% less parts, infinite ratios, unlimited torque, optimized NVH. OEM-ready, lightweight, scalable, faster time-to-market.

Category:

A ) Mechanics - Engines - Machinery - Robotic - Tools - Industrial Process - Metallurgy

# United States of America

**Advanced NanoIntegration / Ruxandra Vidu**  
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**Invention ID: US - 102**

**Inventor(s):**

Ruxandra Vidu, Semenescu Augustin, Ileana Mates

**Invention Title:**

Short Implanted Prosthesis and Method of Making Same

**Invention Description:**

Short femoral orthopedic implant having an axial internal channel of variable length and diameter connected to branched orifices for delivery of the necessary osteo-forming substances.

**Category:**

M ) Medical Technology - Medical Engineering - Medicine - Hygiene



# United States of America

**Marin School**  
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Address: 612 San Gabriel Ave, B, Albany, CA 94706, USA



**Invention ID: Youth Innovation Olympiad / US - 103**

**Inventor(s):**

Antonio Bustos, Nguyen Linh Dan, Nguyen Lam Gia Phuc, Dinh Le Duy

**Invention Title:**

Research on Extracting Collagen from Freshwater Fish Skin, with Nano Curcumin and Gourd Leaves Extract for Burns and Open Wounds Care

**Invention Description:**

This natural preparation heals infected burns and wounds faster by killing drug-resistant bacteria, reducing inflammation, and rebuilding skin to prevent unsightly scarring.

**Category:**

Q ) Paramedical - Health - Foodstuffs - Drinks - Cosmetics

# United States of America

**Ballard High School**  
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**Invention ID: Youth Innovation Olympiad / US - 104**

**Inventor(s):**

Binh Le Bao Phan, Thi Hoang Minh, Doan Minh, Nguyen Tuan Khai, Nguyen Vinh

**Invention Title:**

Application of CAD-CAE Technology in Structural Analysis of Mechanical Components

**Invention Description:**

This study introduces a CAD-CAE and FEM workflow for strength analysis of mechanical components, evaluating stress, deformation, and fatigue life while optimizing design and materials.

**Category:**

A ) Mechanics - Engines - Machinery - Robotic - Tools - Industrial Process - Metallurgy



# United States of America

**Pennsylvania American School**  
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**Invention ID: Youth Innovation Olympiad / US - 105**

**Inventor(s):**

Leah Jade Pham, Nguyen Nhat Nam, Le Nha Zooc Linh Chi, Nguyen Minh Phuong, Vu Dinh Thich

**Invention Title:**

Research on Chemical Composition of Zanthoxylum myriacanthum and its Application in Cancer Treatment

**Invention Description:**

This project explores Nitidine from Z. myriacanthum as a cancer therapy, targeting stem cells via p53 signaling and TRPM2 inhibition to trigger lysosome-dependent cell death.

**Category:**

M ) Medical Technology - Medical Engineering - Medicine - Hygiene

# United States of America

University High School, California  
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Address: 4771 Campus Drive. Irvine, CA 92612, USA



## Invention ID: Youth Innovation Olympiad / US - 106

**Inventor(s):**  
Le Khanh Ngoc, Ly Minh Khoi, Le Ngoc Diem My, Nguyen Lam Vu  
**Invention Title:**

Neural Networks for Financial Time Series Forecasting

### Invention Description:

Financial and economic forecasting is difficult due to many external factors. This paper uses AI model as NNs to predict stock indexes and USD exchange rates, with GRU performing best.

### Category:

G ) Commercial, Industrial and Office Equipment



# United States of America

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## Invention ID: Youth Innovation Olympiad / US - 107

**Inventor(s):**  
Xuanchun Zhou, Fengyu Li, Yanghui Lai, Ziteng Xiao, Eason Sun Li, Hongyu Liao, Zirong Zhou  
**Invention Title:**

SleepEase

### Invention Description:

SleepEase is a lightweight, headband-based sleep aid system that works with a mobile app to help users fall asleep more easily. It delivers personalized sleep music, helps mask outside noise, detects when the user has fallen asleep, and then gradually lowers and stops the audio.

### Category:

Q ) Paramedical - Health - Foodstuffs - Drinks - Cosmetics



## Invention ID: Youth Innovation Olympiad / US - 108

**Inventor(s):**  
Zelin Zhou, Yihuai Zhang, Fengshi Hou, Wenni Li, Ruiping Liu  
**Invention Title:**

EasyGo

### Invention Description:

EasyGo is a vest-style balanced schoolbag system that reimagines the everyday schoolbag. By distributing weight between the front and back, it reduces the strain of traditional backpacks and helps students carry what they need with better posture, balance, and comfort while reducing long-term health risks from heavy schoolbags.

