



SmartLivingPlat

Plataforma Tecnológica de la Domótica
y las Ciudades Inteligentes



Boletín de Vigilancia Tecnológica

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SMART BUILDINGS
SMART CITIES
INDUSTRIA 4.0

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NOTICIAS

AI Machines Have Beaten Moore's Law Over The Last Decade, Say Computer Scientists

Publicada en <https://www.discovermagazine.com>, 21/02/2022.

Since the 1990s, computer scientists have measured the performance of the world's most powerful supercomputers using benchmarking tasks. Each month, they publish a ranking of the top 500 machines with fierce competition among nations to come out on top. The history of this ranking shows that over time, supercomputing performance has increased in line with Moore's Law, doubling roughly every 14 months.



[ver más...](#)

Novel IBC solar cell architecture based on crystal photonics shows efficiency potential of 29.1%

Publicada en <https://pv-magazine-usa.com>, 21/02/2022.

Scientists in Germany designed a poly-Si on oxide (POLO) interdigitated back-contact (IBC) solar cell integrating photon crystals and found this architecture has the potential to reach a power conversion efficiency of over 28%, which would be 1% higher than the current practical limit set by the scientific community. They also found that by improving passivation, the efficiency may be raised up to 29.1%.



[ver más...](#)

3D Printing at the Winter Olympics

Publicada en <https://wohlersassociates.com>, 20/02/2022.

This weekend marks the end of the 2022 Winter Olympics in Beijing, China. I am always impressed by the athletes. Nils van der Poel of Sweden broke his previous world record for speed skating the 10 km (6.2 miles). The U.S. team will return home with many metals in several events, including freestyle skiing and the monobob.

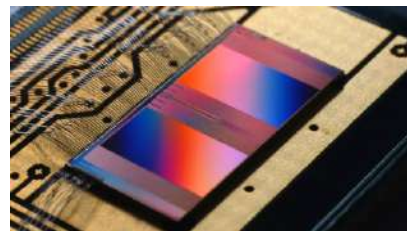


[ver más...](#)

AI Overcomes Stumbling Block on Brain-Inspired Hardware

Publicada en <https://www.quantamagazine.org>, 17/02/2022.

Algorithms that use the brain's communication signal can now work on analog neuromorphic chips, which closely mimic our energy-efficient brains. The BrainScaleS-2 neuromorphic chip, developed by neuromorphic engineers at Heidelberg University, uses tiny circuits that mimic the analog computing of the real neurons in our brains.



[ver más...](#)

Transfers of funds and certain crypto-assets – EP Draft Report

Publicada en <https://portal.ieu-monitoring.com/>, 14/02/2022.

The Transfer of Funds Regulation (EU) 2015/847 was adopted to enhance the traceability of transfers of funds by requiring payment service providers to ensure the transmission of information on the payer and the payee throughout the payment chain (the so called ‘travel rule’), with the view to prevent, detect and investigate possible misuse of funds for money laundering and terrorist financing.

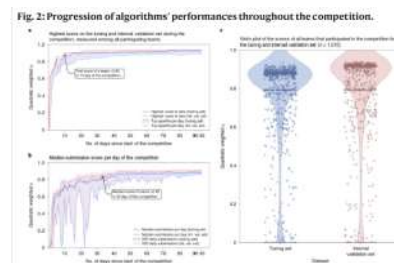
[ver más...](#)

AI accurately diagnoses prostate cancer, study shows

Publicada en ScienceDaily, 13/01/2022.

Researchers have completed a comprehensive international validation of artificial intelligence (AI) for diagnosing and grading prostate cancer. The study shows that AI systems can identify and grade prostate cancer in tissue samples from different countries equally well as pathologists. The results suggest AI systems are ready to be responsibly introduced as a complementary tool in prostate cancer care, researchers say.

[ver más...](#)



EU regulator calls for public input on DLT for trading and settlement

Publicada en www.cointelegraph.com, 05/01/2022.

The European Union's securities regulator recently published a “call for evidence” to invite stakeholders to share their feedback on the regulations for regulatory technical standards (RTS) on reporting and transparency on the DLT pilot expected to be implemented next year.



[ver más...](#)

5th Demonstration Test of Fully Autonomous Ship Navigation Successfully Completed

Publicada en <https://www.nippon-foundation.or.jp>, 03/01/2022.

