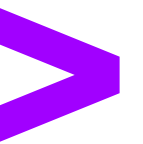


January 2023

Innovate

Trends and innovations that matter





Know more about the latest announcements impacting industry—from tires made of sustainable materials, to pollution filters for cars.



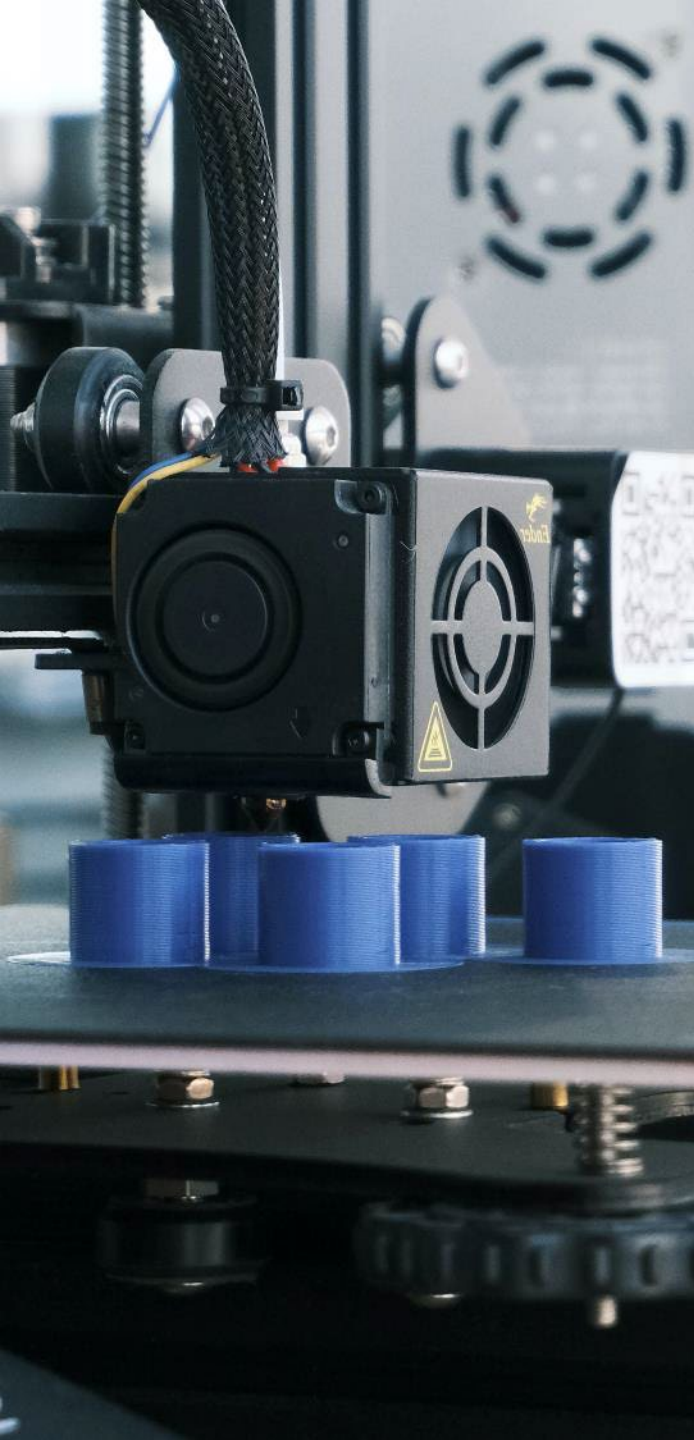
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**Industrial is
a front runner
in combining
human ingenuity
with technology
and innovation.**

Thomas Rinn

Senior Managing Director,
Global Industrial Sector Lead, Accenture





Siemens and Desktop Metal accelerate additive manufacturing sustainably

Siemens and Desktop Metal are partnering to accelerate the adoption of additive manufacturing (AM) for production applications, prioritizing collaborations with the world's largest manufacturers. The partnership will drive more integration between both parties' technologies. For example, Siemens' own technology will be integrated with Desktop Metal's AM 2.0 systems, which deliver operational technology, information technology and automation. And, Desktop Metal's solutions will be integrated into Siemens simulation and planning tools for machine and factory design. Siemens digital twin technology is already being used to help design machinery, while technologies like binder jet 3D printing will be promoted as a sustainable solution that can reduce waste while increasing production. The two companies hope to help customers further industrialize AM, in a more sustainable way.