### Category:

Q ) Paramedical - Health - Foodstuffs - Drinks - Cosmetics



## Invention ID: Youth Innovation Olympiad / US - 109

**Inventor(s):**  
Ian Jiang, Allan Jiang, Sumo Chen, Kaiyi Wang, Zeyu Tian, Yue Zhu, Xinzhaoh Gu  
**Invention Title:**

WiseSense

### Invention Description:

WiseSense helps people with visual impairment identify everyday essentials with one touch. By scanning RFID tags on medicine bottles, kitchen containers, cosmetics, and other essential items, it reads aloud stored information such as item names and usage instructions. Simple, reliable, and fully offline, it supports greater daily independence.

### Category:

Q ) Paramedical - Health - Foodstuffs - Drinks - Cosmetics



# United States of America

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## Invention ID: US - 110

**Inventor(s):**  
Oleksandr Brzhezytskyi, Nika Brzhezytska  
**Invention Title:**

Leaf Aura - Modular Fire Prevention and Thermal

### Invention Description:

Modular wildfire protection system using thermal shielding, water and CO2 technologies to radiant heat and ember intrusion for residential structures.

### Category:

E ) Security - Rescue - Alarm

# United States of America America

Dicastal North America Research Branch

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48152, USA



**Invention ID: US - 111**

**Inventor(s):**

Yuling Lang, Shiwen Xu, Qianlong Feng, Xiangqian Ma, Pan Fan, Decai Kong, ShideLi, Peter, Renli Ma

**Invention Title:**

ICME-Based Virtual Development Technology for Lightweight Automotive Aluminum Castings

**Invention Description:**

Developed an AI-enabled cross-scale ICME platform for composition, process and property prediction and forward design of lightweight aluminum alloy castings.

**Category:**

A ) Mechanics - Engines - Machinery - Robotic - Tools - Industrial Process - Metallurgy



# United States of America America

United Inventors Association (UIA)

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20036, USA



**Invention ID: US - 112**

**Inventor(s):**

Manha Saleha / Pequod AI

**Invention Title:**

Pequod AI Trade Tech

**Invention Description:**

Pequod AI is an AI-powered trade operations software platform designed to simplify and coordinate international trade. The software brings together customs rulings, HS classifications, Incoterms, landed cost analysis, freight intelligence, trade documentation, shipment data, and compliance requirements into a single intelligent workspace. By automatically interpreting and connecting information across commercial invoices, packing lists, bills of lading, customs documentation, and logistics updates, Pequod identifies inconsistencies, recommends next actions, and supports operational decision-making. The platform helps coordinate workflows between importers, suppliers, customs brokers, freight forwarders, carriers, and warehouses, reducing manual coordination while improving visibility, compliance, and efficiency throughout the import and export process.

**Category:**

N ) Hardware - Software - Cybersecurity - Blockchain - Internet of things (IoT)



**Invention ID: US - 113****Inventor(s):**

Aisha McCain / Casual Recovery Enterprises

**Invention Title:**

Acoustic Dose Meter

**Invention Description:**

Acoustic Dose Meter is a patented respiratory monitoring device that accurately measures the amount of medication remaining inside a pressurized metered dose inhaler using acoustic sensing technology. Unlike conventional dose counters that estimate remaining doses by counting inhaler actuations, the Acoustic Dose Meter analyzes acoustic wave frequencies within the medication canister to determine medication available, providing patients and healthcare providers with precise, reliable information. The device integrates acoustic sensors, signal processing, a microprocessor, rechargeable power, a digital display, and wireless communication into a compact housing designed to accommodate standard metered dose inhalers. Proprietary algorithms interpret acoustic data to calculate remaining medication, display available doses, and communicate information with connected mobile applications and healthcare platforms for improved medication management and remote monitoring. Designed for individuals living with asthma, COPD, and other chronic respiratory diseases, the Acoustic Dose Meter helps reduce uncertainty, prevent unexpected empty inhalers, and support treatment decisions. By replacing estimation with direct measurement, the technology enhances medication adherence, improves patient confidence, and supports clinical outcomes. The Acoustic Dose Meter establishes a new standard in respiratory care by combining precision sensing, connected health technology, and actionable data to improve patient safety and ensure medications are available when needed most consistently.

**Category:**

M ) Medical Technology - Medical Engineering - Medicine - Hygiene

**Invention ID: US - 114****Inventor(s):**

Aisha McCain / Casual Recovery Enterprises

**Invention Title:**

Everyday Hero app/software platform

**Invention Description:**

Everyday Hero is a patented digital emergency response platform that transforms emergency medications into connected safety ecosystems, extending protection beyond the medication itself. Designed to integrate with connected medical devices, the platform bridges the critical gap between recognizing a medical emergency and receiving life saving assistance. Using intelligent mobile technology, Everyday Hero helps users locate emergency medications, activate emergency alerts, share real time GPS location, notify designated caregivers, and support faster emergency response. The platform is designed to reduce delays in accessing treatment while improving communication, coordination, and situational awareness during time critical medical events. Everyday Hero is compatible with rescue inhalers for asthma and COPD, epinephrine auto injectors, naloxone devices, glucagon emergency devices, and other emergency medications. Its flexible architecture enables integration with connected medical devices, healthcare systems, caregivers, and future digital health technologies, creating a scalable platform that evolves with advances in emergency care. More than a mobile application, Everyday Hero is the intelligence powering the connected emergency response experience. By combining digital health, emergency communication, and location based technology, the platform empowers patients, caregivers, healthcare providers, and first responders with information to act faster, improve outcomes, and help save lives when every second counts.