The fifth demonstration test of The Nippon Foundation MEGURI2040 Fully Autonomous Ship Program, of a fully autonomous container ship and its Fleet Operation Center for emergency monitoring and operation, was successfully carried out between Tokyo Bay and Ise Bay from February 26 to March 1. The test, using the container ship SUZAKU, demonstrated for the first time the use of a comprehensive fully autonomous navigation system (including remote control and land support) for a container ship operating in a congested sea area.



[ver más...](#)

EMPRESAS Y MERCADOS

Brands that have filed metaverse trademarks—and what it all means

Publicada en <https://adage.com>, 28/02/2022.

The nascent metaverse, which is an immersive online world that incorporates an enhanced reality with other emerging technologies, is welcoming new brands on a daily basis. Amid the rise of NFTs and Web3, the next iteration of the internet, brands ranging from Nike to defunct Blockbuster have actively sought to claim prospective assets by filing trademarks. The United States Patent and Trademark Office has seen a surge of registrations for brands to protect themselves in these digital worlds.



[ver más...](#)

Behind Intel's HPC Chip that Will Pierce the Exascale Barrier

Publicada en <https://spectrum.ieee.org>, 25/02/2022.

Ponte Vecchio packs in a lot of silicon to power the Aurora supercomputer. On Monday, Intel unveiled new details of the processor that will power the Aurora supercomputer, which is designed to become one of the first U.S.-based high-performance computers (HPCs) to pierce the exaflop barrier—a billion billion high-precision floating-point calculations per second. Intel Fellow Wilfred Gomes told engineers virtually attending the IEEE International Solid State Circuits Conference this week that the processor pushed Intel's 2D and 3D chiplet integration technologies to the limits.



[ver más...](#)

RISC-V AI Chips Will Be Everywhere Esperanto Technology's chip heralds new era in open-source architecture; Intel set to cash in

Publicada en <https://spectrum.ieee.org>, 24/02/2022.

The adoption of RISC-V, a free and open-source computer instruction set architecture first introduced in 2010, is taking off like a rocket. And much of the fuel for this rocket is coming from demand for AI and machine learning. According to the research firm Semico, the number of chips that include at least some RISC-V technology will grow 73.6 percent per year to 2027, when there will be some 25 billion AI chips produced, accounting for US \$291 billion in revenue.



[ver más...](#)

Digital Babel Fish: The holy grail of Conversational AI

Publicada en <https://analyticsindiamag.com>, 23/02/2022.

Babel Fish, the “oddest thing in the universe”, is a species of fish featured in Douglas Adam’s magnum opus, The Hitchhiker’s Guide to Galaxy. The fish, worn as an earpiece, translates all the languages that ever existed instantly. Babel Fish is no longer the stuff of dreams: Thanks to advances in AI, especially in the NLP domain, many tech giants are in the process of building a universal translator.



[ver más...](#)

Meta tells advertisers mixed reality could be a few years away

Publicada en <https://www.reuters.com>, 18/02/2022.

Feb 18 (Reuters) - Technology that merges the virtual and physical worlds could start to become a reality for consumers in a few years, Facebook owner Meta Platforms Inc (FB.O) has told advertising agencies, giving more details of its vision for the creation of the metaverse.



[ver más...](#)

White Castle Expands Partnership with Miso Robotics to Install Flippy 2 in 100 New Locations

Publicada en <https://misorobotics.com>, 15/02/2022.

PASADENA, Calif., Feb. 15, 2022 — Today, White Castle – the world’s first fast-food hamburger chain – announced plans to further expand its work with Miso Robotics and install Flippy 2 in 100 standalone locations. The announcement is the latest milestone for the partnership, which began in September 2020 with the deployment of the original Flippy to a White Castle in the Chicagoland area. Following an upgrade to Flippy 2 in November 2021, White Castle’s commitment to Miso’s technology was cemented after seeing an immediate positive impact on daily operations and the productivity of its team members.



[ver más...](#)

7 Smart Home Energy Monitors to Save Electricity And Cash

Publicada en <https://interestingengineering.com>, 12/01/2022.

