EffectUal Services

Intelligence That Matters

Monthly Newsletter from Effectual Services

Dear Readers,

Welcome to NewsEffect – February 2023

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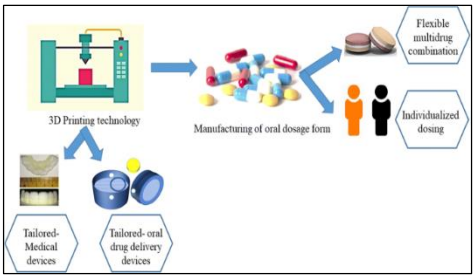
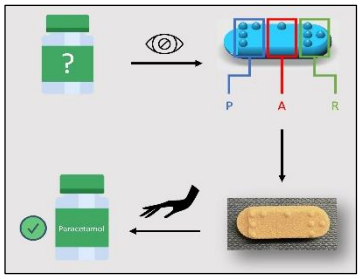
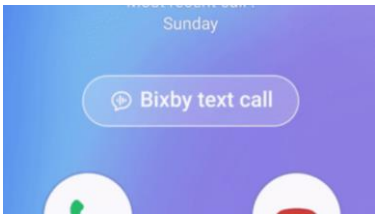
3D Printed Drugs





- 3D Printed Tablets (Printlets) with Braille and Moon Patterns for Visually Impaired Patients. The study reports, for the first time, the use of three-dimensional (3D) printing to create orally disintegrating printlets (ODPs) suited for patients with visual impairment. Printlets were designed with Braille and Moon patterns on their surface, enabling patients to identify medications when taken out of their original packaging. Printlets with different shapes were fabricated to offer additional information, such as the medication indication or its dosing regimen. Despite the presence of the patterns, the printlets retained their original mechanical properties and dissolution characteristics, wherein all the printlets disintegrated within ~5 s, avoiding the need for water and facilitating self-administration of medications. Moreover, the readability of the printlets was verified by a blind person. Overall, this novel and practical approach should reduce medication errors and improve medication adherence in patients with visual impairment.
- A biotech company FabRx has announced the official launch of its new pressure-detecting semi-solid extruder (SSE) printhead; the SSE Laguna. SSE is a 3D printing method that employs a syringe-based printhead to extrude a gel or paste-like material to produce the desired object. According to FabRx, SSE has already been employed in pharmaceuticals to create formulations for human clinical trials. To further assist its clinical implementation, the usage of a pressure sensor for quality assurance purposes could provide data on the printability of the feedstock material in situ and within precise printing conditions. a pressure sensor was attached to the 3D printer's extrusion barrel for real-time recording of the flow behavior of semi-solid masses via small-gauge nozzles employed in printlet production. The usage of a syringe throughout printing, along with the 3D printing platform itself, eradicates many parameters that would have to be monitored if the tests were conducted in a conventional manner, namely, using a texturometer, rheometer to examine the ink candidates prior to printing.
- Spanish hospital to launch trials with 3D printed drugs designed for children. The Pharmacy Service of the Vall d'Hebron University Hospital will conduct a study to test the efficacy, tolerability and level of acceptance of a 3D printed drug, designed for children. Minors (between 6 and 18 years of age) who have to take medication, especially those with chronic pathologies and who require daily treatment are a key focus of this experience. As you probably know, several projects have already demonstrated the fabrication of 3D printed drugs for adults. The 3D printer helps to create a new formulation that will help to dose the drug in a personalized way for each patient and hopes to improve the experience of children who have to take medication on a daily basis.
- The market for 3D printed drugs, which was expected to create an estimated US$ 307.54 Mn by 2022 is anticipated to be worth US$ 742.88 million in 2032, growing at a fantastic CAGR of 9.2% from 2022 to 2032. 3D printing has the potential to fasten up the arrival of customized pharmaceuticals or the development of therapeutic blends. With the help of 3D printing, medications could be personalized for each patient, which will likely be more effective than batch-produced medications as they would be produced individually with consideration for that patient's medical history. All of these considerations aid the growth of the 3D printed drugs market during the forecast period. The quick solubility and customizable aspects of 3D printed drugs augment the demand for the same in the international market. These drugs are produced by the help of powder bed inkjet printing by adding the drug's components in a layer-by-layer format- similar to 3D printing for any other application.