**Category:**

M ) Medical Technology - Medical Engineering - Medicine - Hygiene

**Invention ID: US - 115****Inventor(s):**

Aisha McCain / Casual Recovery Enterprises

**Invention Title:**

Electronic Material Sleeve for Medical Devices

**Invention Description:**

Electronic Material Sleeve for Medical Devices is a patented connected health platform that transforms existing emergency medications into smarter, more accessible medical devices without altering the medication itself. Designed as an external protective sleeve, the technology integrates wireless communication, embedded electronics, LED lighting, audible alerts, vibration, rechargeable power, location services, and smartphone connectivity into one intelligent system. The platform helps users quickly locate misplaced emergency medications through sound, light, and vibration, reducing delays when treatment is urgently needed. It also supports emergency communication by enabling users to alert designated contacts, share GPS location, and help coordinate a faster response during a medical emergency. The technology is designed for rescue inhalers

used to treat asthma and COPD, epinephrine auto injectors, naloxone devices, glucagon emergency devices, and other emergency medications. As an external accessory, it can be adapted across multiple medications and manufacturers without modifying the drug or delivery system. By combining intelligent hardware with connected digital health technology, Electronic Material Sleeve for Medical Devices enhances accessibility, preparedness, and patient safety. The platform provides a scalable foundation for connected emergency care, helping patients, caregivers, healthcare providers, and first responders improve emergency response, reduce treatment delays, and increase access to life saving care.

**Category:**

M ) Medical Technology - Medical Engineering - Medicine - Hygiene

**Invention ID: US - 116****Inventor(s):**

Sean Hsieh / Sonic Scientific

**Invention Title:**

"Hades", energy modules

**Invention Description:**

The "Sonic Scientific Hades Module" is a compact, high-performance platform designed for advanced laboratory, industrial, and research applications where precision, reliability, and modularity are essential. Built with a rugged and portable architecture, the Hades Module integrates multiple functional components into a single system, allowing users to configure the device for a wide range of testing, monitoring, and process control tasks. Its modular design simplifies maintenance and future upgrades, reducing downtime while extending product lifespan. Engineered for demanding environments, the Hades Module emphasizes stable operation, accurate data acquisition, and efficient power management. It supports rapid deployment in laboratories, pilot production lines, field testing, and quality assurance environments. The compact footprint allows easy transportation and installation without sacrificing performance. Sonic Scientific developed the Hades Module to provide researchers, engineers, and technical professionals with a scalable solution that adapts to evolving project requirements. Whether used for product development, scientific research, equipment validation, or specialized testing, the Hades Module delivers dependable performance, operational flexibility, and professional-grade reliability. Its combination of innovative engineering, modular architecture, and robust construction makes it a valuable solution for organizations seeking efficient and future-ready scientific instrumentation.

**Category:**

B ) Electronics - Electricity - Methods of Communication

**Invention ID: US - 117****Inventor(s):**

Nithya Tammana / Save Drop

**Invention Title:**

Bio Layer

**Invention Description:**

BioLayer is a nature-inspired, four-layer water filtration system designed to reduce lead and other contaminants in school drinking fountains - built entirely from natural materials for under \$38, with no electricity and no plastic waste. Invented by Nithya Tammana, an 11 year-old water conservation advocate from New Jersey, BioLayer uses four sequential filtration layers: pebbles to remove large debris, sand to trap fine particles, activated charcoal to remove chemicals, and live Sphagnum moss - the key innovation - which naturally helps reduce lead levels in water. In testing conducted on World Water Day 2026, BioLayer reduced lead concentration from 50 parts per million - over 3,000 times above the EPA action level - to non-detectable levels across three rounds of filtration. BioLayer's effectiveness is supported by published peer-reviewed research on Sphagnum moss as a natural heavy-metal adsorbent. BioLayer is designed for global scalability - the natural materials are available in most countries, assembly requires no tools or electricity, and the total cost is under \$38. It is currently undergoing independent trials led by five student co-scientists across multiple sites. Because every child deserves clean water.

**Category:**

D ) Sanitation - Ventilation - Heating

**Invention ID: US - 118****Inventor(s):**

Bao Tran / Power Patent Inc.

