

PRISMA

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UNA VISIÓN 360°
DE TECNOLOGÍA
E INNOVACIÓN

FEBRERO
MARZO
2024

Conductive hydrogels

IA en Agricultura

Advanced GPS

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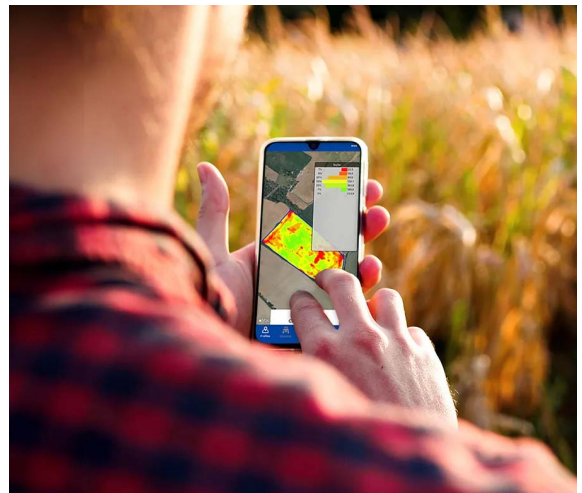
Mastering New FieldAlytics Features: A Deep Dive into 2024 Updates

Fuente: Ever.ag / Fecha: 15/03/2024

IA en Agricultura

Deep dive into 2024 FieldAlytics new features. We have been busy adding industry leading functionality and enhancements to our FieldAlytics solutions platform. In this webinar we will showcase all of the added features designed to optimize your business operations and make your life easier.

[Ver más...](#)



New type on the block: Generating high-precision orbits for GPS III satellites

Fuente: GPSworld.com / Fecha: 15/03/2024

Advanced GPS

To produce GNSS satellite orbit ephemerides and clock data with high precision and for all constellations, the Navigation Support Office of the European Space Agency's European Space Operations Centre (ESA/ESOC) continually strives to keep up and improve its precise orbit determination (POD) strategies. As a result of these longstanding efforts, satellite dynamics modeling and GNSS measurement procedures have progressed significantly over the last few years, especially those developed for the European Galileo sa...(+)

[Ver más...](#)



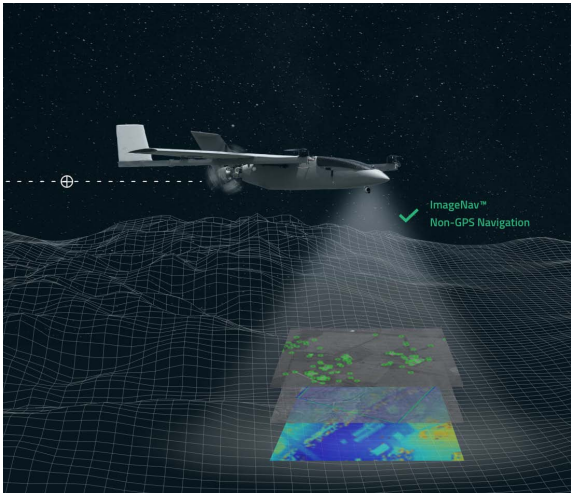
Scientific Systems advances navigation software

Fuente: GPSworld.com / Fecha: 07/03/2024

Advanced GPS

Scientific Systems has released upgrades for ImageNav, an image-based navigation software designed for GPS-denied or compromised environments. With more than a decade of development, ImageNav offers a robust alternative to traditional GPS navigation for military operations, particularly in contested environments where jamming poses a threat to GPS reliability. The demand for such technology has become increasingly critical considering enhancements to electronic warfare capabilities, with instances of GPS signal disruption impacting military assets. ImageNav is designe...(+)

Ver más...



GNSS timing measurements from a low-Earth orbiting satellite

Fuente: GPSworld.com / Fecha: 05/03/2024

Advanced GPS

Bobcat-1 was a three-unit CubeSat developed and built at Ohio University's Avionics Engineering Center in Athens, Ohio, and was named after the university's mascot. FIGURE 1 shows Bobcat-1 with and without its antenna deployed. The satellite was launched to the International Space Station in October 2020 (see FIGURE 2) and deployed into low-Earth orbit (LEO) the following month (see FIGURE 3). In April 2022, it deorbited and burned up in Earth's atmosphere as planned, after a successful 17-month mission, las...(+)

Ver más...



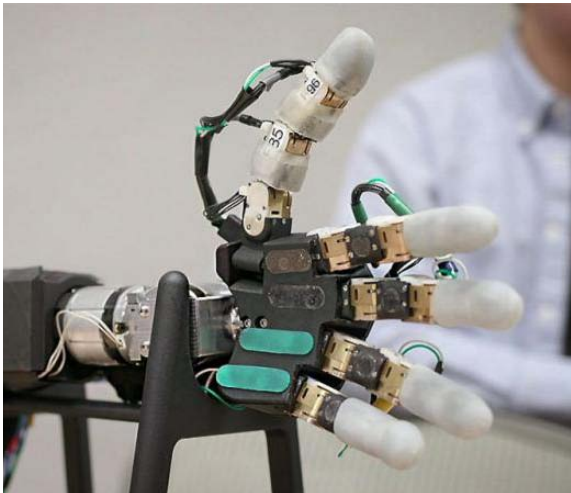
Robot, repair thyself: laying the foundations for self-healing machines

Fuente: Nature.com / Fecha: 29/02/2024

Conductive hydrogels

Advances in materials science and sensing could deliver robots that can mend themselves and feel pain. Inspiration can come from just about anywhere. For Robert Shepherd, a roboticist at Cornell University in Ithaca, New York, the source was a football injury 20 years ago, when he tore his anterior cruciate ligament. He needed surgery to re-attach the ligament to bone, but his skin and nerves healed by themselves — something that the tactile-sensing robots he was building at the time could not do. "If these sensor networks get d...(+)

Ver más...



Galileo, OneWeb – What’s next for UK GPS users?

Fuente: [OrbitalToday.com](#) / Fecha: 19/02/2024

Advanced GPS

With the UK government opting out of Europe's Galileo GPS program, where does that leave people in the country using GPS? And what will the UK government need to do next? GPS In The UK. The use of GPS satellite navigation requires access to a network of satellites. Historically, users in the UK used US military satellites for navigation. There are currently 31 GPS satellites in orbit owned and operated by America. There are other constellations of GPS satellites. The Russian government has a GLONASS network, and the European Union has its Galileo constellation. The Chinese government ...(+)

Ver más...



GPS OCX delays continue

Fuente: [GPSworld.com](#) / Fecha: 16/02/2024

Advanced GPS

New GPS ground stations that are contracted by Raytheon Technologies to replace the current ground stations have been delayed until July 2025, the Pentagon's testing office reported. The Next Generation Operational Control System (OCX) is facing a new delay of 16 months, according to the 2023 Annual Report of the Director of Operational Test & Evaluation (DOT&E). More than seven years behind schedule, the continuous delays have caused the U.S. Department of Defense (DOD) to go over its yearly budget and have sparked discussions as to future budget allocations for the U.S. Space F...(+)

Ver más...



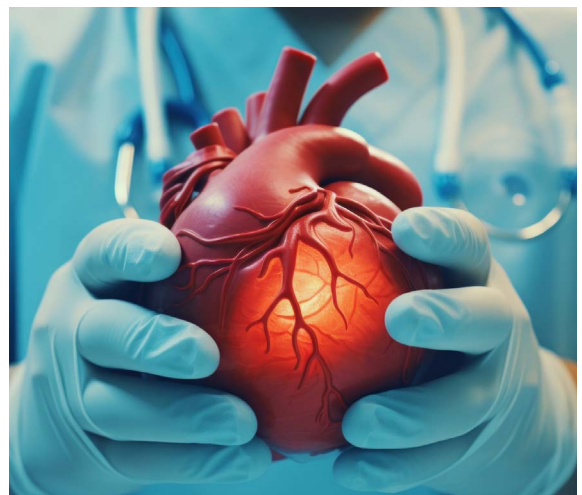
Is Hydrogel the Cure for a ‘Broken Heart’?