A home energy monitor is an effective way to keep an eye on the amount of power you are using at home. Energy monitors can be installed anywhere in your house and will automatically transmit the data to your smartphone. This data will be stored for review at a later date.



[ver más...](#)

PATENTES

Dynamic-static data hybrid-driven reduced-form grey box space identification method for hammerstein nonlinear industrial system

Publicada en Patentscope_Domótica, 17/02/2022.

Solicitante: CHONGQING UNIVERSITY OF POSTS AND TELECOMMUNICATIONS [CN]/

The present disclosure relates to a dynamic-static data hybrid-driven reduced-form grey box space identification method for a Hammerstein nonlinear industrial system, and relates to the field of nonlinear system identification under control theory and control engineering. The method comprises: S1: collecting static and dynamic data of the system

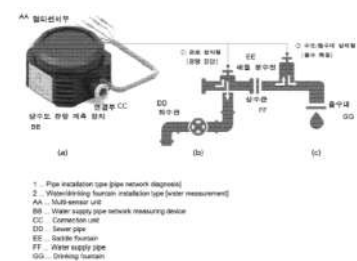
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Integrated information provision system using multi-item water quality measurement for building smart water city

Publicada en Patentscope_Domótica, 17/02/2022.

Solicitante: WATER EYES CO., LTD [KR]

The present invention relates to an integrated information provision system using multi-item water quality measurement for building a smart water city, and, more specifically, to an integrated information provision system using multi-item water quality measurement for building a smart water city, which is installed in a water pipe, a faucet, or a sewage inlet



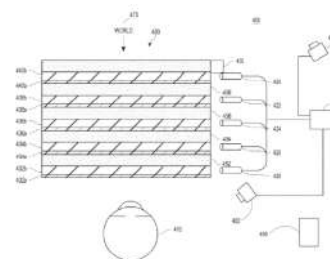
[ver más...](#)

Automatic control of wearable display device based on external conditions

Publicada en Patentscope_Domótica, 10/02/2022.

Solicitante: Magic Leap, Inc.

Embodiments of a wearable device can include a head-mounted display (HMD) which can be configured to display virtual content. While the user is interacting with visual or audible virtual content, the user of the wearable may encounter a triggering event



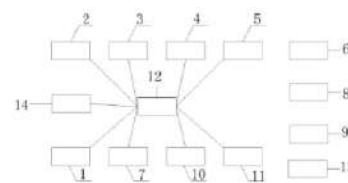
[ver más...](#)

Building integral fire safety intelligent system

Publicada en Patentscope_Domótica, 10/02/2022.

Solicitante: JIANG, Daolian [CN]

A building integral fire safety intelligent system, comprising a fire power supply (13) connected to a fire line and used for supplying power to the fire line. The building integral fire safety intelligent system further comprises, arranged in each floor of a building and connected with the fire line: a smoke and heat discharging device



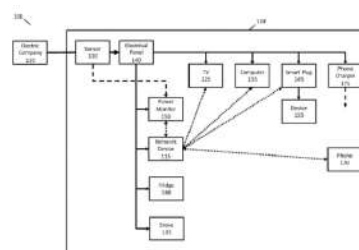
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Electrical panel for identifying devices connected to a smart plug

Publicada en Patentscope_Domótica, 10/02/2022.

Solicitante: Sense Labs, Inc.

An electrical panel or an electrical meter may provide improved functionality by interacting with a smart plug. A smart plug may provide a smart-plug power monitoring signal



[ver más...](#)

Structured cabling for "intelligent buildings"

Publicada en Patentscope_Domótica, 10/02/2022.

Solicitante: NIR S.R.L. [IT]

The present invention indicates an innovative wiring architecture for living environments, which meets the needs determined by the fast diffusion of the "intelligent buildings", i.e., buildings where a significant presence of electrical devices called "smart objects" is expected.

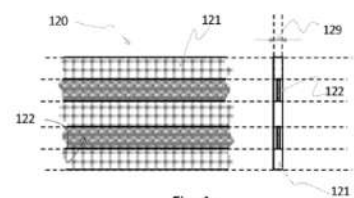


Fig. 1a

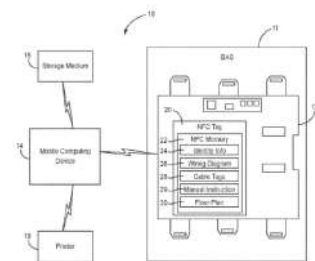
[ver más...](#)

Method and system for retrieving building automation system controller information using near field communication

Publicada en Patentscope_Domótica, 03/02/2022.

