INNOVATION FRONTIER

NEWSEFFECT

MARCH' 2026

Our Company's Growth &

SUCCESS IN 2025

Our beloved leader - **Dr. Amit Goel** has been recognized & included in the renowned **WIPR - World IP Review** Leaders 2025 Directory, which is a testament to our expertise in the field of IP.

EffectUal Services

Intelligence That Matters

CONTENTS

AI Advancements

NXP Delivers New Innovations for Advanced Physical AI with NVIDIA

Physical AI represents the next stage of innovation, enabling machines - especially humanoid robots - to sense, interpret and interact with their environment in real time, which demands fast, reliable and low-latency data processing. NXP Semiconductors addresses this with integrated robot body solutions that combine edge intelligence and efficient networking. By integrating NVIDIA Holoscan Sensor Bridge, these systems enable seamless, real-time communication between a robot's body and brain, significantly reducing latency and making physical AI more practical and scalable.

Hyland Accelerates Healthcare Innovation with New AI-Powered Solutions on the Content Innovation Cloud

Hyland Software's Hyland Intelligent MedRecords uses AI to automate medical record processing, including document capture, classification and data extraction. It reduces manual work, improves accuracy, speeds up access to patient information & enhances efficiency for clinicians and health information management teams by minimizing delays and errors.

AI Advancements

China promotes AI use in schools with new educational programmes

As a part of this strategy, an intelligent platform and a digital marketplace for AI applications for education were created. In addition, 50 model schools and 32 higher education institutions with the best AI practices were established. Schools are actively using AI tools in classrooms. One of the main goals of this implementation is to help teachers monitor student progress and improve interaction between them.

UNESCO & CENIA strengthen partnership to advance ethical artificial intelligence with a focus on education in Chile and Latin America

The agreement, signed by the Director of the UNESCO Regional Office in Santiago, Esther Kuisch Laroche and the Chief Operating Officer of CENIA, Mónica Soto Pérez, will enable the coordination of initiatives aimed at promoting the development of digital competencies, AI literacy and people-centred AI development models grounded in ethical principles from the outset.

Circles & Huawei Sign Strategic Collaboration to Advance AI-Native Digital Telecom Solutions Globally

The collaboration aims to combine Huawei's robust network and cloud capabilities with Circles' digital BSS vertical SaaS platform to enable telecom operators to accelerate digital transformation, unlock real-time monetization opportunities, and deploy intelligent, AI-driven services at scale.

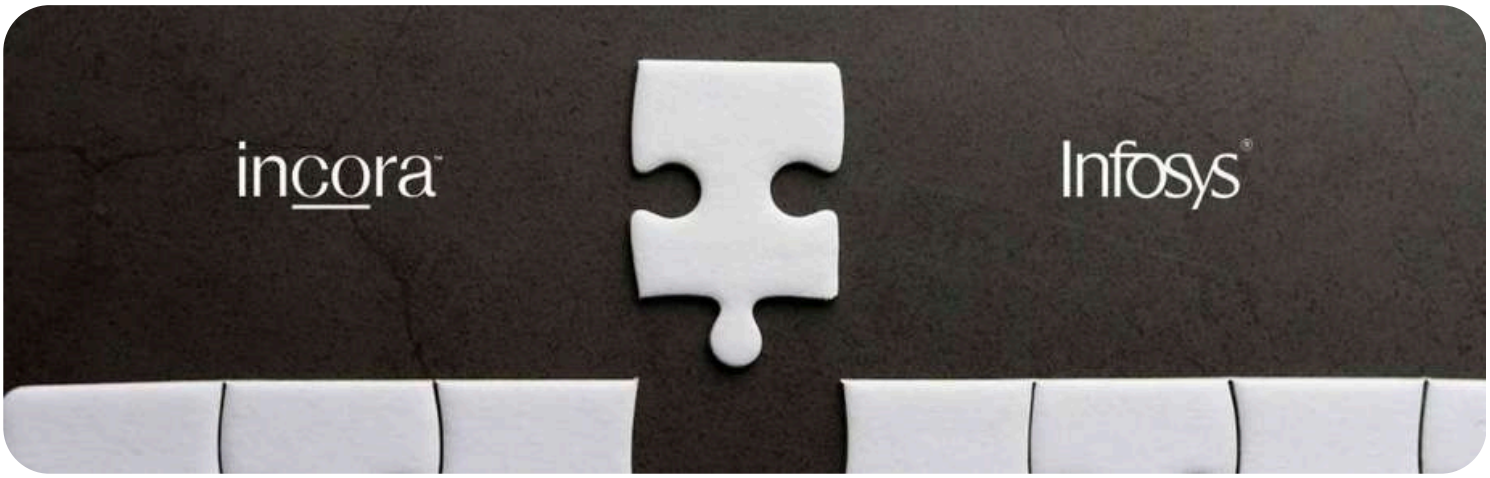
AI Advancements

NVIDIA Launches Nemotron Coalition of Leading Global AI Labs to Advance Open Frontier Models

GTC—NVIDIA today announced the NVIDIA Nemotron Coalition, a global collaboration between open model builders and AI developers advancing frontier open models through shared research, expertise, data and compute — helping accelerate innovation across the global AI ecosystem.

Incora and Infosys Collaborate to Advance AI-Enabled Supply Chain Operations

Through the multi-year alliance, Incora will work closely with Infosys to implement AI-enabled capabilities supporting operations across more than 60 countries. The initiative leverages Infosys Topaz, an AI-first set of services, solutions and platforms using generative AI technologies, including the Infosys EdgeVerve AI Next Platform, to help modernize Incora's supply chain environment by integrating with its existing multi-ERP landscape and enabling greater visibility, accuracy and responsiveness across core operational workflows.