Disruptive Technology Leads



- Noninvasive blood glucose testing for future Apple Watch reaches 'Proof-of Concept' stage. Apple is working on a silicon photonics chip that utilizes optical absorption spectroscopy to shine light from a laser through the skin to determine glucose concentration levels in the body without the need for blood. While the technology is in a "proof-of-concept" phase, it is currently the size of an iPhone and can be affixed to an individual's arm. Apple collaborated with TSMC to create the primary chip for the prototype but previously partnered with Rockley Photonics to design sensors and chips for glucose monitoring.

- Qualcomm fastest ever local AI image generation with Stable Diffusion on a smartphone. In the demo video, Qualcomm shows version 1.5 of Stable Diffusion generating a 512 x 512 pixel image in under 15 seconds. Although Qualcomm didn't disclose the details about the phone, they did state that it's powered by their flagship Snapdragon 8 Gen 2 chipset which launched last November and has an AI-centric Hexagon processor. It takes a lot of computing power to run a program like Stable Diffusion which is a staple in AI image generation, and most apps offering such services on mobile do all their processing in the cloud rather than burning up your smartphone or tablet.

- Samsung's Bixby voice assistant can now answer calls in your voice. Samsung announced new features to their voice which included a text to voice synthesizer that can be used to answer calls. The users can type in a message and Biby will generate the voice message which sounds like the user. The feature is currently available only in South Korea for English speaking users.

- General Motors is working on a new tech which could automatically clean fingerprint smudges, oil residuals, dust and other debris from the surface of a screen. GM has filed a patent for self-cleaning system for displays using light emitting diodes emitting invisible violet light. According to the patent, there will be a fourth LED that emits violet light in addition to the RGB LEDs included into the screens. According to General Motors, the display will include a photocatalytic coating embedded into a transparent layer, in addition to the violet LED. As the violet light interacts with the photo catalyst on the screen, a chemical reaction occurs that, when combined with the water molecules in the air, may clean the surface of any dust or fingerprints.

- 3D-printed rocket fully constructed at the launch pad in preparation for its first mission. The first Relativity mission, GLHF (Good Luck, Have Fun), will be a critical launch test for the 110-foot (33-meter) Terran 1 before it carries customer payloads. The rocket is 85 percent 3D-printed by mass, and the company says it is "the largest 3D printed structure to exist and attempt orbital flight" (opens in new tab). They intend to eventually manufacture Terran 1 rockets that are 95 percent 3D-printed.

- Brazilian aerospace manufacturer Embraer filed a patent application that can read airplane passengers' emotions and offer them deep brain stimulation using electricity-based direct current stimulation, magnetic stimulation, and pulsed ultrasound device mounted on the seats. transcranial magnetic or current stimulation is an accepted treatment for depression and a potential option for some other mental health conditions.

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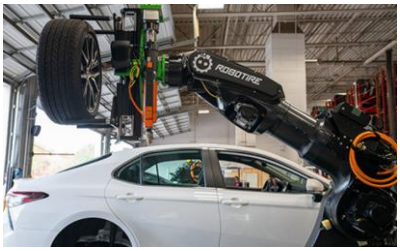
Disruptive Technology Leads (Contd.)