**Invention Title:**

AI Based Patenting System

**Invention Description:**

We have a solution that takes an idea and create a full 50-page non provisional application

**Category:**

N ) Hardware - Software - Cybersecurity - Blockchain - Internet of things (IoT)

**Invention ID: US - 119****Inventor(s):**

Leotora Watson / Computerized Digital Resources

**Invention Title:**

Computerized Digital Remote Device

**Invention Description:**

CDRD (Computerized Digital Remote Device) is an innovative, next-generation smart technology platform designed to simplify how people work, communicate, learn, and enjoy entertainment from virtually anywhere. Combining the capabilities of multiple everyday devices into one advanced system, CDRD is envisioned to integrate computing, communication, streaming, artificial intelligence, and interactive display technologies within a single portable solution. Designed for professionals, entrepreneurs, students, educators, travelers, businesses, and families, CDRD aims to deliver a seamless digital experience through a user-friendly interface, expandable functionality, and future-ready technology. CDRD represents a bold step toward redefining digital convenience by bringing powerful technology together into one intelligent device designed for tomorrow's world.

**Category:**

B ) Electronics - Electricity - Methods of Communication

**Invention ID: US - 120****Inventor(s):**

Coach Rick Gamboa / Platos Pro LLC

**Invention Title:**

Sultan of Swing

**Invention Description:**

A portable baseball/softball batting training device. Requires no tools, opens and closes in seconds. Provides maximum hits, in minimal times

**Category:**

L ) Games - Sports - Hobbies

**Invention ID: US - 121****Inventor(s):**

John Ickes / Pine Hollow General Repair LLC

**Invention Title:**

Solar Shade Mitigation Systems and Devices

**Invention Description:**

Device reduces hotspot related solar panel fires by 99%, instant-off first responder cutoff switch, eliminates blocking diode increasing output power and eliminating blocking diode back drain. Increases solar module and equipment lifespan.

**Category:**

P ) Energy - Renewable and green energy

**Invention ID: US - 122****Inventor(s):**

Danielle Canter / Sanctuary Sleep Co

**Invention Title:**

Crown Lift Insert Sleep System

**Invention Description:**

Crown Lift Insert System® is a patent-pending head and neck support system designed to restore support inside any standard pillow. Unlike traditional pillows that collapse through the night, Crown Lift works by adding customizable support beneath the pillow surface to help reduce "head drop," maintain head and neck positioning, and improve overall sleep comfort. The system includes interchangeable support inserts of varying heights, allowing users to personalize support based on sleep position, pillow type, and comfort preference. Crown Lift was created after the inventor's own cervical spine challenges highlighted a gap in existing pillow support solutions. Designed to work with existing pillows rather than replace them, Crown Lift offers a simple, adaptable approach to improving nighttime support and sleep quality.

**Category:**

M ) Medical Technology - Medical Engineering - Medicine - Hygiene

**Invention ID: US - 123****Inventor(s):**

Vishan Thimmukonda Varunkumar

**Invention Title:**

Snow Barrier

**Invention Description:**

Snow Barrier is a protective mesh cover designed to fit over a vehicle, helping prevent snow accumulation during heavy winter snowfall.

**Category:**

G ) Commercial, Industrial and Office Equipment

**Invention ID: US - 124****Inventor(s):**

Shree Sabbineni

**Invention Title:**

CalmSync

**Invention Description:**

Calm Sync is a wearable system designed to help athletes detect and manage performance anxiety in real time.

The device continuously monitors physiological signals associated with stress and calculates an anxiety index that represents the athlete's current stress level.

When anxiety levels rise, Calm Sync provides immediate feedback through a connected mobile app, helping the athlete relax and regain focus before their performance is affected.

**Category:**

L ) Games - Sports - Hobbies



#### **Invention ID: US - 125**

##### **Inventor(s):**

Christopher Huang

##### **Invention Title:**

CT Hand

##### **Invention Description:**

The CT Hand is a fully mechanical spring-actuated proximal prosthetic made for the e-NABLE organization, whose members design and distribute prosthetics to those in need all around the world. The hand itself fills a gap within current designs, as the existing e-NABLE catalog of hands does not include any prosthetic designs that are particularly effective at mimicking the gripping power of real human fingers. Most e-NABLE catalog designs are also made for maximising manufacturing simplicity and mechanical durability. While the CT Hand does cost relatively more to make than standard designs, its enhanced grip and durability (since it's made entirely of mechanical parts) makes it especially viable to be distributed and used long-term by people in need of proximal prosthetics. Beyond just this organization, the CT Hand expands on standard cable driven hands in mechatronics through chain actuation, where metal linkages combined with an adjustable frame provide significantly more dexterity and grip strength. The hand is able to contract through wrist contractions and splay the fingers outwards through parallel wrist movements. The hand can be made with both machined aluminum or 3D printed with PLA plastic.

##### **Category:**

M ) Medical Technology - Medical Engineering - Medicine - Hygiene



#### **Invention ID: US - 126**

##### **Inventor(s):**

Aarav Patel

##### **Invention Title:**

Press to Express

##### **Invention Description:**

Press to Express is a device that allows those with osteoarthritis, which is a degenerative joint disease to write and draw without having to grip a pencil or a pen. It features an ergonomic mouse-like body allowing users to comfortably rest their hands on the shell as well as an adjustable holder to decrease or increase the pen holder size as needed.