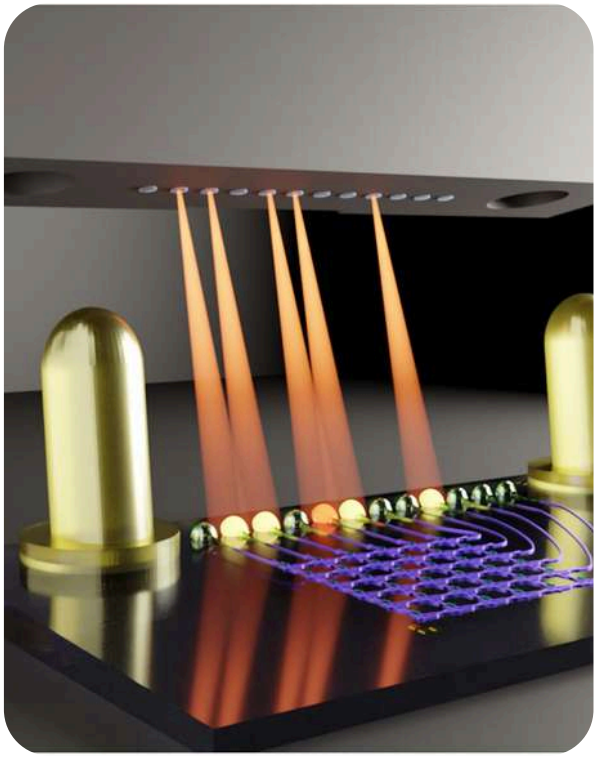


DISRUPTIVE Technologies

Australian scientists achieve energy storage and quantum battery breakthrough

Australian scientists have created the world's first quantum battery that can charge, store & discharge energy like conventional batteries. Using quantum phenomena such as superposition and entanglement, the multi-layered device can be wirelessly charged with a laser, retains energy efficiently & operates at room temperature, paving the way for applications like ultra-fast device or electric-vehicle charging.

KRICT, world's first 4D printing technology using waste sulfur enables self-actuating soft robots

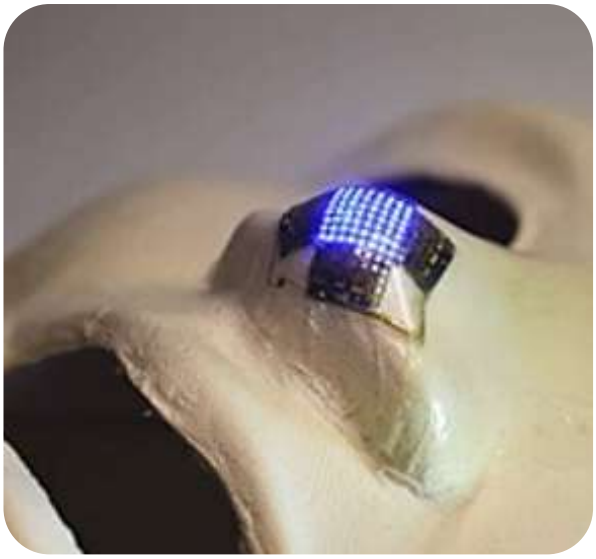


A Korean research team developed a 4D printing method using waste sulfur from petroleum refining to create recyclable, shape-changing structures. By modifying sulfur-rich polymers, they achieved shape-memory behavior, joined parts with a near-infrared laser and created tiny soft robots powered by magnetic particles. The material is fully meltable and reusable, enabling a closed-loop recycling system.

Disruptive Technologies

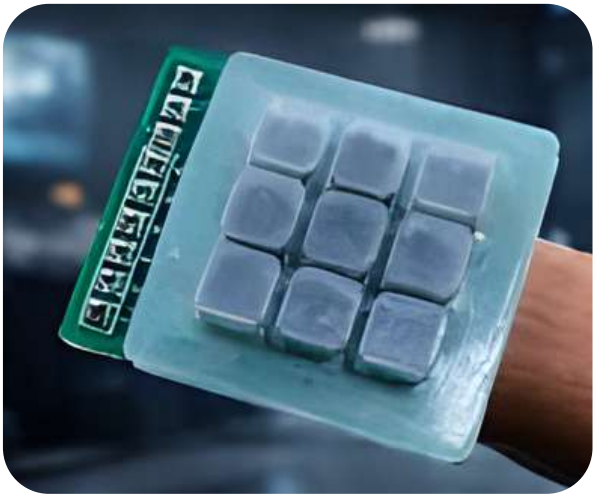
World's First Distortion-Free Stretchable Micro-LED Meta-Display Technology

Researchers at the Korea Institute of Machinery and Materials developed the world's first stretchable micro-LED meta-display that can stretch up to 25% without image distortion. Using mechanical metamaterials with a negative Poisson's ratio, the 3-inch display widens proportionally when pulled, unlike traditional stretchable materials, keeping visuals intact.



Breakthrough Sodium-Ion Battery Doubles Energy Capacity & Enables Seawater Desalination

Researchers at the University of Surrey developed a sodium-ion battery with a hydrated cathode that nearly doubles energy storage, charges faster & remains stable over hundreds of cycles. Keeping water in the cathode improves performance & the battery can operate in seawater, removing salt ions while storing energy, offering a low-cost, dual-function solution for clean energy and water desalination.



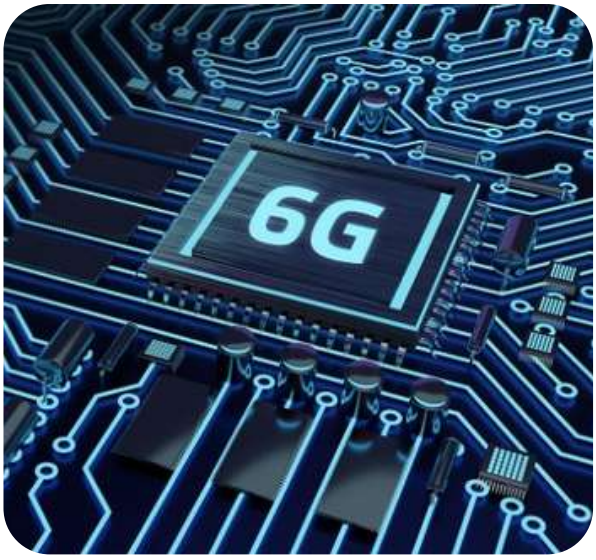
India Creates Artificial Skin for Robots: Breakthrough Sensor Technology Strengthens India's Defence and Robotics Capabilities

Indian defence researchers at DRDO and DIAT have developed tactile sensor arrays that function like artificial skin for robots. These flexible sensors enable robots to sense touch, pressure and texture, enhancing grasping, touch feedback and safe human-robot interaction, marking a major step in India's push for advanced indigenous robotics.