Fuente: [Azonano.com](#) / Fecha: 14/02/2024

Conductive hydrogels

Researchers from the University of Waterloo have developed a new hydrogel made from cellulose nanocrystals derived from wood pulp, which mimics human tissue properties and could be used to heal damaged heart tissue and improve cancer treatments through personalized therapies using tumor organoids. Dr. Elisabeth Prince, a chemical engineering researcher from the University of Waterloo, collaborated with researchers from the University of Toronto and Duke University to create a synthetic material consisting of cellulose nanocrystals generated from wood pulp. The material is desig...(+)

Ver más...



AI to the Rescue: New Model Farms Out Solutions to Cut Agricultural Emissions

Fuente: Labhorizons.co.uk / Fecha: 09/02/2024

IA en Agricultura

A team led by HKUST developed an AI model to reduce agricultural NH3 emissions by up to 38%, offering strategies for sustainable agriculture aligned with UN Sustainable Development Goals. In a notable advancement, an international team led by the Hong Kong University of Science and Technology (HKUST) has developed an artificial intelligence (AI) model aimed at reducing global ammonia (NH3) emissions from agriculture. The study "Fertilizer management for global ammonia emission reduction" published in the jou...(+)

Ver más...



2024 Digitalisation, AI and sustainable agriculture seminar summary

Fuente: Forumforag.com / Fecha: 08/02/2024

IA en Agricultura

Artificial intelligence is suddenly all around us and people have adapted to using it at lightning speed. What is not clear yet is how digitalisation and AI will change agriculture. What are the challenges and opportunities? Will there still be farmers on the land? Will humans still make decisions? What role can policy play? With these questions Jurgen Tack, Secretary General, European Landowners' Organization, opened the session, the latest in a number of discussions and events on the topic. He invited panellists and guest...(+)

Ver más...



3 ways to unlock the potential of climate-smart agriculture

Fuente: Weforum.org / Fecha: 16/01/2024

IA en Agricultura

Climate-smart agriculture can lower greenhouse gases and improve resource efficiency and resilience to changing climates while ensuring food security. Progress in moving climate-smart agriculture forward depends on providing enough resources to address emissions along the supply chain, access to methods and tools to assess metrics and making innovations more affordable. The Canadian Alliance for Net Zero Agrifood was launched to provide adequate financial support to enable the country's agricultural revolution.

Ver más...



Injectable Hydrogel Electrodes Open Door to a Novel Painless Treatment Regimen for Arrhythmia

Fuente: TexasHeart.org / Fecha: 09/01/2024

Conductive hydrogels

A breakthrough study led by Dr. Mehdi Razavi at The Texas Heart Institute (THI), in collaboration with a biomedical engineering team of The University of Texas at Austin (UT Austin) Cockrell School of Engineering led by Dr. Elizabeth Cosgriff-Hernandez, sets the foundation of a ground-breaking treatment regimen for treating ventricular arrhythmia. Their study published in Nature Communications demonstrates the design and feasibility of a new hydrogel-based pacing modality. The urgent need for an effective therapeutic regimen...(+)

Ver más...



Farmers in India are using AI for agriculture - here's how they could inspire the world

Fuente: Weforum.org / Fecha: 09/01/2024

IA en Agricultura

Subsistence farmers in countries like India battle extreme weather and financial desperation to support their families. The AI for Agriculture Innovation initiative held workshops with farmers in India to find out how to help them access the AI tools they need to farm more efficiently and earn more. The initiative transformed the chili farming for many in Khammam district, India with bot advisory services, AI-based quality testing, and a digital platform to connect buyers and sellers. Participating farmers reported that they dou...(+)

Ver más...



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Empresas y mercados

Manipuladores móviles: Precisión, IA y usos peligrosos

Fuente: Robotnik.eu / Fecha: 15/03/2024

IA en Agricultura

La precisión es un requisito fundamental para la mayoría de tareas de manipulación industrial. De hecho, se podría decir que la precisión y la repetibilidad son dos de los factores que convierten el proceso de automatización industrial en exitoso. Los brazos manipuladores son parte habitual del panorama industrial para automatizar tareas pesadas, repetitivas o peligrosas. La novedad en este sentido, se encuentra en los avances de los robots manipuladores a nivel tecnológico, tanto de software como de hardware. Act...(+)

Ver más...



Septentrio: Smart antenna reduces cabling

Fuente: GPSworld.com / Fecha: 11/03/2024

IA en Agricultura

Advanced GPS

Septentrio's AntaRx GNSS smart antenna — a box containing a receiver, an antenna and supporting electronics — is designed for machine automation and control in construction, precision agriculture and logistics. The smart antenna is enclosed in a rugged and compact housing for simplified installation. It can handle strong shocks and vibrations, which makes it ideal for harsh industrial environments such as construction and mining. From the early stages of the product's design and development process, Septentrio collaborated with a leading heavy construction machinery OEM, which provi...(+)

Ver más...



Iridium acquires Satelles to boost PNT capabilities

Fuente: GPSworld.com / Fecha: 05/03/2024

Advanced GPS

Iridium Communications, a satellite network operator, will acquire Satelles for \$115 million. Satelles is a provider of secure satellite-based time and location services that complement and protect GPS and other GNSS-reliant systems. While Satelles primarily focuses on providing its satellite time and location (STL) services for digital infrastructure companies, there are potential applications for aviation, the company said. Satelles offers smaller form factor devices that can be integrated with data processing and storage servers to provide critical positioning, navigation and timing (PNT) data.

Ver más...



Skylo Certifies the Samsung Exynos Modem 5400 on Its Non-Terrestrial Network

Fuente: Skylo.tech / Fecha: 05/03/2024

Advanced GPS IA en Agricultura

All devices that incorporate the Samsung Exynos Modem 5400 will seamlessly support both cellular and native satellite connectivity, available through their mobile service provider. Skylo Technologies, the pioneer in non-terrestrial networks (NTN), today announced the successful certification of the Samsung Exynos Modem 5400 on its network. All devices that incorporate the chipset will seamlessly support both cellular and native satellite connectivity, available through their mobile service provider. The Exynos Modem 5400 boasts...(+)

Ver más...



Project Whispering Thunder: Introducing Feed King

Fuente: Ever.ag / Fecha: 16/02/2024

IA en Agricultura

Embracing the revolution in dairy farming. In the ever-agvolving world of dairy farming, it's about time we introduced something that's not just another drop in the milk bucket. Enter Feed King – our topic, purpose-driven dashboard designed to revolutionize the way dairy farms operate. This isn't just a tool; it's a game-changer, an extension to the farmer's existing on-farm feed software. Why Feed King, you ask? Current situation: The muddled dairy dilemma. Farmers are drowning in data but starving for insights. We've b...(+)

Ver más...



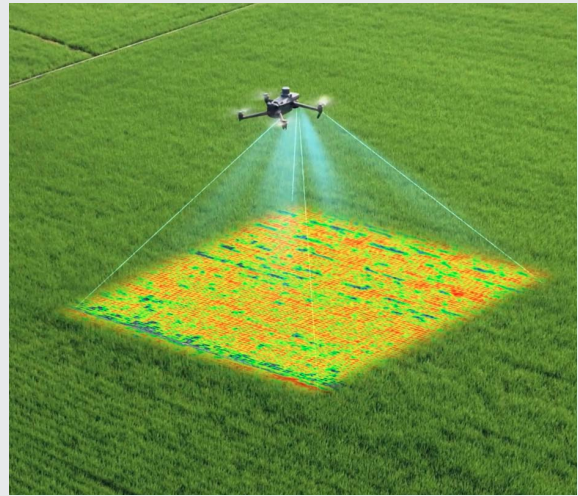
The Top 7 Crop Spraying Drones of 2024: Guide & Reviews

Fuente: Dslrpros.com / Fecha: 15/02/2024

IA en Agricultura

Welcome back! In this series covering agriculture drones, we've already gone over UAVs to use for day-to-day crop management – for you to assess the health of your farm and even predict your yield. Now we'll shift gears to the drones that you'll use to apply those pesticide and fertilizers to your farm. The criteria for making it onto 2024's ranking included a blend of advanced technology, efficiency, and of course, a little bit of that wow factor. Payload capacity and spraying efficiency were top of our priorities. Then there's the fl...(+)

Ver más...