Solicitante: Carrier Corporation

A process for retrieving configuration information for a controller of a building automation system (BAS) includes verifying login information on a mobile computing device to ensure the mobile computing device has authority to access a wiring diagram. T



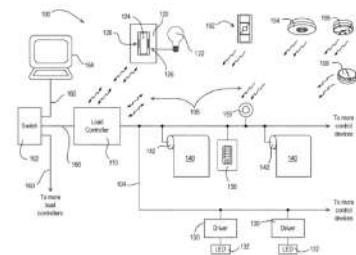
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Method of Automatically Controlling Motorized Window Treatments

Publicada en Patentscope_Domótica, 03/02/2022.

Solicitante: Lutron Technology Company LLC

A load control system automatically controls the amount of daylight entering a building through at least one window of a non-linear façade of the building. The load control system comprises at least two motorized window treatments located along the non-linear façade



[ver más...](#)

System and methods for determining operational relationships in building automation and control networks

Publicada en Patentscope_Domótica, 03/02/2022.

Solicitante: ONBOARD DATA, INC. [US]

Techniques for determining point type, equipment type, equipment instance, and equipment relationship for different points associated with pieces of equipment located at a building is described.

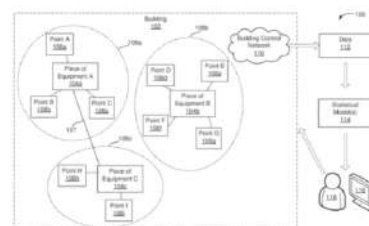


FIG. 1

[ver más...](#)

3D-Printing system and method to automatically build a building

Publicada en Patentscope_Domótica, 27/01/2022.

Solicitante: ITALIANO, Antonino [IT]

A system (1) to automatically build at least one wall (100a) of a building. The system comprises: a formwork (2), an unloading device (4), a spray device (7) and an electronic control unit (9) which controls the unloading device (4)

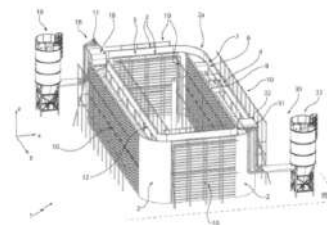


FIG. 1

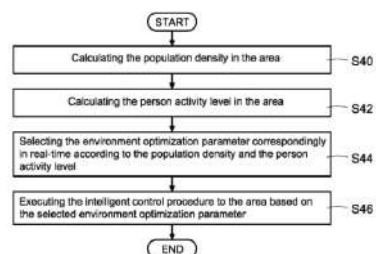
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Integrated intelligent building management system

Publicada en Patentscope_Domótica, 20/01/2022.

Solicitante: Chicony Power Technology Co., Ltd.

An integrated intelligent building management system includes: a positioning device, recording and uploading a movement information and a device-assigned ID of a target person



[ver más...](#)

Integrated intelligent building management system and management method thereof

Publicada en Patentscope_Domótica, 20/01/2022.

Solicitante: Chicony Power Technology Co., Ltd.

An integrated intelligent building management system and a management method thereof are disclosed. The system includes a first cloud management system having a project management database, an intelligent building system managed

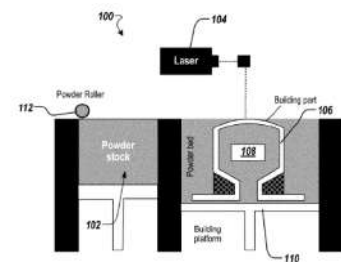
[ver más...](#)

Metal 3D printing systems for using sand as supports

Publicada en Patentscope_Domótica, 20/01/2022.

Solicitante: Hitachi, Ltd.

A 3-dimensional printing system for manufacturing a part is provided. The system includes a building platform having a deposited pattern of metal powder, a sand dispensing nozzle selectively supplying sand to the building platform, a binder dispensing nozzle selectively supplying binder material to the building platform,



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Method for controlling the functioning of at least one smart home appliance and network system

Publicada en Patentscope_Domótica, 20/01/2022.