Disruptive Technologies

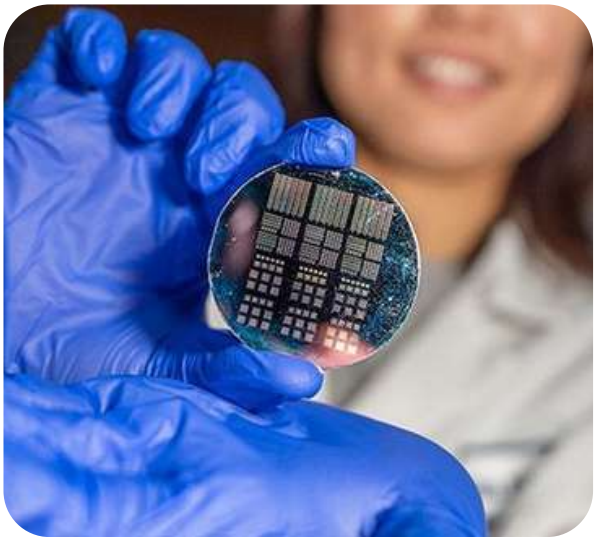
Ericsson leads the 6G journey toward an intelligent fabric at MWC 2026

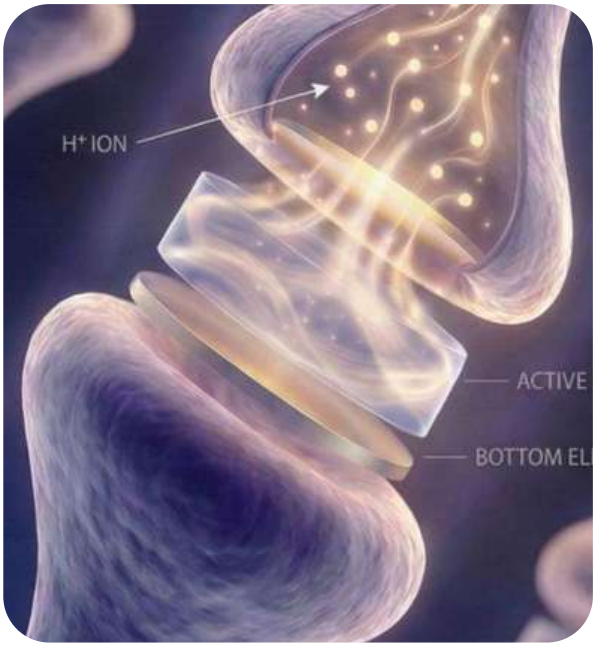
Ericsson showcased its 6G advancements at MWC Barcelona 2026, highlighting progress in foundational technologies, AI-integrated networks and industry collaboration. Through joint prototypes and demonstrations, Ericsson is laying the groundwork for an “intelligent fabric” to support future AI-native mobile networks, aiming for the first implementable 6G specifications around 2029.



New computer chip material inspired by the human brain could slash AI energy use

Ericsson demonstrated its 6G leadership at MWC Barcelona 2026, showcasing AI-integrated networks, interoperability with industry partners, and joint prototypes. These efforts aim to create an “intelligent fabric” for future AI-native mobile networks, preparing for the first implementable 6G specifications around 2029.





DGIST Developed World’s First AI Semiconductor That Uses Hydrogen to Remember and Learn

- Daegu Gyeongbuk Institute of Science and Technology developed the world’s first hydrogen-based AI semiconductor.
- Enables brain-like computation and memory in a compact two-terminal design.
- Offers long-term memory retention, stable operation, and ultra-low-power neuromorphic potential.

IP Insights

On Alicyclobacillus (ACB) in High Acid Beverage

What is Alicyclobacillus bacteria?

- **Alicyclobacillus** is a spore-forming, thermophilic, acidophilic genus of bacteria that are used for imparting undesirable flavors and odors to many juices and other acidic beverages. Although it is not considered pathogenic to humans, it poses an important quality challenge to the beverage industry by causing significant quality issues from the compound guaiacol produced by this organism.

- **The first reported** case of spoilage of commercially available pasteurized fruit juices due to Bacillus **(Alicyclobacillus) acidoterrestris was reported in Germany in 1982.**

- **In Netherland, 2013,** a well-known case where pasteurised raspberry juice was contaminated by Alicyclobacillus, resulted in a public product recall following consumer complaints about off-odors and unpleasant taste.

Why is Alicyclobacillus a concern for the fruit juice and acidic beverage industry?

- **Company Reputation:** Negative media coverage, loss of consumer trust & weakened brand loyalty.

- **Financial Loss:** Costs from product recalls, unsellable inventory & disposal.

- **Market & Competitive Impact:** Loss of market share to competitors and challenges in securing new distribution contracts.

- **Operational Disruption:** Production line stoppages for investigation, increased quality control & testing expenses.

- **Legal & Regulatory Consequences:** Product liability claims, fines, compliance audits & potential plant shutdowns.

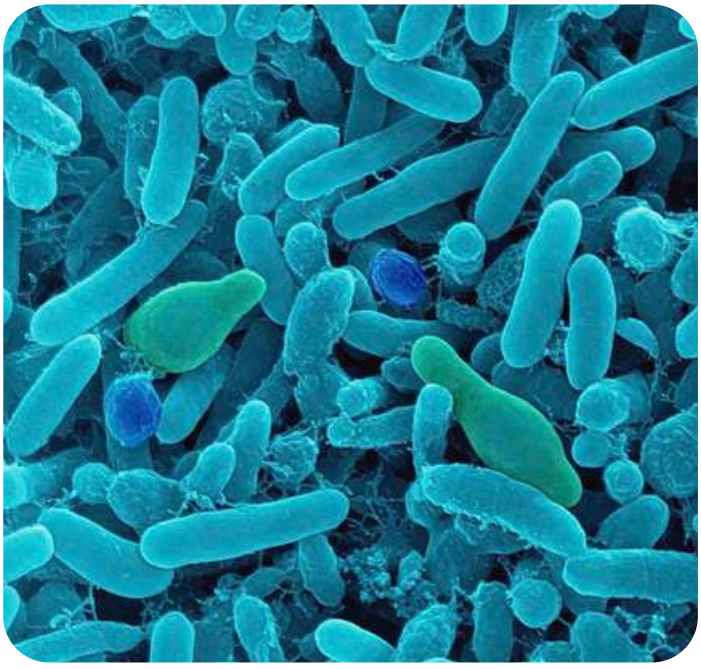
- **Product Delisting:** Risk of products being removed from stores.