Bringing flexible intelligence to Medicine 3.0

Fuente: Pragmaticsemi.com / Fecha: 14/02/2024

Conductive hydrogels

Pragmatic CTO Richard Price looks at the role FlexICs – flexible microchips – will play in delivering smart, patient-centric care. Healthcare has been undergoing a quiet revolution for quite some time, shifting from traditional models that respond to symptoms once they appear, to proactive, personalised care that aims to prevent issues before they arise. Technology is key to this paradigm shift. Patients can already schedule appointments, order medication or continuously monitor vital statistics from the comfort of their own home. But next-generation healthcare will expand upon the exis...(+)

Ver más...



SSC launches inquiry for GPS prototype development

Fuente: GPSworld.com / Fecha: 14/02/2024

Advanced GPS

The U.S. Space Systems Command (SSC), part of the United States Space Force, is actively seeking insights from the GNSS industry through a Request for Information (RFI) regarding the development of a Global Positioning System (GPS) Rapid Prototype Demonstration, Tranche 0. This initiative is part of a strategic effort to upgrade GPS capabilities to meet modern challenges in space navigation and ensure continued operational superiority. This RFI aims to collect information about the industry's capacity to innovate and de...(+)

Ver más...



Harvesting the Digital Acre: Doktor's Approach

Fuente: Doktor.com / Fecha: 13/02/2024

IA en Agricultura

Doktor's approach to harvesting the digital acre through its Climate and Sustainability Initiative is reshaping the landscape of agribusiness. By leveraging digital technologies, Doktor is not only promoting green and digital transformation but also empowering farmers and agribusinesses to thrive in the modern agricultural era. In agribusiness, digital transformation is becoming imperative, especially in contract farming. Doktor stands at the forefront of this revolution, not merely as a technology provider but as a catalyst for the digital and cultural transformation of agricultural operations...(+)

[Ver más...](#)



Naïo and CAMSO join forces in an R&D partnership to meet the challenges of soil protection

Fuente: Naïo-technologies.com / Fecha: 09/02/2024

IA en Agricultura

Naïo Technologies, leader in agricultural robotics, and CAMSO, specialized in rubber tracks and track systems, launched a Research and Development partnership to offer farmers and wine growers new work tools, meeting the demand for productivity and reduction of environmental impacts. « The R&D contract between CAMSO and Naïo, initiated for more than a year, has brought great results during the first stages of this partnership. We are now running a second, multi-year phase, including factory technical testing and on field...(+)

[Ver más...](#)



Agreena acquires UK farm management software company fieldmargin

Fuente: Agreena.com / Fecha: 06/02/2024

IA en Agricultura

Agtech company Agreena has announced today that it has acquired UK-based farm management software business, fieldmargin. With thousands of farmers worldwide using fieldmargin's innovative software, the acquisition represents a significant vote of confidence in the business and marks another key milestone in Agreena's growth journey. fieldmargin is a trusted tool for thousands of farmers in more than 100 countries. It simplifies and streamlines farm management by bringing all the information farmers need together...(+)

[Ver más...](#)



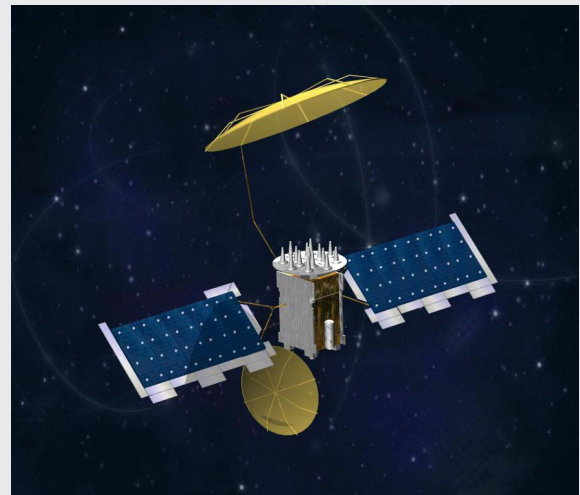
Space Systems Command Selects Lockheed Martin for Early Design of Next Two Mobile User Objective System Satellites

Fuente: Lockheedmartin.com / Fecha: 05/02/2024

Advanced GPS

The U.S. Space Force’s Space Systems Command recently awarded Lockheed Martin [NYSE: LMT] a fixed-price-incentive-fee (firm) contract valued at \$66 million for risk reduction activities and early design work in support of the Mobile User Objective System (MUOS) Service Life Extension (SLE) program. MUOS is a satellite-based network that provides the U.S. military with ultra-high frequency (UHF) voice and data communications. The MUOS constellation consist...(+)

Ver más...



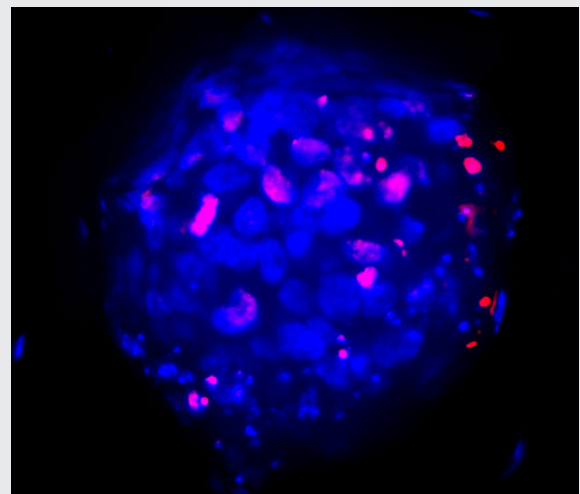
3D Engineered Hydrogel Oncology and Immuno-Oncology Assays Using the Cypre 3D Tumor Model Platform

Fuente: Criver.widen.net / Fecha: 01/02/2024

Conductive hydrogels

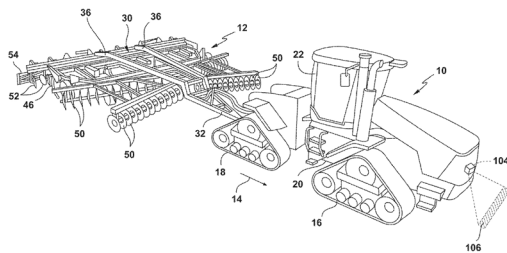
Using proprietary in vitro 3D assays, Cypre’s immuno-oncology platform models key signatures of the tumor microenvironment (TME), such as tumor growth and invasion, immune cell infiltration through the extracellular matrix stroma and stromal fibroblasts, and subsequent T cell-mediated tumor killing. Using Cypre’s VersaGel® and Symphony® 3D hydrogel patterning technology, the platform reproducibly generates 3D patient-derived xenograft (PDX) tu...(+)

Ver más...



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Patentes



System and method for controlling the operation of an agricultural implement

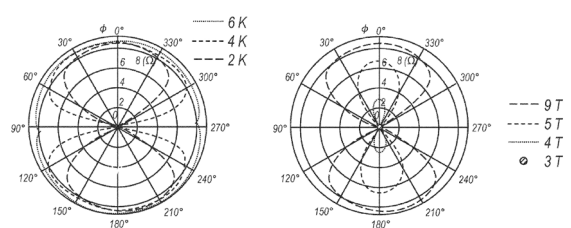
Publicación: Espacenet / **Fecha:** 07/03/2024

IA en Agricultura

Solicitante: CNH IND AMERICA LLC [US]

An agricultural implement includes a frame and a ground-engaging tool supported on the frame, with the ground-engaging tool configured to perform an operation on a field as the agricultural implement travels across the field. The agricultural implement includes an imaging device configured to generate...(+)

[Ver más...](#)



Superconducting ws2-based nanosheet ink

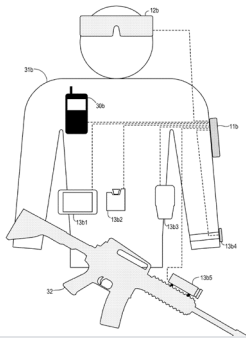
Publicación: Espacenet / **Fecha:** 07/03/2024