##### **Category:**

M ) Medical Technology - Medical Engineering - Medicine - Hygiene



#### **Invention ID: US - 127**

##### **Inventor(s):**

Shiven Balaj

##### **Invention Title:**

Chess Adventures

##### **Invention Description:**

Chess Adventures is a 6 book curriculum that takes the child from their first steps in chess all the way to playing in their first tournament and is geared towards children aged 4-12. Each book is made to walk the child through the world of chess at different levels in an easy manner. No dense text, no difficult language. The most elementary book is our best seller, and has been achieved the #1 New Release on Amazon. It is made for the extremely young kids, and retains their attention with an innovative process: treating chess as a videogame. Examples include allowing the child to interact with a guide, allowing them "secret levels" (coloring pages, mazes, etc), and eventually defeat the boss (learn how to checkmate). This creative book is also the first of its kind on Amazon. The two other learning books are designed for older kids, but still ensure the child is learning with visuals and isn't stuck there reading boring, dense chess textbooks. The last 3 books are designed for when the child is playing the game. Written by Shiven Balaji, California State Chess Champion and a chess enthusiast, this workbook is perfect for your budding chess pro.

##### **Category:**

O ) Teaching Research - Pedagogical Items

**Invention ID: US - 128****Inventor(s):**

Arjun Balaji

**Invention Title:**

Honeycomb Hugs Organic Lotion Bars

**Invention Description:**

HoneyComb Hugs are organic lotion bars that come in 3 kid-pleasing fragrance. They're packed with nourishing ingredients like shea butter and coconut oil, perfect for keeping your kid's delicate skin soft and healthy. Here's what makes HoneyCombs Hugs a hit with kids and parents: No More Mess: Ditch the greasy lotions and messy spills! Our solid bars are easy for little hands to use. Gentle and Safe: Made with organic ingredients and free of harsh chemicals, our lotion bars are perfect for sensitive skin. On-the-Go Perfect: These compact bars fit easily in backpacks, or pockets for convenient moisturizing anywhere.

**Category:**

Q ) Paramedical - Health - Foodstuffs - Drinks - Cosmetics

**Invention ID: US - 129****Inventor(s):**

Rayna Borah

**Invention Title:**

Seos

**Invention Description:**

SEOS (Smart Early Observation System) is a multimodal AI clinical decision-support platform that turns a smartphone into a diagnostic sensor fusing computer vision, infant-cry/cough audio analysis, and genomic risk markers with multi-agent LLM reasoning to produce an explainable, ranked differential diagnosis.

**Category:**

M ) Medical Technology - Medical Engineering - Medicine - Hygiene

**Invention ID: US - 130****Inventor(s):**

Aniket Sarkar

**Invention Title:**

woundSNAP: Scanning Networking AI-powered Platform

**Invention Description:**

Wounds are dangerous yet common in the United States. However, access to information and linkage to care are often delayed, especially in remote and field-deployed locations. A real-time analysis of a wound with connection to care is necessary. woundSNAP utilizes an image recognition pipeline to detect and analyze a wound for wound type, severity, and infection risk. Once the wound is analyzed, the information is given to the user along with accommodations for the patient's medical conditions and wound locations on the body. The custom-trained models and original pipeline were trained/coded in Python and are currently transformed into an iOS app prototype- the algorithm is accessible and works offline. Moreover, a spectroscopy system was prototyped for use alongside the app. It utilizes a multispectral sensor to scan a wound, send data to device, and the app runs a Machine Learning data analysis to predict wound depth- critical for understanding accurate wound severity. Professionals in the medical field reviewed the software. woundSNAP is highly applicable for emergencies and military field deployments to aid in assessing wounds and connecting with care rapidly, thereby improving patient outcomes.

**Category:**

M ) Medical Technology - Medical Engineering - Medicine - Hygiene

**Invention ID: US - 131****Inventor(s):**

Nicole Haragutchi / Sustainable Technology Solutions LLC

**Invention Title:**

Water Condenser and Monitor System

**Invention Description:**

The world is losing freshwater at an accelerating rate due to climate change-driven evaporation and prolonged droughts. The Water Condenser and Monitor System addresses this crisis with a modular, solar-powered, floating platform that simultaneously prevents evaporation, harvests atmospheric water via condensation, and monitors water quality in real time protecting both human consumption and local biodiversity.

**Category:**

B ) Electronics - Electricity - Methods of Communication

**Invention ID: Youth Innovation Olympiad / US - 132****Inventor(s):**

Prue Gonzales / J and G Photobooth

**Invention Title:**

Conver-leggings

**Invention Description:**

The first convertible athletic tights designed with volleyball athletes in mind. Stop packing two outfits for every practice. Our innovative performance tights convert into fitted athletic shorts, allowing athletes to adapt instantly to changing temperatures during training and competition. Wear the full-length tights for warm-ups, travel, or cooler conditions, then quickly convert them into shorts when it's time to play. Designed specifically for volleyball players, this versatile garment offers the comfort, flexibility, and performance athletes need without compromising style or mobility. Beyond convenience, it is also a more sustainable choice. Instead of purchasing separate leggings and compression shorts, athletes invest in one high-performance garment that serves both purposes. Fewer products, less waste, and greater value. One garment. Two ways to wear it. Built for performance, designed for changing conditions.