IP Insights

On Alicyclobacillus (ACB) in High Acid Beverage

What are the Off-flavour / off-odor compounds produced by Alicyclobacillus?

- Guaiacol (2-methoxyphenol) (Smoky, medicinal, antiseptic)
- 2,6-Dibromophenol (Disinfectant, hospital-like)
- p-Cresol (4-methylphenol) (Tar-like, horse-stable, medicinal)
- 4-Vinylguaiacol (Smoky, clove-like)
- Isobutyric acid (2-methylpropanoic acid) (Sweaty, cheesy, rancid)
- Isovaleric acid (3-methylbutanoic acid) (Cheesy, sweaty, sour)
- Butyric acid (Rancid butter, vomit-like)
- Catechol derivatives (Bitter, harsh, medicinal)



What are the strategies to kill Alicyclobacillus spp. in acidic beverages.

Alicyclobacillus can produce extremely resistant spores that can survive on wide range of pH levels, temperatures, and environmental conditions. Effective control strategies therefore focus on:

- Disrupting the cell membrane,
- Damaging the protective spore coat
- Collapsing proton gradients
- Denaturing essential enzymes
- Depleting cellular energy systems
- Breaking down protective biofilms.
- Inhibiting spore germination

IP Insights

On Alicyclobacillus (ACB) in High Acid Beverage

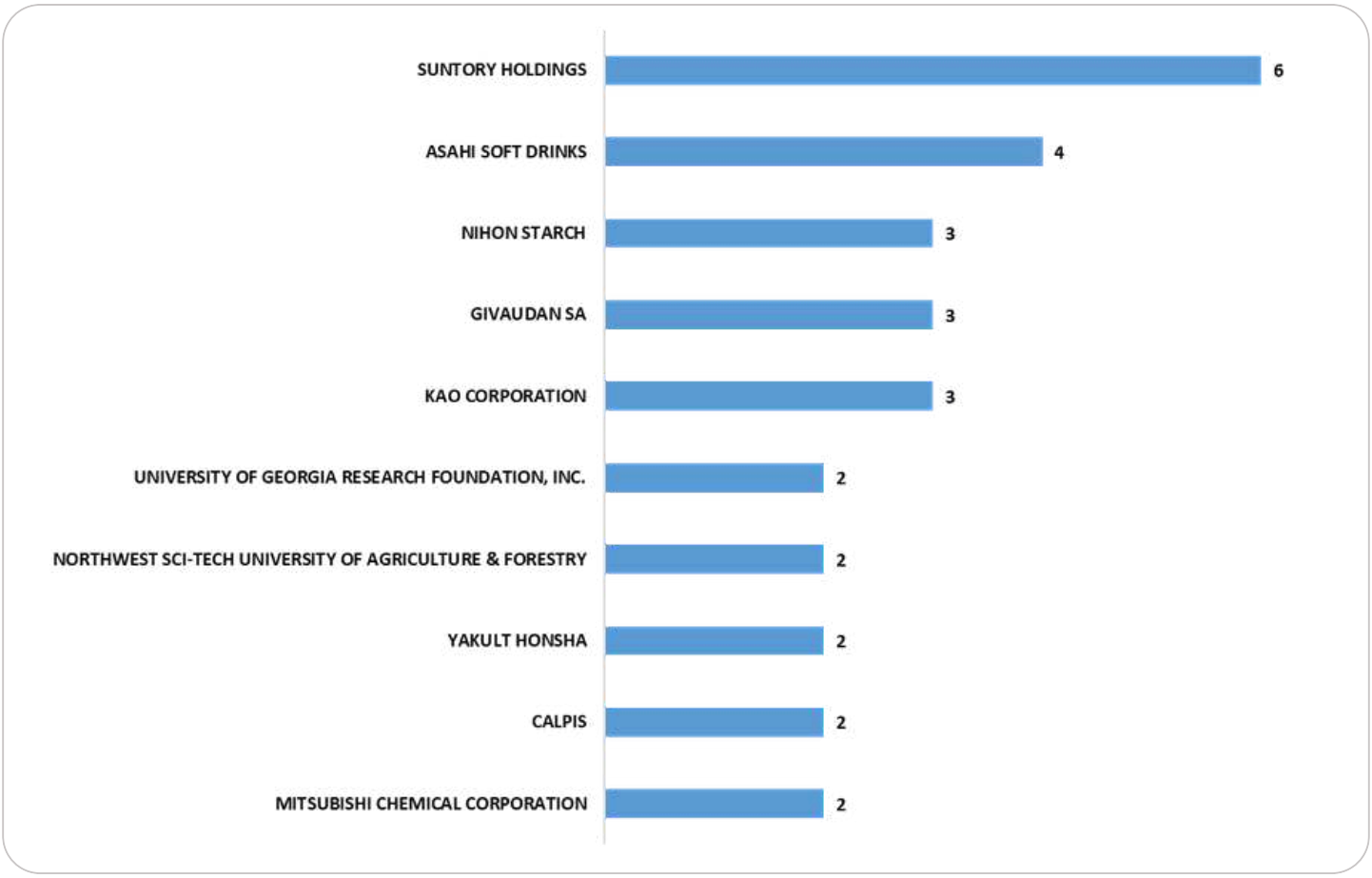
What are the Off-flavour / off-odor compounds produced by Alicyclobacillus?

- **Pressurized CO_2:** CO_2 carbonation machines (~₹3.5 Lakh / $3,895) reduce Alicyclobacillus in acidic beverages (pH 3.35–4.1).
- **High-Pressure Pasteurization:** Ultra-high pressure machines (~$100,000) inactivate A. acidoterrestris in fruit purees and juices (pH 3.0–4.5) at up to 600 MPa.
- **Pulsed Electric Field (PEF):** Equipment (~$6,532) treats vegetable juices (pH 3.0–4.0) using 4 kV/cm pulses.
- **Thermal Pasteurization:** Industrial pasteurizers (~₹6.5 Lakh / $7,220) inactivate A. acidoterrestris at controlled heating (~pH 3.5).
- **UHT Heat Sterilization:** Tube-type sterilizers (~₹9.98 Lakh / $11,120) use high-temperature short-time treatment (pH 3.0–4.2).
- **Tranter Heat Exchangers:** Steel plate units (~₹25,000 / $278) reduce spores in fruit/citrus juices (pH 2.0–4.5).
- **UV-C Radiation:** Industrial UV systems (~₹55,000 / $611) inactivate multiple Alicyclobacillus species (pH 3.2–3.5).
- **Thermosonication:** Probe sonicator (~₹6 Lakh / $6,670) combines ultrasound and heat to treat apple juice (pH ~3.29).
- **High Hydrostatic Pressure (HPP):** Sterilization machines (~₹79.8 Lakh / $88,950) inactivate A. acidoterrestris in apple/orange juice (pH 3.0–3.7).
- **Ohmic Heating:** Systems (~$3,700–9,900) reduce spores in acidic beverages (pH 3.5–3.6) via rapid internal heating.