Conductive hydrogels

Solicitante: UNIV PRINCETON [US]

An ink may be provided that includes a two-dimensional WS₂ nanosheet and an organic solvent, such as water, and may be free of protective molecules and surfactants. Circuits may be provided that include this ink disposed onto a surface of a substrate (such as a flexible substrate) in various patterns, including, ...(+)

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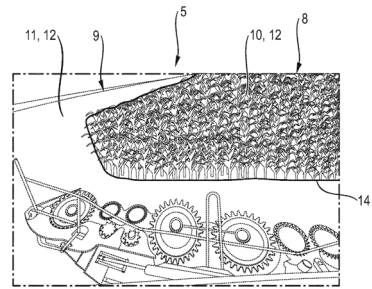
Systems and Methods for Communicat- ing Data in an Operational Environment

Publicación: Espacenet / **Fecha:** 07/03/2024

Advanced GPS

Solicitante: SCIENCE APPL INT CORP [US]
 Each of multiple personal area network (PAN) systems may comprise a hub computing device, an output device, and a plurality of sensors. The hub computing devices may form a mesh network and may communi- cate messages, via the mesh network, based on data from sensors of the PAN systems. The hub compu...(+)

[Ver más...](#)



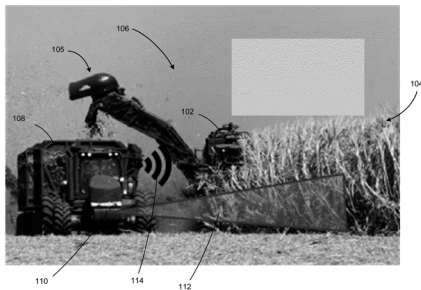
System for determining a crop edge and self-propelled harvester

Publicación: Espacenet / **Fecha:** 06/03/2024

IA en Agricultura

Solicitante: CLAAS SELBSTFAHRENDE ERNTEMASCHI- NEN GMBH [DE]
 Die vorliegende Anmeldung betrifft ein System (1) zur Bestimmung einer Bestandskante (2). Um ein System (1) zur Bestimmung einer Bestandskante (2) bereit- zustellen, das die Nachteile aus dem Stand der Techn- ik behebt und ein Einspuren einer selbstfahren...(+)

[Ver más...](#)



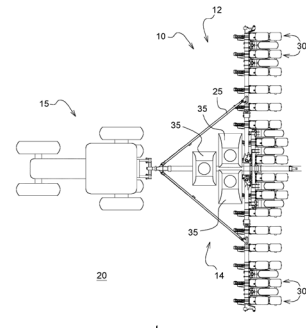
Fusing obstacle data for autonomous vehicles

Publicación: Espacenet / **Fecha:** 06/03/2024

IA en Agricultura

Solicitante:
 Disclosed are a method and apparatus for avoid- ing collisions with obstacles by a first vehicle using sensors on an accompanying second vehicle. The second vehicle navigates proximate the first vehicle while aiming an obstacle detection sensor at a path of the first vehicle to detect objects in the path of...(+)

[Ver más...](#)



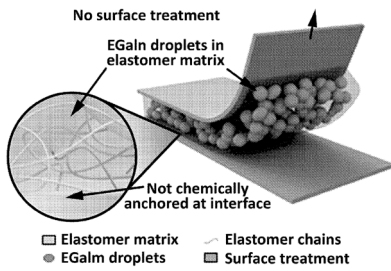
Method for Locating and Planting Sentinel Plants

Publicación: Espacenet / **Fecha:** 29/02/2024

IA en Agricultura

Solicitante: DEERE & CO [US]
 Disclosed are a method and apparatus for avoid- ing collisions with obstacles by a first vehicle using sensors on an accompanying second vehicle. The second vehicle navigates proximate the first vehicle while aiming an obstacle detection sensor at a path of the first vehicle to detect objects in the path of...(+)

[Ver más...](#)



Bonding of liquid-metal elastomer composites to substrates

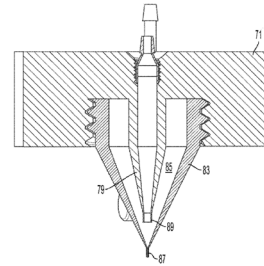
Publicación: Espacenet / **Fecha:** 29/02/2024

Conductive hydrogels

Solicitante: VIRGINIA TECH INTELLECTUAL PROPERTIES INC [US]; VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIV [US]

In various aspects, the disclosure relates to methods of adhering a liquid metal composite to a substrate. The method can include applying a pretreatment to a surface of the substrate to form an activated surfac...(+)

[Ver más...](#)



Tubular structures, methods, and apparatuses for making and using the same

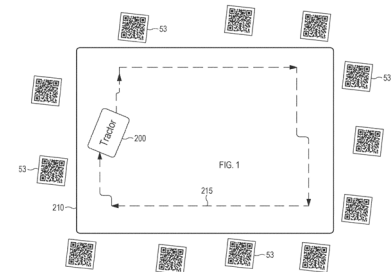
Publicación: Espacenet / **Fecha:** 00/00/2024

Conductive hydrogels

Solicitante: TEXAS A & M UNIV SYS [US]

Tubular structures, apparatuses, and methods for making tubular structures are disclosed herein. Walls of the tubular structures can include a hydrogel. A luminal material extends through the tubular wall. A cell population can live in the luminal material, the tubular wall, and/or on an outer surface of a tubular structure. A...(+)

[Ver más...](#)



Machine readable optical images for gnss-denied navigation and localization of a working machine

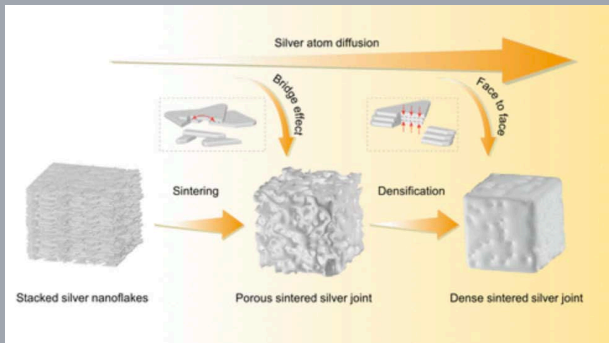
Publicación: Espacenet / **Fecha:** 22/02/2024

Advanced GPS IA en Agricultura

Solicitante: KUBOTA KK [JP]

Some embodiments may include a working machine to perform one or more work tasks in a work area, the working machine comprising: a machine localization system to localize the working machine based on perception sensor observations indicative of d...(+)

[Ver más...](#)



Silver sintering paste and use thereof for connecting components

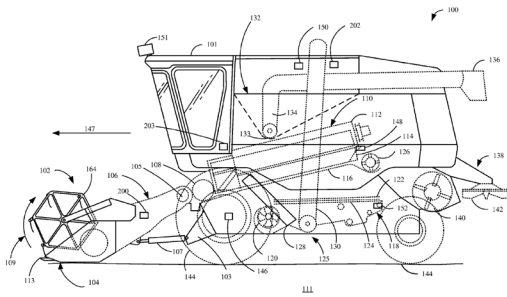
Publicación: Espacenet / **Fecha:** 22/02/2024

Conductive hydrogels

Solicitante: HERAEUS ELECTRONICS GMBH & CO KG [DE]

Silver sintering paste consisting of: (A) 5 to 40 wt.% of silver flakes with a particle size D90 in the range from 5 to 20 μm, (B) 50 to 85 wt.% of silver particles with a particle size D90 in the range from 300 to 1,000 nm, (C) 10 to 25 wt.% of at least one organic solvent, (D) 0 to 2 wt.% of at least one cellulose derivative, and (E) 0 to 10 wt.% o...(+)

[Ver más...](#)



Systems and methods for predictive harvesting logistics

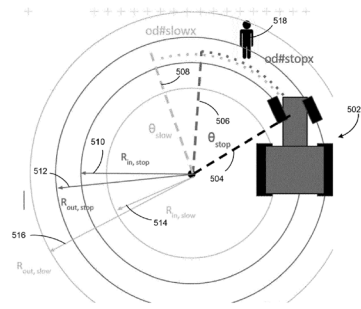
Publicación: Espacenet / Fecha: 15/02/2024

IA en Agricultura

Solicitante: DEERE & CO [US]

A computer implemented method includes receiving a map that maps values of a crop characteristic to different locations across a field; receiving harvester route data, indicative of a planned route of a harvester at the field; identifying a crop characteristic threshold; identifying a material transfer end loca...(+)

Ver más...