- RoboTire Ushers in the Future of Automated Automotive Care. Victor Darolfi is the CEO of RoboTire and has a long track record in engineering manufacturing and working to improve process efficiency at companies such as Lockheed Martin. While having the tires changed on his car some years back, he drew on his experience to see how greater efficiency and better safety could be brought to the common task of changing tires. He recognized that the current state of robotics, AI, and 3D machine vision was at a point where a new solution was possible. He also saw that if executed correctly, it would change and improve the industry in a truly disruptive way.
- EV Charging Management System Vulnerabilities Allow Disruption, Energy Theft. Vulnerabilities in electric vehicle charging management systems can be exploited for DoS attacks and to steal energy or sensitive information. The problem is related to the use of WebSocket communications by the OCPP and how it mishandles multiple connections. The protocol does not know how to handle more than one CP connection at a time and attackers could abuse this by opening a new connection to the CSMS. Another issue is related to what SaiFlow describes as “weak OCPP authentication and chargers identities policy”.
- Drax Group Deploys Solace to Power Up the UK's Electric Vehicle Drive. Solace, the leading enabler of event-driven architecture for real-time enterprises, announced today renewable energy company Drax Group has deployed Solace event streaming and management technology to underpin its industry-leading Electric Vehicle solutions, powered by renewable energy. With 400,000 EVs in the UK, this will affect a large proportion of EV drivers.
- Audio Pioneer Mark Levinson Launches Disruptive Digital Audio Company, Daniel Hertz. Over the past decade, Mark Levinson and his team of Daniel Hertz audio engineers have developed a new class of audio chips with embedded C-wave (continuous wave) software called Mighty Cat. Mighty Cat, combined with new Daniel Hertz audio architecture and speakers, are the first products to deliver the experience of pure analog from any digital source, including streaming, and are available for the first time at www.DanielHertz.com.
- Is ChatGPT hyped or simply disruptive?. ChatGPT is not intelligent in the sense that it understands the content of a question, but rather it considers "input" an incomplete text that it completes....similar to predictive text on a mobile phone, but on a much bigger scale. To this end, ChatGPT was trained with huge amounts of text - more than 500 billion words - and to make connections between words, sentences and facts. To train this model, large parts of the internet were read in and the correlations between the words in different languages were calculated as a statistical model in a huge computer centre. ChatGPT is unique in that was trained in talks with human beings and thus answers plausibly and like a person.
- Nokia changes iconic logo to signal strategy shift. Nokia announced plans on Sunday to change its brand identity for the first time in nearly 60 years, complete with a new logo, as the telecom equipment maker focuses on aggressive growth. Nokia announced plans on Sunday to change its brand identity for the first time in nearly 60 years, complete with a new logo, as the telecom equipment maker focuses on aggressive growth. The new logo comprises five different shapes forming the word NOKIA. The iconic blue color of the old logo has been dropped for a range of colours depending on the use.