IP Insights

On Alicyclobacillus (ACB) in High Acid Beverage

Key Players Working on Alicyclobacillus (ACB) in High Acid Beverage



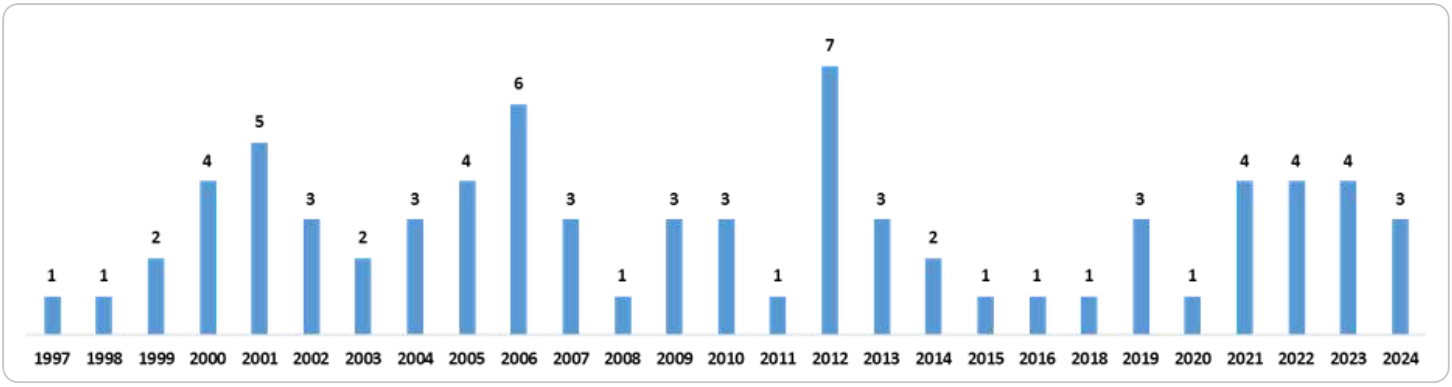
- **Suntory holding** leads as the top assignee with **6 patent publications, followed by Asahi Soft Drinks with 4 patents.** Other Leading assignee includes **Nihon Starch, Givaudan SA and Kao Corporation has published 3 patents.**

- The **top assignee, Suntory holding, holds 6 patents** that primarily focus on a removal of Alicyclobacillus from food and beverage such as **Isoxanthohumolexhibits antibacterial activity against Alicyclobacillus, including A. acidoterrestris, with minimum inhibitory concentrations of 25-50 µg/mL in agar dilution assays.**