Avoiding collisions with autonomous off-road vehicles

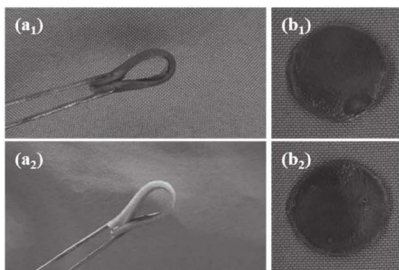
Publicación: Espacenet / Fecha: 07/02/2024

IA en Agricultura

Solicitante: TRIMBLE INC [US]

Disclosed are techniques for avoiding collisions with obstacles by a vehicle, in particular an off-road vehicle. Objects are detected with sensors in a calculated projected path zone of the vehicle footprint based on a vehicle trajectory. Possible path zones on either side of the projected path zone where the vehicle could...(+)

Ver más...



Permeation self-assembly conductive hydrogel/leather-based flexible sensor based on temperature induction and preparation method thereof

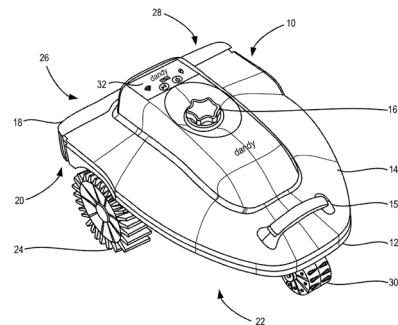
Publicación: Espacenet / Fecha: 02/02/2024

Conductive hydrogels

Solicitante: UNIV SHAANXI SCIENCE & TECH

The invention discloses a penetration self-assembly conductive hydrogel/leather-based flexible sensor based on temperature induction and a preparation method thereof, and belongs to the technical f...(+)

Ver más...



Autonomous weed treating device

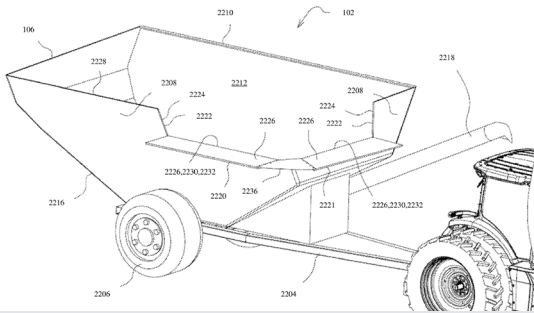
Publicación: Espacenet / Fecha: 01/02/2024

IA en Agricultura

Solicitante: DANDY TECH LLC [US]

An autonomous weed treating device for treating weeds on grassy terrain has a chassis and a plurality of rotating members driven to move the chassis along the grassy terrain. The device includes a camera to acquire images of the grassy terrain and a dispenser to dispense a substance, such as a herbicide. A processing circuit drives the rotating members to move the cha...(+)

Ver más...



Control system facilitating unloading during crop breakthrough harvesting

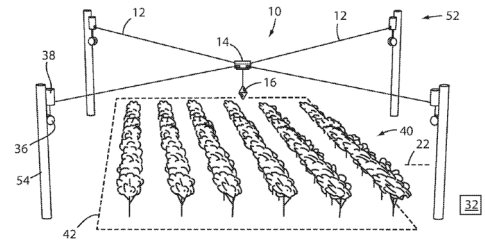
Publicación: Espacenet / Fecha: 01/02/2024

IA en Agricultura

Solicitante: DEERE & CO [US]

A control system controls the operation of a harvester and/or receiving vehicle so that the receiving vehicle can travel adjacent the harvester, behind a harvesting head on the harvester, during a breakthrough pass in the harvesting operation. The control system can include an interlock system w...(+)

Ver más...



Aerial sensor and manipulation platform for farming and method of using same

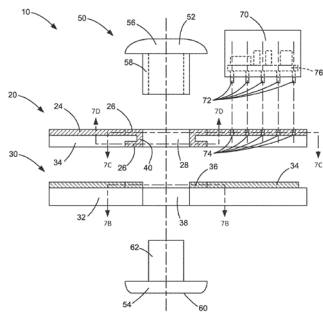
Publicación: Espacenet / Fecha: 01/02/2024

IA en Agricultura

Solicitante: NEATLEAF INC [US]

A robotic sensor and manipulation platform (10) for farming is disclosed, having a robotic base (12, 14) and one or more exchangeable robotic sensing and manipulation tips deployable from the robotic base (12, 14) to commanded positions in a plant growth area (40). The robotic sensing and manipulation tips have a plur...(+)

Ver más...



Wearable neurostimulator with rivet connection

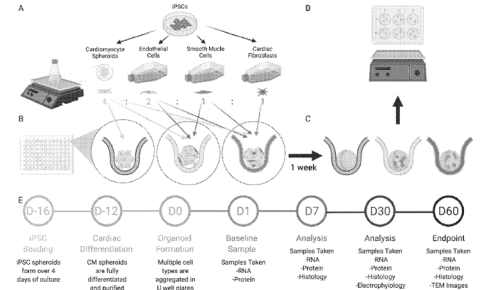
Publicación: Espacenet / Fecha: 01/02/2024

Conductive hydrogels

Solicitante: AVATION MEDICAL INC [US]

A wearable neurostimulator includes a fabric structure, a flexible electrically printed on the fabric structure with exposed electrically conductive portions, and a rigid PCB including an electrical circuit and exposed electrically conductive portions. A rivet includes a shank that extends through the fabric struct...(+)

Ver más...



Three-dimensional culture system for generating cardiac spheroids

Publicación: Espacenet / Fecha: 25/01/2024

Conductive hydrogels

Solicitante: UAB RES FOUND [US]

Disclosed herein is a simple and reproducible 3D-culture-based process for generating cardiac spheroids containing all four cardiac-cell types (cardiomyocytes, endothelial cells, smooth muscle cells, and cardiac fibroblasts) that is compatible with a wide range of applications and research equipment. Subsequent ex...(+)

Ver más...

FEBRERO
MARZO
2024

Informes sectoriales

EUSPA launches new EGNOS Safety of Life Assisted Service for Maritime Users

Fuente: Egnos.gsc-europa.eu / **Fecha:** 13/03/2024

Advanced GPS

EGNOS, Europe's regional satellite-based augmentation system (SBAS), is adding a new service to its repertoire: The EGNOS Safety of Life Assisted Service for Maritime Users (ESMAS). "Although GNSS is the primary means of obtaining positioning, navigation and timing information while at sea, these signals must be augmented using ground-based signals like DGNSS," explains EUSPA Executive Director Rodrigo da Costa. "Designed to complement ground-based augmented signals, ES ...(+)

Descargar



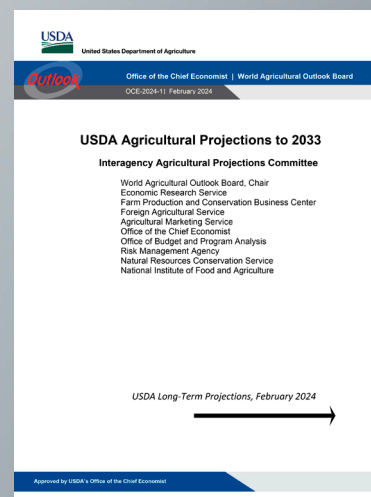
USDA Agricultural Projections to 2033

Fuente: Usda.gov / **Fecha:** 14/02/2024

IA en Agricultura

This report provides projections for the agricultural sector to 2033. Projections cover agricultural commodities, agricultural trade, and aggregate indicators of the sector, such as farm income. The projections are based on specific assumptions, including a macroeconomic scenario, existing U.S. policy, and current international agreements. The Agriculture Improvement Act of 2018 is assumed to remain in effect through the projection period, as no agreement had been reached on a new Farm Bill as of October 2023. The projections are one representa...(+)