Coherent launches laser welding head vision system

Coherent has released HIGHvision, a machine vision system for laser welding heads designed to improve the efficiency of manufacturing electric vehicle (EV) batteries and motors. The new technology harnesses machine vision hardware and software to align laser welding heads to features on a workpiece in a matter of milliseconds, with incredible accuracy. The innovation will help drive efficiencies and accelerate welding work—lowering the cost of ownership at a time when demand for EVs is soaring. The key to its success, says Coherent, is the embedded vision system architecture. It can also be integrated with Coherent's HighLight FL-ARM lasers to optimize the welding process.



NTT DATA and DENSO build EV battery ecosystem

NTT DATA and DENSO have embarked on a program to develop an industry-wide ecosystem for electric vehicle (EV) batteries. The aspiration is to create global trusted dataspace, to protect data at the same time as sharing essential information. The work is partly a response to regulations in Europe, which stipulate that CO2 emissions and battery recycling rates will need to be disclosed to the European Commission. The platform will act as a common space to share related data securely between suppliers in the value chain, with plans to launch it commercially by the end of 2023. In the future, it could also be used as a secure platform for data transfer between companies across different industries.

Michelin reveals sustainable tires

Michelin-owned Enviro Systems has developed car and bus tires, respectively comprising 45 percent and 58 percent environmentally sustainable materials. Michelin says the technology will be used to manufacture its standard tires in two to three years' time. This innovation supports Michelin's mission of using 100 percent renewable materials in all tires by 2050, and the company claims it is the first in the world to use such a high percentage of sustainable materials approved for use on-road. The tires are partially made from carbon black, recovered by Enviro.



Audi and MANN+HUMMEL develop EV particulate filter

Audi is working with MANN+HUMMEL to launch a particulate filter for electric vehicles that collects pollution particles from the surrounding environment while driving and charging. In its first pilot trialing the technology, Audi showed that the filter can improve urban air quality, with the filter at the front of the vehicle absorbing particles as the car generates them. The filter can be integrated into a car's existing airflow system in the radiator, acts much like a vacuum, and can easily be replaced during regular maintenance. It's estimated that up to 85 percent of fine dust is caused by brakes, tires or road abrasion. The filter stands to help reduce the propensity of these particles, as advised by the World Health Organization. The pilot program will continue for a total of four years.

Tesmec launches high precision 3D digital twin tech

Tesmec has unveiled its Mobile Mapping System (MMS), an integrated radar mapping system of the underground environment and high-precision digital 3D surveys of the terrain above ground. The cloud-based surveying tool creates a georeferenced 3D reconstruction by combining LIDAR data and images from high resolution matrix cameras. Artificial intelligence is then leveraged to build a mapping model with an accuracy of about 2cm. The data can be visualized in an integrated dashboard available through a web platform, combining visible images and high-resolution videos, thermal images, laser point clouds and three-dimensional BIM models.



Caterpillar launches electric machines

Caterpillar is upgrading its smaller bulldozers with new innovations and launching new electric machines including one for farms. Caterpillar's popular D1 to D3 bulldozer line will benefit from a new tech package that includes Cat Command, a remote control system. Other benefits include a feature that helps create smooth surfaces with less effort, a Blade Load Monitor that provides real-time feedback and a feature to reduce excessive track slip and improve machine efficiency. Caterpillar also unveiled four new machine prototypes: the 301.9 mini excavator, the 320 medium excavator, the 950 GC medium wheel loader, and the 906 compact wheel loader. Each machine is powered by Caterpillar's own battery prototypes and includes an onboard AC charger, with the option of offboard DC fast-charging.

Innovation in Acciona's makerspace

Acciona is operating an innovation workshop and Digital Hub at Torrejón de Ardoz in Spain, where 30 experts develop applications that harness artificial intelligence, Internet of Things, robotics, 3D printing and immersive technologies for use in the construction, sustainable mobility and energy industries. The workshop includes a robotics space, a 3D printing space and an immersive technology corner where tools such as augmented reality glasses are used to virtually view an Acciona construction site. Its metaverse world can be used for simulations or training using exact replicas of real-world objects. The company is also using the space to experiment with 3D printing parts of houses and trialing different materials.



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