**Category:**

L ) Games - Sports - Hobbies

**Invention ID: Youth Innovation Olympiad / US - 133****Inventor(s):**

Aiesha Ogana

**Invention Title:**

Good Thoughts Machine

**Invention Description:**

Good Thoughts Machine is a machine that acts like a vending machine, it contains good messages to encourage positivity. It can be very helpful when having a rough time.

**Category:**

Q ) Paramedical - Health - Foodstuffs - Drinks - Cosmetics

**Invention ID: Youth Innovation Olympiad / US - 134****Inventor(s):**

Jacqueline Wang

**Invention Title:**

RoboSnake

**Invention Description:**

RoboSnake is an autonomous, eco-friendly robotic wildlife deterrent designed to protect property and keep residential areas free of rodents without the use of dangerous chemical poisons or traps.

**Category:**

A ) Mechanics - Engines - Machinery - Robotic - Tools - Industrial Process - Metallurgy



**Invention ID: Youth Innovation Olympiad / US - 135**

**Inventor(s):**

Henry Carlson

**Invention Title:**

Grip 'N' Slip 2.0

**Invention Description:**

A collapsible hanger with a spring-loaded hinge that lets you easily slip off a shirt and it springs back.

**Category:**

F ) Housekeeping - Nutrition



**Invention ID: Youth Innovation Olympiad / US - 136**

**Inventor(s):**

Mansi Jain and Jinesh Jain

**Invention Title:**

Virtual Lifeguard: Real-Time Drowning Detection App Using Mobile Computer Vision

**Invention Description:**

Virtual Lifeguard is an innovative, decentralized mobile application that transforms consumer smartphones into automated edge-AI monitoring tools to mitigate unintentional drowning. Addressing the biological limitations of human attention, such as vigilance decrement, and the high financial barriers of commercial safety systems, this research presents a sophisticated, real-time computer vision pipeline optimized for mobile edge infrastructure. Unlike conventional static models, the proposed architecture implements a hybrid framework combining YOLOv11 for robust spatial tracking of swimmers with an R(2+1)D Convolutional Neural Network to analyze temporal motion signatures. To resolve the critical challenge of data scarcity, the system utilizes a One-Class Support Vector Machine trained exclusively on normal swimming data to construct a mathematical baseline and isolate drowning anomalies. Emphasizing a strict Privacy by Design philosophy, the models undergo INT8 quantization to achieve sub-second latency on the device's Neural Processing Unit without relying on cloud servers or internet connectivity.

**Category:**

E ) Security - Rescue - Alarm



**Invention ID: Youth Innovation Olympiad / US - 137**

**Inventor(s):**

Aria Saxena

**Invention Title:**

Gummy Guard

**Invention Description:**

Every year in the U.S., roughly 50,000 young children are rushed to the ER for accidental medicine poisoning. Gummy vitamins and supplements look and taste just like candy treats, but a major legal loophole means these bottles aren't legally required to have child-safe caps. To fix this crisis, I talked to a doctor, pediatrician, and pharmacist to invent Gummy Guard a universal safety cap that easily moves from bottle to bottle. Instead of using expensive electronics, Gummy Guard uses pure physics! By combining magnetic force and spring force, it creates a secure lock that is impossible for a child's brain to figure out. However, it requires zero physical strength for seniors and grandparents to open, completely replacing painful "push-and-turn" lids. Gummy Guard is ultra-low-cost so every single family can afford it. It completely closes the dangerous supplement loophole, protects kids' curiosity, and gives parents true peace of mind!

**Category:**

M ) Medical Technology - Medical Engineering - Medicine - Hygiene



**Invention ID: Youth Innovation Olympiad / US - 138**

**Inventor(s):**

Myra Saxena

**Invention Title:**

BetaSense

**Invention Description:**

Youth-onset Type 2 Diabetes (T2D) is accelerating globally, yet traditional pediatric screenings rely on costly, invasive blood draws or standard glucose tests that miss early systemic warnings. BetaSense is an ultra-low-cost diagnostic ecosystem designed to catch pediatric metabolic stress before permanent damage occurs. The invention combines a physical hardware stack featuring an optimized micro:bit v2 and an integrated optical sensor with a novel, proprietary machine learning classifier. Unlike standard monitors that track glucose in isolation, BetaSense introduces a multi-modal data pipeline. It mathematically fuses non-invasive, raw optical fluid metrics with input from a crucial immunological inflammatory biomarker: the Neutrophil-to-Lymphocyte Ratio (NLR). By analyzing the intersection of optical fluid density and systemic cellular inflammation markers, BetaSense executes its machine learning model completely locally at the device edge. This eliminates the need for expensive infrastructure or internet connectivity. The final output provides rapid low-cost at a fraction of the cost of clinical labs. BetaSense transforms metabolic screening into an accessible, painless, and highly predictive early-intervention tool for youth worldwide.