Advancement in AI

- South Korean startup Rebellions Inc launches an artificial intelligence (AI) chip. The company's ATOM chip is the latest Korean attempt to challenge global leader Nvidia Corp in the hardware that powers the potentially revolutionary AI technology. Nvidia, a US chip designer, has a commanding share of high-end AI chips, making up about 86% of the computing power of the world's six biggest cloud services. Rebellions' ATOM is designed to excel at running computer vision and chatbot AI applications.
- Epazz Was Issued a Utility Patent for Its AI Predictive Smart Charging Pad for ZenaDrone 1000. The ZenaDrone Smart Charging Pad allows ZenaDrone 1000 to land on the charger for automatic charging. The Smart Charging Pad has built-in computer vision to understand the environment around it and to select the best option for receiving energy. The Smart Charging Pad has options for solar panels or wind power. The self-charging feature is critical for a drone to be fully autonomous.
- A team led by Alex Voznyy, an assistant professor in the department of physical and environmental sciences at U of T Scarborough, used machine learning to significantly speed up the amount of time needed to find new materials with desired properties. "We are trying to find better alternatives to the materials we currently have," says Voznyy, whose research looks at developing new materials for lithium-ion batteries, hydrogen storage, CO2 capture and solar cells.
- Insilico Medicine opens largest AI-powered biotechnology research center in the Middle East. Insilico. The research and development (R&D) hub will comprise global talent in artificial intelligence and software development dedicated to expanding the capabilities of Insilico's end-to-end AI-driven drug discovery platform, Pharma.AI, exploring aging research and sustainable chemistry, and supporting the digital transformation of healthcare in the region. "This is exactly the kind of groundbreaking work in artificial intelligence that we aim to support in our free zone and innovation ecosystem," said Ahmed Baghoum, the acting CEO of Masdar City.
- DiA Secures FDA Clearance for New AI-Powered Software, Assisting Ultrasound Users To Capture High-Quality Images. DiA Imaging Analysis is a global leading provider of FDA-cleared and CE-marked ultrasound AI software solutions that automate the way clinicians use and analyze ultrasound images. The FDA cleared LVivo IQS following a clinical study that demonstrated its safety and efficacy. The results demonstrated high agreement between the LVivo IQS AI's quality score feedback and the ability to obtain clinically interpretable images as evaluated by Cardiologist specializing in echocardiography. 91% of images saved by point-of-care residents using LVivo IQS, were found to be clinically interpretable images by the Cardiologist.
- Using artificial intelligence to meet water sustainability goals. Rockwell automation piloted an artificial intelligence (ai)-enabled control and machine learning application to help its customer, eastern municipal water district (emwd), save energy, reduce costs, and improve quality. Rockwell implemented an ai solution that learns the current state of aeration operations and, with minimal staff intervention, continuously and automatically adjusts the control system as conditions change. Emwd realize estimated savings of 2,330 kwh of electricity per day and more than $100,000 per year.

IP News

- GE Must Pay Double Jury's Royalty for Infringing Turbine Project. A Massachusetts federal judge doubled the amount that General Electric Co. must pay to operate its massive Haliade-X wind turbines that a jury found violates a Siemens Gamesa Renewable Energy A/S patent, ruling that GE "ought pay for this privilege" of using highly lucrative yet infringing technology.
- India, US to jointly develop UAVs and share IP rights. India and the US have moved ahead to jointly develop air launched unmanned aerial vehicles that will be used for surveillance missions, with first flight of the prototype likely to take place by the end of this year. The Air Launched Unmanned Aerial Vehicle (ALUAV) program is taking place under the Defence Technology and Trade Initiative (DTTI) and a critical factor is that the intellectual property (IP) rights for the new system will be jointly shared by the two sides.
- How blockchain technology is revolutionising the management and maintenance of Intellectual Property Rights. Even if IP laws remain the same if blockchain technology is used, enforcement is needed to keep track of this borderless technology. However, the major challenge of blockchain technology needs to be addressed - how to facilitate the registration of trademarks, copyrights and other IP laws in blockchain, while protecting them from third parties and maintaining their authenticity. This challenge can be overcome by leveraging the distributed ledger technology of blockchain. Firstly, the use of blockchain in maintaining the database of registered IP ensures that the owner's rights are secure by keeping track of the timestamp and activity of ownership. This also helps in validating any IP and preventing any infringement-related cases. Thanks to blockchain, verification of IP ownership is straightforward, as compared to the traditional laborious paperwork needed for enforcement of IP rights
- Shenzhen and Hong Kong Collaborate on the Promulgation of 16 Measures for the Creation of an Intellectual Property and Innovation Hub. The 16 Co-operation Measures for the Development of the Qianhai Shenzhen-Hong Kong Intellectual Property and Innovation Hub (16 Measures), jointly promulgated by the Authority of Qianhai Shenzhen-Hong Kong Modern Service Industry Cooperation Zone of Shenzhen Municipality and the Commerce and Economic Development Bureau of the Government of the Hong Kong Special Administrative Region, became effective on February 23. This move not only signifies an upgraded level of cooperation between Shenzhen and Hong Kong in the area of intellectual property (IP), but also marks Qianhai's advanced steps towards both the "construction of a primary-choice location for Hong Kong's integration into national development" and an intellectual property and innovation hub..
- Apple Watch might soon face international import ban. The International Trade Commission (ITC) ruled in December last year that Apple had infringed on wearable heart monitoring technology patented by a California-based startup called AliveCor. the Biden administration declined to veto a recent ruling by the Internation Trade Commission (ITC) which might result in an import ban on the Apple Watch.
- Semiconductor Intellectual Property (IP) Market is Expected to Reach US$ 7,103.0 Mn. Coherent Market Insights recently released a study report, titled "Semiconductor Intellectual Property (IP) Market: Global Industry Trends, Share, Size, Growth, Opportunity, and Forecast 2023-2030," which is a brilliant blend of industry expertise, creative solutions, strategies, and cutting-edge technology to provide a better experience.