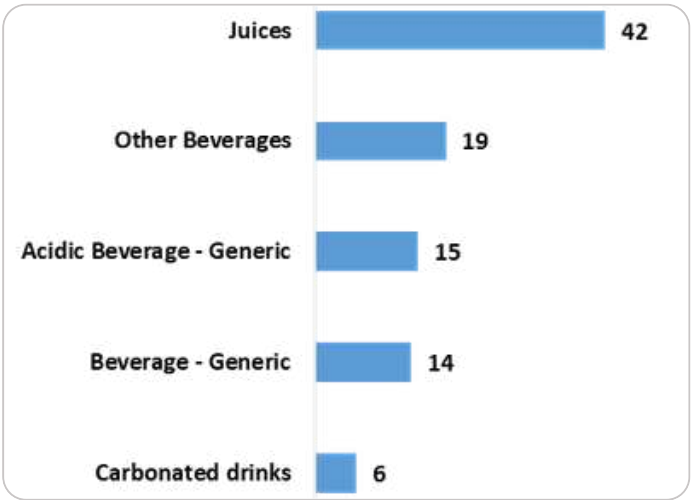
IP Insights

On Alicyclobacillus (ACB) in High Acid Beverage

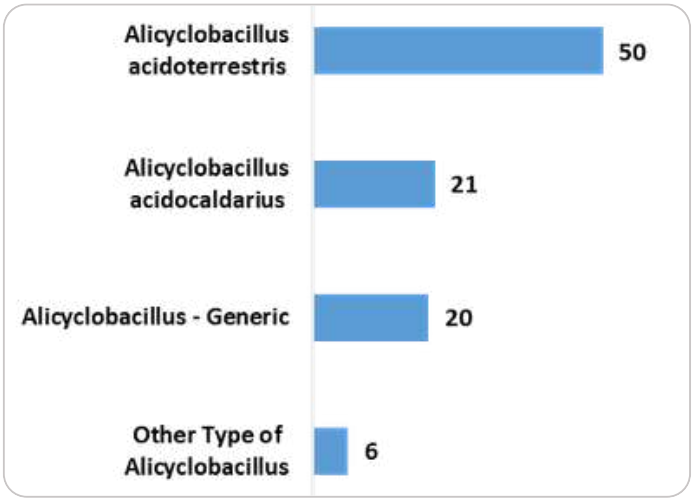
Patent Filing Year Trends



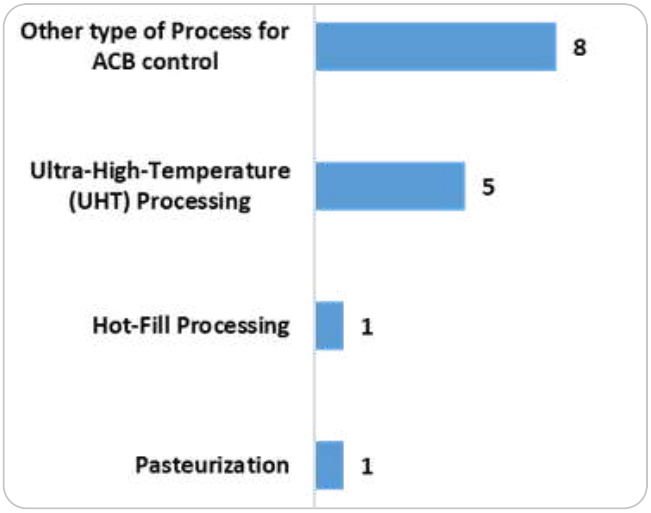
Type of Beverage



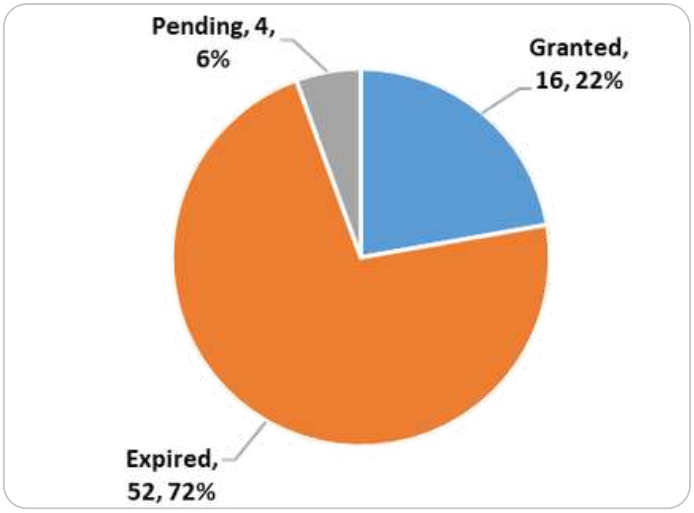
Type of Alicyclobacillus



Type of Process for ACB control



Legal Status



IP NEWS

Trademark classification goes agentic with USPTO's announcement of "Class ACT" assistant

- United States Patent and Trademark Office launched an AI tool called Class ACT for trademark pre-processing.
- It automatically assigns international classes, design search codes & pseudo marks to applications.
- Reduces processing time from months to minutes or seconds.
- Helps handle complex applications (logos, designs, unusual spellings, missing classifications).
- Improves search efficiency for examining attorneys and practitioners.
- AI outputs are still reviewed by human experts for accuracy.
- Frees up staff to focus on substantive examination and decision-making.

UNITED STATES
PATENT AND TRADEMARK OFFICE
uspto

IP NEWS

Novo Nordisk patent expiry opens door to cheaper weight-loss drugs in India

- India's market for diabetes and weight-loss drugs is set for a shake-up as Danish drugmaker Novo Nordisk's patent on semaglutide expires this week, triggering a wave of cheaper generics from local drugmakers and worries about uneven oversight in an overcrowded market.

- More than 40 Indian firms are expected to launch over 50 brands within weeks, analysts and doctors said, widening access in a price-sensitive market, but also raising concerns about misuse and confusion among prescribers as costs fall sharply.

- Sun Pharma, Mankind Pharma, Dr. Reddy's, Zydus, Lupin and Alkem , are among the companies expected to launch generic versions of semaglutide, the active ingredient in Novo's diabetes drug Ozempic and weight-loss treatment Wegovy.

- With high demand, falling prices and multiple brands, you may see direct pharmacy purchases, distributor-level leakages, or cosmetic or lifestyle use especially in urban markets.

IP NEWS

Adobe sued for trademark infringement over 'Foundry' AI tool

- British visual-effects software company The Foundry Visionmongers has sued Adobe, in California federal court, arguing Adobe's Firefly Foundry suite of generative artificial intelligence tools violates its trademark rights in the "Foundry" name.
- Foundry, owned by tech company Roper Technologies, said in the complaint, filed that Adobe's AI-based content creation software will create consumer confusion with its similar products.
- Adobe announced its Firefly Foundry software last year, which uses AI to generate text, video, images and other content. The lawsuit said Adobe was likely to cause confusion by using the "Foundry" name to sell similar software to similar markets.
- Foundry requested a court order blocking Adobe from using the "Foundry" name and an unspecified amount of monetary damages.

IP NEWS

Gen Digital overturns $481 million patent award in Columbia University lawsuit

- A U.S. appeals court overturned a $481 million patent infringement award won by Columbia University against Gen Digital.
- The U.S. Court of Appeals for the Federal Circuit said the patents may be invalid (abstract ideas) and sent the case back to a lower court.
- Columbia originally sued in 2013, claiming Gen Digital's antivirus products infringed intrusion-detection patents.
- A jury awarded $185 million (2022), later increased to $481 million (2023) by Judge Hannah Lauck for willful infringement.
- The appeals court also ruled that Quinn Emanuel Urquhart & Sullivan did not have to disclose certain communications, as they were protected by attorney-client privilege.

IP NEWS

NCAA sues to block DraftKings from using 'March Madness' trademarks

- National Collegiate Athletic Association sued DraftKings over its gambling marketing tied to March Madness.
- NCAA claims the company misused its trademarks and falsely suggested an official association.
- It argues sports betting threatens game integrity and student-athlete safety.
- Estimated $3.3 billion in bets expected on the tournament (per American Gaming Association).
- DraftKings says its use of the term is informational and legally protected, not trademark infringement.
- NCAA highlights risks of “prop bets”, citing increased harassment and potential manipulation of players.
- Lawsuit aims to protect athletes and preserve fair competition.