**Category:**

M ) Medical Technology - Medical Engineering - Medicine - Hygiene

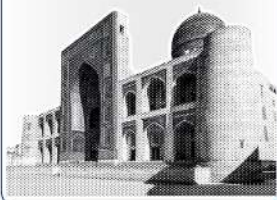


# Republic of Uzbekistan

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## IPA

Intellectual Property  
Agency under the  
Ministry of Justice of  
the Republic of  
Uzbekistan



## UZBEKISTAN

Intellectual Property Agency under the Ministry of Justice  
of the Republic of Uzbekistan

Uzbekistan's intellectual property landscape is developing alongside broader economic modernization and diversification. Patent activity by residents remains modest in global terms, yet national-office filings and patents in force reflect a functioning domestic base and some non-resident interest. Innovation capacity is increasingly evident in areas such as chemicals, food processing, agriculture-related technologies, materials, selected manufacturing activities, and a growing digital economy. Strengthening the commercialization of research, firm-level R&D investment, and international linkages can help deepen patenting performance and technology diffusion. Effective IP administration—supporting protection, disclosure, and the enabling environment for innovators and businesses—plays an important role in sustaining this progress.



Invention ID: UZ - 9981

Inventor(s):

Jamshidbek Shamuratov, Paraxat Matyakubova, Patxulla Ismatullayev

Invention Title:

Vibrational Viscometer for Measuring the Viscosity of Liquid

Invention Description:

A device for measuring liquid viscosity using vibrational principles. It analyzes oscillation frequency and damping changes. Designed for accurate, stable, and rapid measurements.

Category:

A ) Mechanics - Engines - Machinery - Robotic - Tools - Industrial Process - Metallurgy



PATENT  
APPLICATIONS

### 758

Total applications  
at national IP office

2024



GLOBAL  
RANK

### 59<sup>th</sup>

By total patent applications  
at the national IP office

2024



PATENTS IN  
FORCE

### 1,255

Active patents in force

2024



APPLICATIONS BY  
RESIDENTS WORLDWIDE

### 526

Resident-origin patent  
applications filed worldwide

2024



Capital

Tashkent



Population

37.05M

2025



GDN (Nominal)

US\$147.04B

2025



Patent Office  
Intellectual  
Property Agency



WIPO Membership

Member State



# VIETNAM

Intellectual Property Office of VietNam

VietNam

Intellectual Property  
Office of Viet Nam



Vietnam's **patent landscape** reflects a fast-industrializing, export-oriented economy that is expanding its technological capabilities while remaining closely linked to international investment and global value chains. In 2024, the country recorded 9,904 patent applications at its national office, with non-resident filings continuing to represent the majority, underscoring **Vietnam's role as an attractive market** for foreign technology owners. At the same time, resident-origin patenting reached **1,392 applications** worldwide, signaling gradual growth in local inventive activity. **Electronics, transport, digital communication**, measurement, and specialized machinery appear among the leading technical fields in resident patenting. Strong manufacturing performance, rising digital adoption, and continued policy attention to innovation and intellectual property administration support a mature IP environment. As Viet Nam pursues longer-term ambitions in advanced manufacturing, ICT, green industry, and productivity upgrading, the strategic use of patents will remain increasingly important.



PATENT APPLICATIONS

9,904

Total applications at national office • 2024



GLOBAL RANK

20<sup>th</sup>

Potential patent applications at national office • 2024



PATENTS IN FORCE

23,291

Active patents • 2024



APPLICATIONS BY  
RESIDENTS WORLDWIDE

1,392

Resident-origin patent applications worldwide • 2024



Capital

Hanoi



Population

101.6M

2025



GDP (Nominal)

US\$514.7B

2025



Patent Office

IP VietNam



Grant Delay

32.8 months

2024

Source: WIQA Statistical Country Profile 2024, last updated 6/2026.  
WIFO IP Statistics Data Center: World Bank Open Data, Population total 2025 and GDP current US\$ 2025, UN Data, capital city.

## Vietnam

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**Invention ID: VN - 8401**

**Inventor(s):**

Le Quang Dung, Trinh Tai Anh, Nguyen Quoc Hieu Minh, Nguyen Dieu Anh, Nguyen Hoang Dam Thuyen

**Invention Title:**

A Machine Learning and Reinforcement Learning Framework for Dynamic Pricing and Promotion Optimization in Imported Eyewear Retail

**Invention Description:**

This study proposes an AI framework integrating machine learning demand forecasting and reinforcement learning for dynamic pricing and promotion in imported eyewear retail. The model improves pricing decisions, profit, and inventory efficiency, providing a practical and scalable solution for emerging retail markets.