IP News (Contd.)

- French luxury design house Hermès upcoming trademark trial against digital artist Mason Rothschild. Hermès argued to a Manhattan federal jury that Rothschild violated trademark law by creating and selling “MetaBirkin” NFTs. It will test the boundaries of artistic expression and how non-fungible tokens (NFTs) are viewed in the eyes of decades-old intellectual property law.

- A Chinese court ordered the Chinese electric car battery maker (CALB) to pay compensation to archrival Contemporary Amperex Technology (CATL) for infringing a battery patnet. Due to this shares in China Lithium Battery Technology Group, also known as CALB, tumbled as much as 3.3 percent. CALB have to pay CNY35.8 million (USD5.2 million) in compensation for economic losses to CATL.

- Visual media company Getty Images sues Stability AI Inc. of using more than 12 million Getty photos without permission or compensation. The latest copyright and trademark lawsuit against the use of artificial intelligence tools to generate art. Stability AI unlawfully used Getty’s copyrighted images and associated text and meta-data to train its AI text-to-image tool Stable Diffusion.

- According to the World Intellectual Property Organization (WIPO) indicators report shows that Global intellectual property filings reached new all-time highs in 2021 with Asia driving growth. Data published in WIPO’s latest World Intellectual Property Indicators report indicates that innovators filed 3.4 million patent applications globally last year, with Asia driving more than two-thirds of requests.

- Samsung is working on integrating a projector inside its smartwatch with the latest innovation. According to reports, the Samsung has filed a patent for a built-in projector in the wearable. According to the patent, the new smartwatch with a projector may capture information from the smartwatch's display and show it on the wearer's wrist. According to the sources, the projection capability will allow your wrist to be a clean slate, which may come in the shape of a digital clock, and could show your step count and heartbeat count on your wrist itself.

- The robotics and artificial intelligence company Deep Learning Robotics (DLR) recently announced the receipt of a new patent for a cutting-edge method for using robotic devices to train computer vision models with respect to objects' visual and three-dimensional features. By automatically and in real-time producing and combining visual and spatial features of things, they were the first to use robotic devices to generate such data back in 2016. According to DLR CEO Carlos Benaim, the novel approach has the potential to revolutionise existing ways for obtaining 3D data for training computer vision models.

- The budget allocation for the intellectual property ecosystem, which includes the copyright office and the Controller General of Patents, Designs, and Trade Marks, has been boosted by nearly 15% to Rs 328.981 crore. The allocations were Rs 285.41 crore in the revised projection (2022-23). The budgetary allocation for the copyright office and the Controller General of Patents, Designs, and Trade Marks has been increased to Rs 281.60 crore from Rs 232.65 crore in the revised estimate.

GLANCE @ EFFECTUAL

GLOBAL LEGAL ASSOCIATION – 2023, DUBAI, UAE

The first edition of Global Legal Association 2023 Conference was held from 06th-07th February, in Dubai, UAE, which bought together 300+ Law Firm Partners, Lawyers, In-House/Corporate Counsel, Investors, C Level Executives, Directors & Heads of Legal Departments, Policy Makers, stakeholders, Legal Service Providers & other Legal Professionals from all over the globe. The event marked a new beginning to a new line of business being operated under Effectual services.

NEXT EVENT – GLA 2023, AMSTERDAM

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