IP NEWS

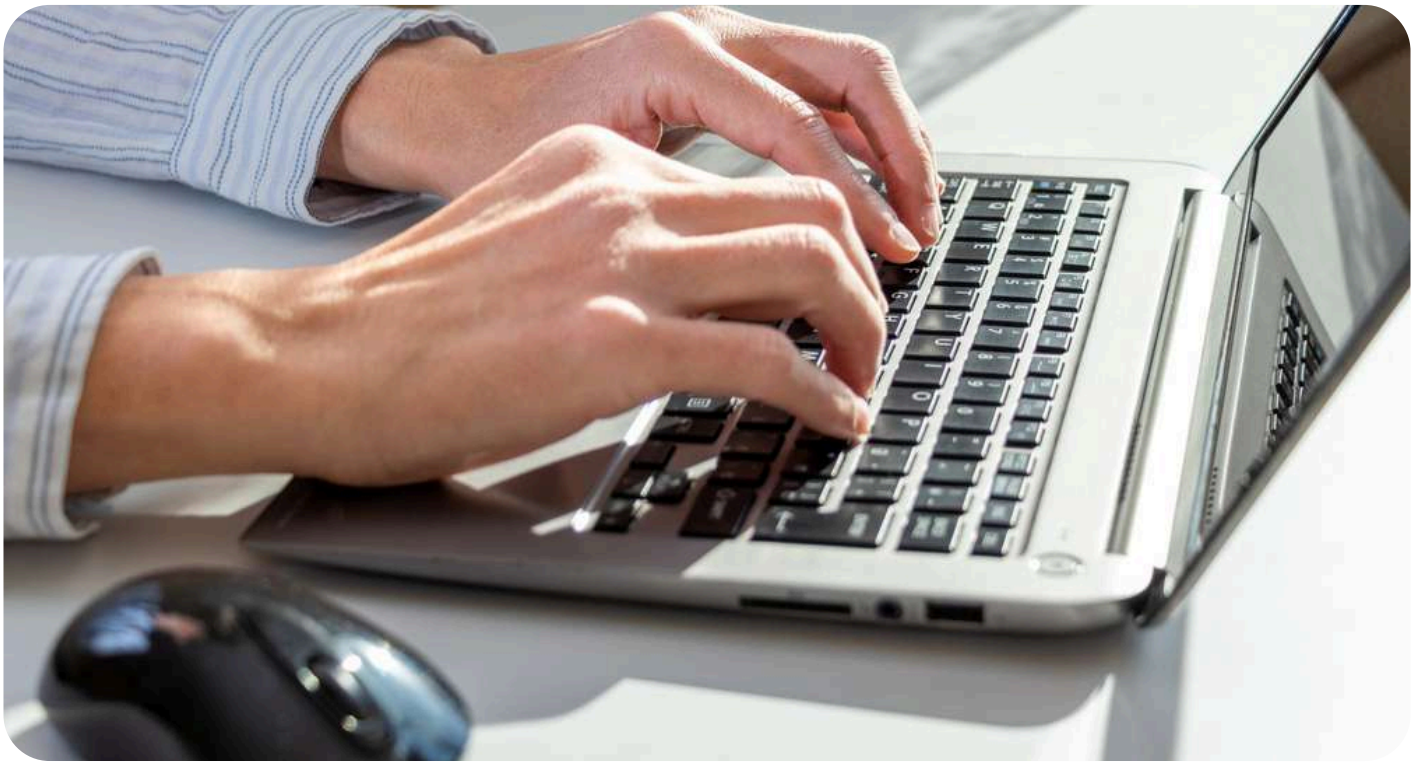
Philips, Google's Fitbit settle fitness-tracker patent dispute

- Philips and Fitbit (owned by Google) have settled a long-running patent lawsuit.
- The case will be dismissed with prejudice, meaning it cannot be filed again.
- Philips sued Fitbit in 2019, alleging infringement of wearable health-monitoring patents.
- The disputed patents were later invalidated by courts and the United States Patent and Trademark Office.
- Fitbit (and Garmin) had already won a related case in 2021 at the U.S. International Trade Commission.
- Google acquired **Fitbit for $2.1 billion in 2021.**

IP NEWS

'Coda v. Goodyear': Indefiniteness destroys trade secrets

- The dispute involved trade secret misappropriation under the Ohio Uniform Trade Secrets Act.
- It stemmed from two meetings (Jan & June 2009) between Goodyear and Coda Development, after signing an NDA.
- Discussions focused on Coda's Self-Inflating Tire (SIT) technology.
- Coda claimed it disclosed trade secrets orally, but provided no tangible evidence.
- Goodyear argued Coda was not clearly defining its trade secrets, risking shifting claims during discovery.
- The court ordered Coda to specifically identify and detail its trade secrets.
- Coda initially listed 27 trade secrets, later withdrew 10, leaving 17 claims.
- Remaining claims involved complex technical aspects of SIT technology.



IP NEWS

Disclosing the undisclosable: Section 112(a) challenges for artificial intelligence patents

- Patent law is based on a "disclosure-for-exclusivity" bargain: inventors must fully explain their invention to get patent rights.

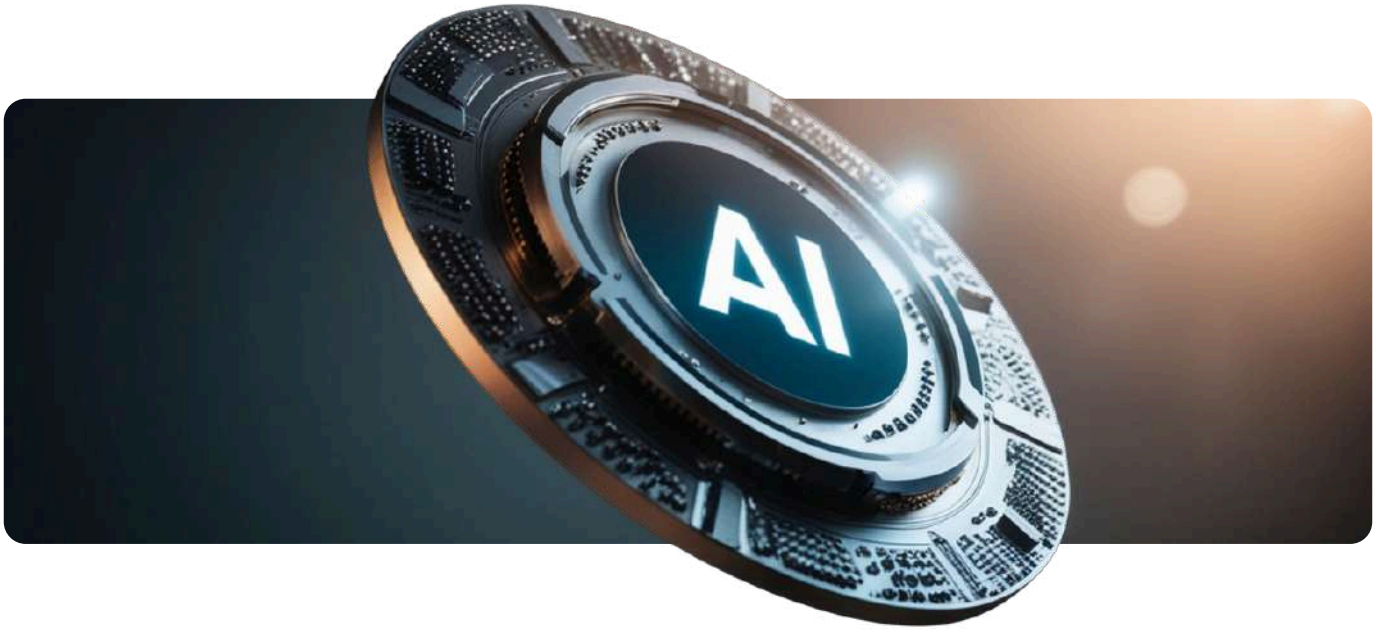
- Under 35 U.S.C. § 112, this includes:
  - Written description → prove the inventor actually possessed the invention.
  - Enablement → allow others to make and use it without undue experimentation.