**Category:**

N ) Hardware - Software - Cybersecurity - Blockchain - Internet of things (IoT)



**Invention ID: VN - 8402**

**Inventor(s):**

Le Minh Ngoc, Nguyen Hoang Tung Lam, Nguyen Hoang Ngan Linh

**Invention Title:**

An Explainable CT-Based AI Radiomics Model for Noninvasive EGFR Mutation Prediction in Vietnamese Lung Cancer Patients

**Invention Description:**

This study develops an explainable CT-based AI radiomics model to noninvasively predict EGFR mutations in Vietnamese lung cancer patients. Using tumor and 1-mm peritumoral features, the XGBoost model achieved AUC 0.87, supporting faster treatment decisions and improving access to precision oncology.

**Category:**

M ) Medical Technology - Medical Engineering - Medicine - Hygiene



**Invention ID: VN - 8403**

**Inventor(s):**

Tran Hong Ngoc, Luong Tran Gia Bao, Ha Lam Tuong, Luong Minh Quan, Nguyen Ha Phuong

**Invention Title:**

Formulation of Functional Jelly and Herbal Cough Candy Using Panama Berry, Turmeric, and Fish Mint Leaves

**Invention Description:**

This study developed functional jelly and herbal cough candy using Panama berry, turmeric, and fish mint leaves. By transforming traditional herbal remedies into child-friendly products, the formulation improves acceptance while providing a natural, safe, and convenient approach to support cough relief and children's health.

**Category:**

Q ) Paramedical - Health - Foodstuffs - Drinks - Cosmetics



**Invention ID: VN - 8404**

**Inventor(s):**

Phung Gia Bao, Nguyen Son, Doan Quoc Quan, Pham Ngoc Quyen, Duong Anh Kim

**Invention Title:**

Using Artificial Intelligence for Detecting Urban Green Spaces

**Invention Description:**

This study proposes the application of artificial intelligence for detecting, evaluating, and planning urban green spaces in rapidly developing cities. By utilizing satellite imagery and aerial photographs combined with instance segmentation techniques, the system is capable of automatically identifying and quantifying urban vegetation with high accuracy, enabling the assessment of green-space distribution across districts and residential areas. The research also integrates spatial analysis to identify "green deserts" and recommend potential locations for sustainable architectural solutions such as rooftop gardens and pocket parks. By transforming urban planning from a qualitative approach into a data-driven methodology, the project contributes to environmental management, climate change adaptation, and sustainable urban development, while offering broad applications in smart-city governance and ecological monitoring.

**Category:**

N ) Hardware - Software - Cybersecurity - Blockchain - Internet of things (IoT)



**Invention ID: VN - 8405**

**Inventor(s):**

Dinh Quynh Chi, Ngo Lan Phuong, Nguyen Hai Anh, Nguyen Huong Giang, Nguyen Tuan Kiet

**Invention Title:**

Designing human DNA mismatch primers to Improve Forensic Identification of wild animal-derived bone and horn samples

**Invention Description:**

Illegal wildlife trade poses a significant threat to biodiversity in Southeast Asia, particularly in Vietnam. Forensic DNA analysis is an essential tool for species identification and provides critical evidence in legal proceedings. While conventional universal primers are generally effective for fresh samples, they frequently fail when applied to degraded bone and horn specimens. These samples typically contain very low quantities of endogenous DNA and are often overwhelmed by human DNA contamination, leading to unsuccessful amplification or inaccurate species identification. To overcome this challenge, we developed novel mismatch PCR primer pairs targeting the mitochondrial 16S rRNA region. These primers contain deliberate mismatches with human DNA at the 3' end, allowing preferential amplification of wild animal DNA while substantially reducing human DNA amplification.

**Category:**

M ) Medical Technology - Medical Engineering - Medicine - Hygiene

The poster for the 7th International Invention and Innovation Competition for IFIA INV Title Holders is set against a dark blue background with a subtle grid pattern. At the top, the IFIA logo is displayed, featuring a stylized 'i' and 'f' followed by 'IFIA' and 'Founded 1968' below it. The main title, 'THE 7TH INTERNATIONAL INVENTION AND INNOVATION COMPETITION FOR IFIA INV TITLE HOLDERS', is written in large, bold, white and yellow capital letters. Below the title, the date 'SEPTEMBER 2027' is centered. A row of statistics follows: '50 COUNTRIES' with a globe icon, '1,500 INVENTIONS' with a lightbulb icon, and 'GLOBAL INNOVATORS UNITED FOR A BETTER FUTURE' with a group of people icon. A call to action box states 'Virtual Event Hosted by IFIA, Geneva, Switzerland' with a globe icon. The central image is a glowing globe with city lights, surrounded by a network of lines. At the bottom, there is a 'JOIN THE GLOBAL INNOVATION MOVEMENT' button, the website 'IFIA.com', social media icons for Facebook, LinkedIn, Twitter, YouTube, and Instagram, and a QR code.

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