Descargar



U.S. Statement – Agenda Item 8 – Recent Developments in Global Navigation Satellite Systems – 61st STSC

Fuente: USmission.gov / Fecha: 01/02/2024

Advanced GPS

Thank you, Chair and distinguished delegates. I think we all understand the importance of Global Navigation Satellite Systems and the value that they bring to the world economy. The United States is proud to maintain the Global Positioning System or GPS, free of charge to the world, serving as a reliable pillar for services that depend on this technology. Last year we celebrated the 50th anniversary of the GPS program ...(+)

Descargar



Aplicaciones innovadoras de hidrogeles supramoleculares

Fuente: Pt-mexico.com / Fecha: 01/02/2024

Conductive hydrogels

Explore el papel de los hidrogeles en la química supramolecular. Desde adhesivos quirúrgicos hasta nanocompuestos para el tratamiento del cáncer. Conozca las últimas tendencias. La química supramolecular es considerada una de las áreas importantes relacionadas con los hidrogeles que, al formar redes entrecruzadas, les proporciona la afinidad y la dinámica subyacentes para controlar los factores clave de su estabilidad mecánica, además de ofrecer la capacidad de proteger y ...(+)

Descargar



Navisp: Element 1 Work Plan 2024

Fuente: Navisp.esa.int / Fecha: 11/01/2024

Advanced GPS

The Program Board Navigation, the ESA body delegated for the planning of the activities in the ESA Navigation directorate, approved in November 2023 the plan of the activities to be run in 2024 under the NAVISP Element 1, the part of the programme devoted to the Positioning, Navigation and Timing (PNT) technology innovation. Some final checks are being done for the biggest activities, but EL1-087 on the Verifiability of Machine Learning is already out! NAVISP Element 1 has the ambition to influence the Positioning, Navigation and Timing research, ...(+)

Descargar



Advancing Digital Public Infrastructure for the Agriculture Sector

Fuente: Weforum.org / Fecha: 01/01/2024

IA en Agricultura

Digital public infrastructure (DPI) refers to the foundational digital framework that nations build for effective governance and citizen services. The most common and generic types of DPI relate to digital identity, digital payment and data exchange. While there are multiple examples of the first two types globally, DPIs of the data exchange type are just emerging. Many countries throughout the world are already investing in DPI. Examples include Estonia's digital ID and e-reside...(+)

Descargar



White Paper: Modern GNSS/GPS signals: moving from single-band to dual-band

Fuente: U-blox.com / Fecha: 27/10/2023

Advanced GPS

Migration from L1 to L1/L5 or L1/L2 signals: context, use cases, pros, and cons. The positioning industry is experiencing a migration that involves the replacement of single-band with multiple-band technology. As with any transition, the path is not straightforward and involves various intricacies. Download this white paper and learn more about: The evolution of L-bands. The benefits of multiple-band technology. Best options depending on different use case. Abstract: This white p...(+)

Descargar



European Parliament Artificial intelligence in the agri-food sector Applications, risks and impacts

Fuente: Forumforag.com / Fecha: 01/03/2023

IA en Agricultura

An increasingly digitised society involves recording human activity and monitoring products and processes. In the agri-food sector this gives rise to large quantities of data. At the same time, data is also generated for research and scientific experiments. There is a growing interest in the applications of artificial intelligence (AI) in the agri-food sector to extract or exploit the information that can be detected in these data sets. A...(+)

Descargar



FEBRERO
MARZO
2024

Publicaciones científicas

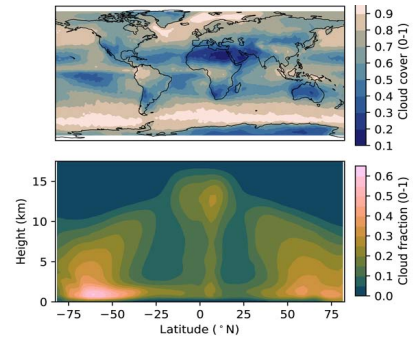
A global gridded dataset for cloud vertical structure from combined CloudSat and CALIPSO observations

Fuente: Ecssd.copernicus.org
Fecha: 14/03/2024

Advanced GPS IA en Agricultura



The vertical structure of clouds has a profound effect on the global energy budget, the global circulation, and the atmospheric hydrological cycle. The CloudSat and Cloud-Aerosol Lidar and Infrared Pathfinder Satellite Observations (CALIPSO) missions have taken complementary, colocated observations of cloud vertical structure for over a decade. However, no globally gridded dataset is available to the public for the full length of this unique combined data record. Here we present the 3S-GEOPROF-COMB product (Bertrand et al. 2023, <https://doi.org/10.5281/zenodo.8057791>), a globally gridded (1...(+)



Ver más... →

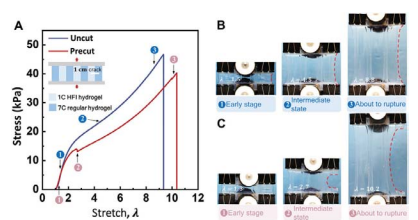
Designing Ultratough Single-Network Hydrogels with Centimeter-Scale Fractocohesive Lengths via Inelastic Crack Blunting

Fuente: Wiley.com
Fecha: 07/03/2024

Conductive hydrogels



Fractocohesive length, defined as the ratio of fracture toughness to work of fracture, measures the sensitivity of materials to fracture in the presence of flaws. The larger the fractocohesive length, the more flaw-tolerant and crack-resistant the hydrogel. For synthetic soft materials, the fractocohesive length is short, often on the scale of 1 mm. Here, highly flaw-insensitive (HFI) single-network hydrogels containing an entangled inhomogeneous polymer network of widely distributed chain lengths are designed. The HFI hydrogels demonstrate a centimeter-scale fractocohesive length of 2.21 cm, w...(+)



Ver más... →

This Injectable Hydrogel Mitigates Damage to the Right Ventricle of the Heart

Fuente: Ucsd.edu
Fecha: 06/03/2024

Conductive hydrogels

An injectable hydrogel can mitigate damage to the right ventricle of the heart with chronic pressure overload, according to a new study published March 6 in *Journals of the American College of Cardiology: Basic to Translational Science*. The study, by a research team from the University of California San Diego, Georgia Institute of Technology and Emory University, was conducted in rodents. In 2019, this same hydrogel was shown to be safe in humans through an FDA-approved Phase 1 trial in people who suffered a heart attack. As a result of the new preclinical study, the FDA approved an investigational new ...(+)



Ver más...



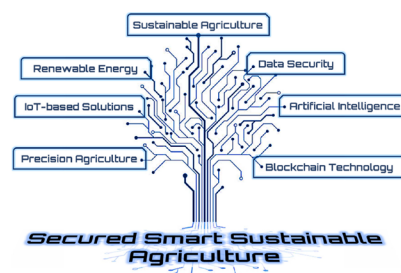
UC San Diego

Sustainable AI-based production agriculture: Exploring AI applications and implications in agricultural practices

Fuente: Scienedirect.com
Fecha: 01/03/2024

IA en Agricultura

In general, agriculture plays a crucial role in human survival as a primary source of food, alongside other sources such as fishing. Unfortunately, global warming and other environmental issues, particularly in less privileged nations, hamper the Agricultural sector. It is estimated that a range of 720 to 811 million individuals experienced food insecurity. Today's agriculture faced significant difficulties and obstacles, as do the surveillance and monitoring systems (climate, energy, water, fields, works, cost, fertilizers, diseases, etc.). The COVID-19 pandemic has exacerbated the susceptibilities and insufficiencies i...(+)



Ver más...