- AI challenges this framework:
  - Neural networks are often opaque ("black box").
  - Outcomes may emerge from training, not explicit design.
  - Even creators may not fully understand internal workings.

- Key legal tension:
  - How to show possession of something not fully explainable?
  - How to enable replication of unpredictable AI systems?

- The Patent Trial and Appeal Board is shaping how these rules apply to AI.

- Takeaway:
  - AI patents must carefully balance technical disclosure with system complexity, or risk failing §112 requirements.



TECHNOLOGY Themes

Charge_iN by Mahindra Signs Strategic Agreement with HPCL to develop Electric Vehicle Charging Infrastructure at HPCL Retail Outlets

Charge_iN by Mahindra and Hindustan Petroleum Corporation Limited (HPCL) today announced collaboration partnership towards setting up Electric Vehicle Charging Stations (EVCS) at HPCL fuel stations across India. Charge_iN by Mahindra to leverage HPCL's fuel station network to develop electric vehicle (EV) charging infrastructure. The agreement is expected to enhance EV users' experience and accelerate EV adoption in India.

2026 Lexuses launches with battery-electric models, new hybrid coming soon

- **11 kW AC Charger:** Level 2 in ~7 hrs.
- **Fast Charging:** 10–80% in ~28 min at 150 kW.
- **Dual-Voltage Cable:** Supports 120 V & 240 V.
- **Battery Preconditioning:** Optimizes charging manually or via Cloud Navigation.

Technology Themes

Nissan Repurposes LEAF Batteries for Ultra-Fast EV Charging at Port of Vigo

Nissan Motor Corporation is advancing its circular economy strategy with an ultra-fast EV charging solution at the Port of Vigo, using repurposed Nissan LEAF batteries. Green Charge Flex combines twelve 30 kWh packs into a 300 kWh energy storage system, supporting multiple charging points, including 240 kW DC and 22 kW AC charging.

EV charging breakthrough: 97% in 9 minutes, 258 ultra-fast stalls

While Western oil majors and think tanks are still "studying" if EVs have a future, Shell teamed up with BYD in Shenzhen and built something insane. It's a 2.5 km-from-airport super-hub with 258 ultra-fast chargers, rooftop solar pumping out 300,000 kWh/year and capacity for 3,300 EVs per day.

Servotech & Electra EV Secure Joint Patent for Low-Voltage Electric Vehicle Charging Device

New Delhi, 11 March 2026: Servotech Renewable Power System Ltd., in collaboration with Electra EV, received an Indian patent for an Electric Vehicle Charging Device. The technology enables safe, efficient, and reliable charging for low-voltage EVs while remaining compatible with fast-charging systems, supporting India's growing EV ecosystem.

Technology Themes

2026 Porsche Cayenne S Electric Arrives With 657 HP and Ultra-Fast Charging

2026 Porsche Cayenne S PoElectric, a performance model between standard Cayenne Electric and Turbo.

- **Fast Charging:** 10–80% in under 16 minutes at 400 kW stations.
- **Charging Ports:** J3400 (NACS) DC port on driver-side rear fender, J1772 AC port on passenger-side rear fender.
- **Standard Accessory:** Porsche CCS DC adapter included.
- **Lineup Expansion:** Adds a high-performance option to Porsche's electric SUV range.

GLANCE @EFFECTUAL

IAM 300 GLOBAL LEADERS 2026

A Proud Moment for Effectual Services

We are delighted to share that our esteemed leader, **Dr. Amit Goel, has been recognized in the IAM 300 – 2026 listing**, a prestigious global acknowledgment reserved for the world's leading IP strategists. This accomplishment reflects not only Dr. Goel's exceptional vision and dedication but also underscores the depth of expertise and innovation that defines our organization in the field of Intellectual Property.

Dr. Amit Goel's recognition is a testament to his unwavering commitment to excellence, his strategic leadership and the transformative impact he continues to create within the IP landscape. His guidance has played a pivotal role in strengthening our capabilities, elevating our global presence and consistently driving high-value outcomes for our clients and partners.

Congratulations, Dr. Amit Goel, on this well-deserved achievement. We extend our heartfelt appreciation for the brilliant work you do and for inspiring all of us to pursue the highest standards of professional excellence. Your recognition brings pride to the entire team at Effectual and reinforces our collective pursuit of leadership in the IP domain

GLANCE @EFFECTUAL

GLOBAL
LEGAL ASSOCIATION

9TH GLA GLOBAL ARBITRATION & LITIGATION CONFERENCE BANGKOK, THAILAND 2026

23rd - 24th April' 2026 | Asawin Grand Convention Hotel

We are very happy to announce our upcoming flagship event, the 9th GLA Global Arbitration & Litigation Conference 2026 Bangkok,Thailand Edition, scheduled for **23rd - 24th April, 2026.** This conference is expected to bring together 275+ IP professionals, including:

- Head of IP
- IP Counsels
- Head of Litigation
- General Counsels
- Litigation Managers
- Arbitration Heads
- ADR Professionals
- Chief Dispute Resolution Officers
- Risk & Compliance Professionals
- Data Privacy Managers
- Legal Attorneys
- Directors/Partners of Law Firms
- Government Representatives & Ministries

95+ ATTENDEES

50+ SPEAKERS

10+ EXHIBITORS

12+ MEDIA PARTNERS

10+ SESSIONS

GET IN TOUCH

The sum of human ingenuity and expertise that powers us.

Human interactions that drive innovation.

EffectUal Services

Intelligence That Matters

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