Solicitante: Electrolux do Brasil S.A.

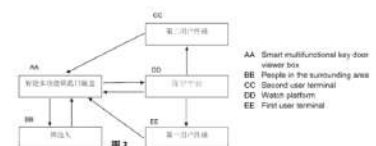
A method for controlling the functioning of at least one smart home appliance of a network system comprising a cloud server, a terminal device and at least one smart home appliance registered in said cloud server.

[ver más...](#)

Smart multifunctional key door viewer box and system

Publicada en Patentscope_Domótica, 20/01/2022.

Solicitantes: SHENZHEN JUCIYUN TECHNOLOGY CO., LTD. [CN]
 A smart multifunctional key door viewer box, comprising a box body, a warning module (1-1), an identification module (1-2), an instruction receiving module (1-3), a storage sensing module (1-4), an on/off module (1-5), an audio and video module, and a power supply module (1-8).

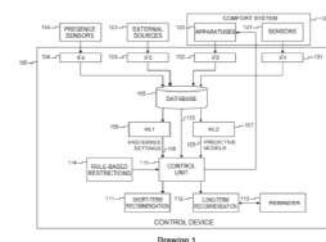


[ver más...](#)

Control device and method for controlling personal environmental comfort

Publicada en Patentscope_Domótica, 13/01/2022.

Solicitante: RENSON VENTILATION NV [BE]
 A control device (100) for recurrently controlling the personal environmental comfort in a building with one or more rooms equipped with a comfort system (120), comprising: - interfaces (101, 102, 103) for obtaining sensor data, operational data and external data



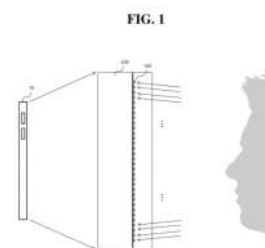
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Display panel for processing biometrics using tft photodetectors integrated thereon

Publicada en Espacenet_Power Electronic, 06/01/2022.

Solicitante: KIM HOON [US]

A display panel includes a display pixel configured to irradiate light, an image sensor pixel included together with the display pixel in one unit pixel, including a thin film transistor (TFT) photodetector



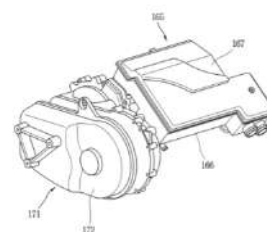
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Intelligent power generation module

Publicada en Espacenet_Power Electronic, 06/01/2022.

Solicitantes: LG MAGNA E POWERTRAIN CO LTD [KR]; AVL SOFTWARE & FUNCTIONS GMBH [DE]

An intelligent power generation module includes: an electric motor including a motor housing, an inverter disposed at a first side of the motor housing and including an inverter housing configured to accommodate an insulated gate bipolar transistor (IGBT), an inner housing disposed inside the motor housing, and a dual flow path disposed at a circumferential surface of the motor housing on which the inner housing is disposed.



[ver más...](#)

Cross-phase detector based phase interpolator

Publicada en Espacenet_Power Electronic, 04/01/2022.

Solicitante: APPLE INC [US]

Embodiments relate to a phase interpolator cell. The phase interpolator cell includes a multiplexer configured to select between a first pull-up network and a second pull-up network. The first pull-up network includes a first pull-up transistor controlled by a first clock signal and is connected between a first input of the multiplexer and a first power supply.



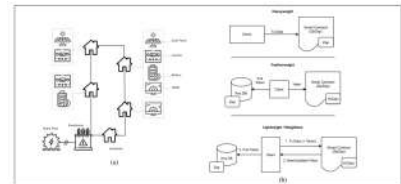
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PUBLICACIONES CIENTÍFICAS

ZipZap: A Blockchain Solution for Local Energy Trading

Publicada en <https://arxiv.org>, 27/02/2022.

In the last few years, electric utility companies have increasingly invested into transactive energy systems. This trend was primarily caused by the integration of distributed energy resources (DERs) and internet-of-things (IoT) devices into their existing distribution networks. Influenced by the general interest in blockchain technologies



[ver más...](#)

Python for Smarter Cities: Comparison of Python libraries for static and interactive visualisations of large vector data

Publicada en <https://arxiv.org>, 26/02/2022.