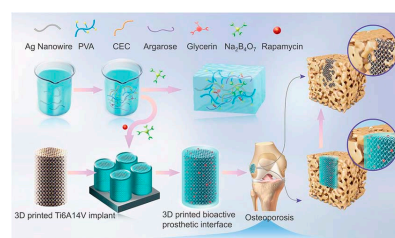
FIU FLORIDA INTERNATIONAL UNIVERSITY

Conductive hydrogels based on tragacanth and silk fibroin containing dopamine functionalized carboxyl-capped aniline pentamer

Fuente: Scienedirect.com
Fecha: 01/03/2024

Conductive hydrogels

Hydrogels possessing both conductive characteristics and notable antibacterial and antioxidant properties hold considerable significance within the realm of wound healing and recovery. The object of current study is the development of conductive hydrogels with antibacterial and antioxidant properties, emphasizing their potential for effective wound healing, especially in treating third-degree burns. For this purpose, various conductive hydrogels are developed based on tragacanth and silk fibroin, with variable dopamine functionalized carboxyl-capped aniline pentamer (CAP@DA). The FTIR ana...(+)



Ver más...



Progress of Research on Conductive Hydrogels in Flexible Wearable Sensors

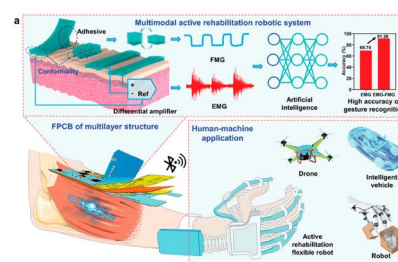
Fuente: Mdpi.com

Fecha: 24/02/2024

Conductive hydrogels



Conductive hydrogels, characterized by their excellent conductivity and flexibility, have attracted widespread attention and research in the field of flexible wearable sensors. This paper reviews the application progress, related challenges, and future prospects of conductive hydrogels in flexible wearable sensors. Initially, the basic properties and classifications of conductive hydrogels are introduced. Subsequently, this paper discusses in detail the specific applications of conductive hydrogels in different sensor applications, such as motion detection, medical diagnostics, electronic skin, and human-comp...(+)



Ver más...



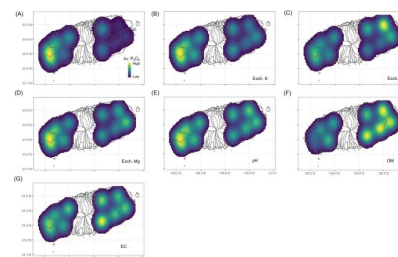
An agricultural digital twin for mandarins demonstrates the potential for individualized agriculture

Fuente: Nature.com

Fecha: 20/02/2024

IA en Agricultura

A digital twin is a digital representation that closely resembles or replicates a real world object by combining interdisciplinary knowledge and advanced technologies. Digital twins have been applied to various fields, including to the agricultural field. Given big data and systematic data management, digital twins can be used for predicting future outcomes. In this study, we endeavor to create an agricultural digital twin using mandarins as a model crop. We employ an Open API to aggregate data from various sources across Jeju Island, covering an area of approximately 185,000 hectares. The collected data are visua ...(+)



Ver más...



Instant tough adhesion of polymer networks

Fuente: Pnas.org

Fecha: 20/02/2024

Conductive hydrogels

This work presents a simple strategy to generate instant tough adhesion between hydrogels using chitosan films. Strong film mechanics and adhesive polymer films with pKa around physiological pH are key for achieving adhesion through interfacial topological entanglement and other non-covalent interactions such as H-bonding and Van der Waals forces. These findings and the simplicity of this technology support clinical applications and have important implications for designing composite hydrogels and interfacing devices with the human body where fast and robust adhesion between gels and other polym...(+)



Ver más...



WYSS INSTITUTE
for Biologically Inspired Engineering

A temperature and pressure dual-responsive, stretchable, healable, adhesive, and biocompatible carboxymethyl cellulose-based conductive hydrogels for flexible wearable strain sensor

Fuente: Sciedirect.com

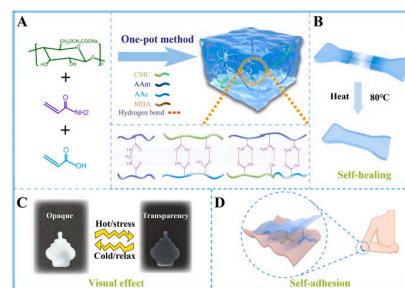
Fecha: 15/02/2024

Conductive hydrogels



Shaanxi University
of Science and Technology

The study aimed to develop a novel temperature and pressure dual-responsive conductive hydrogel with self-healing, self-adhesive, biocompatible, and stretchable properties, for the development of multi-functional anti-counterfeiting and wearable flexible electronic materials. A conductive hydrogel based on carboxymethyl cellulose (CMC) was synthesized by simple "one pot" free radical polymerization of CMC, acrylamide (AAm) and acrylic acid (AAc). The hydrogel displayed temperature responsiveness and possessed an upper critical solution temperature (UCST) value. In addition, hydrogels also had ...(+)



Ver más...



Photoprintable Radiopaque Hydrogels for Regenerative Medicine

Fuente: Acs.org

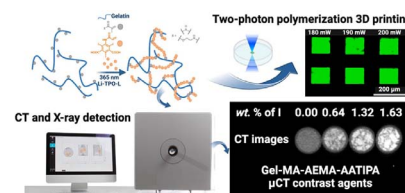
Fecha: 14/02/2024

Conductive hydrogels



GHENT
UNIVERSITY

Biodegradable and bioactive gelatin-based hydrogels improve tissue regeneration and wound healing by supporting cell proliferation. Suitably functionalized gelatin hydrogels can even be processed by light-based 3D printing into any required shape, and their physicochemical and biological properties can be modified by incorporating various comonomers into their structure. However, such hydrogels are difficult to monitor in vivo, which has hampered further developments and clinical translation. Herein, we prepared gelatin-based hydrogels with radiopacity by incorporation with biocompatible ...(+)



Ver más...



Effect of Predamage on the Fracture Energy of Double-Network Hydrogels

Fuente: Acs.org

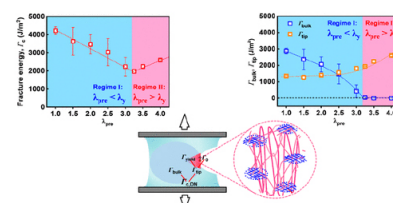
Fecha: 13/02/2024

Conductive hydrogels



北海道大学
HOKKAIDO UNIVERSITY

Double-network (DN) hydrogels are tough soft materials, and the high fracture resistance can be attributed to the formation of a large damage zone (internal fracture of the brittle first network) around the crack tip. In this work, we studied the effect of predamage in the brittle network on the fracture energy Γ_c of DN hydrogels. The prestretch of the first network was induced by prestretching the DN gels to pre-stretch ratio λ_{pre} . Depending on the λ_{pre} in relative to the yielding stretch ratio λ_y , above which the brittle first network starts to break into discontinuous fragments inside DN gels, two regimes were obser ...(+)



Ver más...



Electrochemically Enhanced Antimicrobial Action of Plasma-Activated Poly(Vinyl Alcohol) Hydrogel Dressings

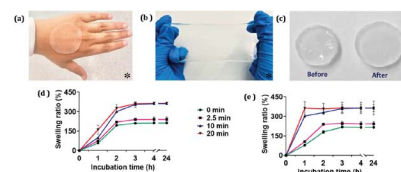
Fuente: Wiley.com

Fecha: 12/02/2024

Conductive hydrogels



This paper presents and explains the principle behind an electrochemical method to enhance the antimicrobial action of plasma-activated hydrogel therapy (PAHT) in the context of wound decontamination. The process involves grounding and hydrating poly(vinyl alcohol) (PVA) hydrogel films during treatment with a helium (He) plasma jet. This electrochemically enhances production of hydrogen peroxide (H₂O₂), which is a major antibacterial agent produced in the PVA hydrogel. Production of H₂O₂ is shown to be electrically enhanced through electron dissociation reactions, and through reactions asso...(+)



Ver más...