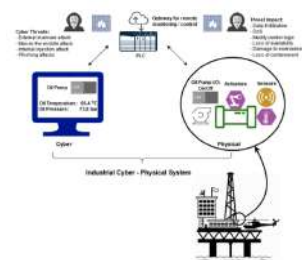
Local governments, as part of 'smart city' initiatives and to promote interoperability, are increasingly incorporating open-source software into their data management, analysis, and visualisation workflows.

[ver más...](#)

Cybersecurity Challenges in the Offshore Oil and Gas Industry: An Industrial Cyber-Physical Systems (ICPS) Perspective

Publicada en <https://arxiv.org>, 23/02/2022.

The offshore oil and gas industry has recently been going through a digitalisation drive, with use of 'smart' equipment using technologies like the Industrial Internet of Things (IIoT) and Industrial Cyber-Physical Systems (ICPS). There has also been a corresponding increase in cyber attacks targeted at oil and gas companies.



[ver más...](#)

3d Printing: Basic principles and applications

Publicada en <https://www.sciencedirect.com>, 07/02/2022.

Due to the economic growth and worldwide interference with today's globalization and industrialization, the manufacturing sector has gained greater prominence in the last decade. Many fresh revolutionary tactics have been created, and revolution is an endless narrative.

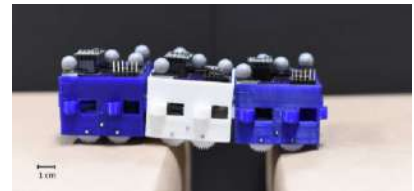


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PuzzleBots: Physical Coupling of Robot Swarms

Publicada en <https://arxiv.org/>, 06/02/2022.

Robot swarms have been shown to improve the ability of individual robots by inter-robot collaboration. In this paper, we present the PuzzleBots - a low-cost robotic swarm system where robots can physically couple with each other to form functional structures with minimum energy consumption



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Graph Learning for Cognitive Digital Twins in Manufacturing Systems

Publicada en <https://www.computer.org>, 31/01/2022.

Future manufacturing requires complex systems that connect simulation platforms and virtualization with physical data from industrial processes. Digital twins incorporate a physical twin, a digital twin, and the connection between the two.

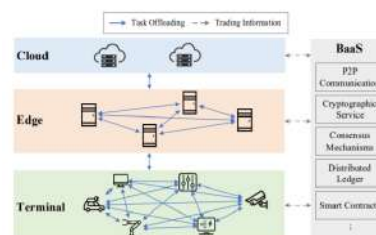


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A Blockchain-Based Distributed Computational Resource Trading System for Industrial Internet of Things Considering Multiple Preferences

Publicada en <https://arxiv.org>, 24/01/2022.

Computational task offloading based on edge computing can deal with the performance bottleneck faced by traditional cloud-based systems for industrial Internet of things (IIoT). To further optimize computing efficiency and resource allocation

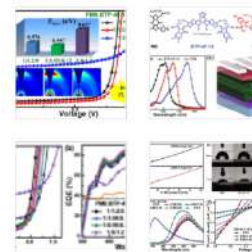


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Over 17.7% efficiency ternary-blend organic solar cells with low energy-loss and good thickness-tolerance

Publicada en <https://www.sciencedirect.com>, 15/01/2022.

Ternary-blend organic solar cells (TOSCs) are fabricated with PM6:BTP-4F-12 as the host system and IT-M as the third component. The third component IT-M takes multiple roles in improving performance of TOSCs through reducing energy-loss of the optimized TOSCs, optimizing molecular arrangement and phase separation in active-layers.



[ver más...](#)

Designing Internet of Behaviors Systems

Publicada en <https://arxiv.org>, 06/01/2022.

The Internet of Behaviors (IoB) puts human behavior at the core of engineering intelligent connected systems. IoB links the digital world to human behavior to establish human-driven design, development, and adaptation processes. This paper defines the novel concept by an IoB model based on a collective effort interacting with software engineers, human-computer interaction scientists, social scientists, and cognitive science communities. The model for IoB is created based on an exploratory study that synthesizes state-of-the-art analysis and experts interviews.

[ver más...](#)



Fig. 1. IoB within a manufacturing domain.