Evaluating responses by ChatGPT to farmers' questions on irrigated lowland rice cultivation in Nigeria

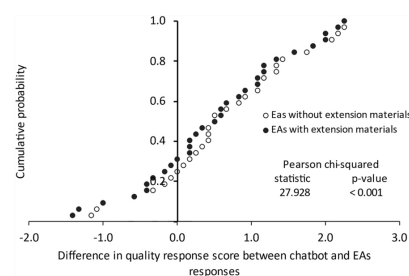
Fuente: Nature.com

Fecha: 10/02/2024

IA en Agricultura



The limited number of agricultural extension agents (EAs) in sub-Saharan Africa limits farmers' access to extension services. Artificial intelligence (AI) assistants could potentially aid in providing answers to farmers' questions. The objective of this study was to evaluate the ability of an AI chatbot assistant (ChatGPT) to provide quality responses to farmers' questions. We compiled a list of 32 questions related to irrigated rice cultivation from farmers in Kano State, Nigeria. Six EAs from the state were randomly selected to answer these questions. Their answers, along with those of ChatGPT, were assessed by four eva...(+)



Ver más...



Regulation of Cell Adhesion on Physically Crosslinked Hydrogels Composed of Amino Acid-Based Polymers by Changing Elastic Modulus Using Shape Fix/Memory Properties

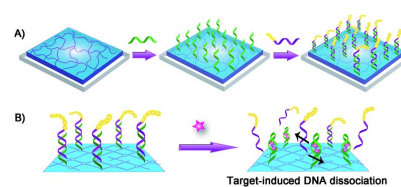
Fuente: Wiley.com

Fecha: 09/02/2024

Conductive hydrogels



The elastic modulus of hydrogels is one of the most important factors for controlling cell fate. In this study, hydrogels composed of poly(N-acryloylglycinamide) (PNAGAm) grafted with arginine (R)-glycine (G)-aspartic acid (D)-serine (S) peptide is designed without a chemical crosslinker. The hydrogels are prepared by the conventional radical copolymerization of N-acryloylglycinamide with a polymerizable RGDS peptide. The peptide grafting ratio is easily controlled by adjusting the feed composition for polymerization. The hydrogels exhibit thermo-responsiveness of the upper critical solution temp...(+)



Ver más...



2D/3D-printed PEDOT/PSS conductive hydrogel for biomedical sensors

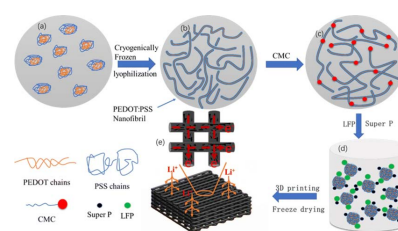
Fuente: Accscience.com

Fecha: 16/01/2024

Conductive hydrogels



The integration of conductive hydrogels and advanced three-dimensional (3D) printing is a trigger of the development of biomedical sensors for healthcare diagnostics and personalized treatment. Poly(3,4-ethylenedioxythiophene):poly(styrene sulfonate) (PEDOT:PSS) is a versatile conductive hydrogel materials renowned for its exceptional conductivity and hydrophilicity, and 3D printing technology allows for precise and customized fabrication of electronic components and devices. In this review, we aim to explore the potential of 3D-printed PEDOT/PSS conductive hydrogel in the fabricatio...(+)



Ver más... →

Cationic Hydrogels Modulate Neural Stem and Progenitor Cell Proliferation and Differentiation Behavior in Dependence of Cationic Moiety Concentration in 2D Cell Culture

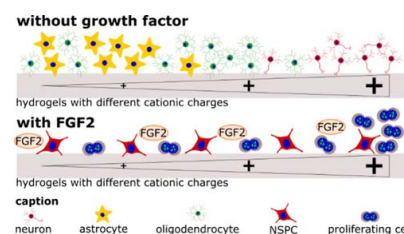
Fuente: Acs.org

Fecha: 16/01/2024

Conductive hydrogels



The central nervous system (CNS) has a limited regenerative capacity because a hostile environment prevents tissue regeneration after damage or injury. Neural stem/progenitor cells (NSPCs) are considered a potential resource for CNS repair, which raises the issue of adequate cultivation and expansion procedures. Cationic charge supports the survival and adhesion of NSPCs. Typically, tissue culture plates with cationic coatings, such as poly-L-ornithine (PLO), have been used to culture these cell types (NSPCs). Yet presently, little is known about the impact of cationic charge concentration on the viability, ...(+)



Ver más... →

Fertilizer management for global ammonia emission reduction

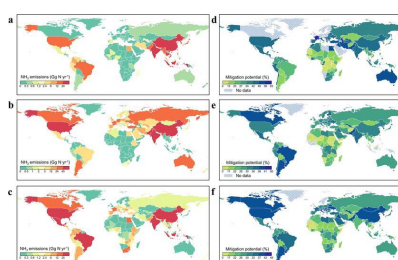
Fuente: Nature.com

Fecha: 31/01/2024

IA en Agricultura



Crop production is a large source of atmospheric ammonia (NH₃), which poses risks to air quality, human health and ecosystems^{1,2,3,4,5}. However, estimating global NH₃ emissions from croplands is subject to uncertainties because of data limitations, thereby limiting the accurate identification of mitigation options and efficacy^{4,5}. Here we develop a machine learning model for generating crop-specific and spatially explicit NH₃ emission factors globally (5-arcmin resolution) based on a compiled dataset of field observations. We show that global NH₃ emissions from rice, wheat and maize fields in 2...(+)



Ver más... →

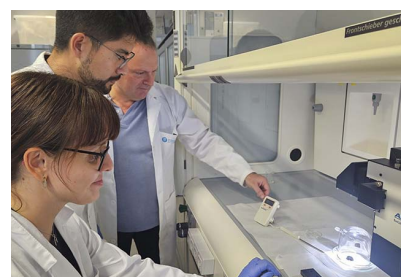
Desenvolupen un nou hidrogel amb capacitat per potabilitzar l'aigua salina amb la llum solar i per a teràpies mèdiques

Fuente: UPC.edu
 Fecha: 15/01/2024

Conductive hydrogels



Investigadors del grup de recerca d'Innovació en Materials i Enginyeria Molecular - Biomaterials per a Teràpies Regeneratives (IMEM-BRT) de la UPC treballen en un hidrogel termosensible amb diverses aplicacions, entre les quals destaquen la dessalinització de l'aigua de mar amb radiació solar i la creació de nous adhesius biomèdics per a teràpies semi-invasives i per al diagnòstic mèdic. Segons estimacions de l'ONU, tres de cada quatre persones al món es veuran afectades per la sequera el 2050, un problema que actualment afecta al voltant de 55 milions de persones de forma dir...(+)



Ver más...



Estimating Compositions and Nutritional Values of Seed Mixes Based on Vision Transformers

Fuente: Spj.science.org
 Fecha: 10/11/2023

IA en Agricultura



The cultivation of seed mixtures for local pastures is a traditional mixed cropping technique of cereals and legumes for producing, at a low production cost, a balanced animal feed in energy and protein in livestock systems. By considerably improving the autonomy and safety of agricultural systems, as well as reducing their impact on the environment, it is a type of crop that responds favorably to both the evolution of the European regulations on the use of phytosanitary products and the expectations of consumers who wish to increase their consumption of organic products. However, farmers find it diff...(+)



Ver más...



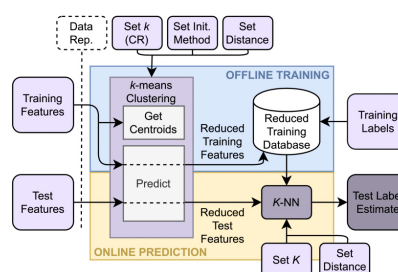
EWok: Towards Efficient Multidimensional Compression of Indoor Positioning Datasets

Fuente: IEEE.org
 Fecha: 01/05/2024

Advanced GPS



Indoor positioning performed directly at the end-user device ensures reliability in case the network connection fails but is limited by the size of the Received Signal Strength (RSS) radio map necessary to match the measured array to the device's location. Reducing the size of the RSS database enables faster processing, and saves storage space and radio resources necessary for the database transfer, thus cutting implementation and operation costs, and increasing the quality of service. In this work, we propose EWok, an Element-Wise cOmpression using k -means, which reduces the size of the individua...(+)



Ver más...



