

## Record: 26% efficiency in a low-light environment for the solar technology of ARMOR solar power films

ARMOR solar power films (ARMOR group) announces that in October, it achieved a record 26% efficiency in a low-light environment for the ASCA® organic photovoltaic (OPV) cell. With estimates placing the number of connected objects worldwide at 75 billion by 2025<sup>1</sup>, this performance level has been posted in a context of high growth in the IoT sector, opening up multiple market opportunities.

### Record: 26% efficiency in a low-light environment

26% efficiency in a low-light environment for an ASCA® organic solar cell. This is a laboratory record announced as being achieved in October by ARMOR solar power films, thanks to the integration of new photoactive materials of the latest generation developed with its Taiwanese partner Raynergy Tek, a specialist in organic semi-conductor materials for OPV. Thanks to its high sensitivity to light, the OPV film produced by the French company is therefore effective indoors and in conditions of artificial light. Combined with its low weight and semi-transparency, it is easy to imagine the array of opportunities it offers to the IoT sector.

### Constantly expanding applications

The solar technology of ARMOR solar power films offers dual functionality. In the first place it can be used to generate electricity (its primary function), powering connected objects while offering the benefits of extended autonomy, a longer useful life and optimized maintenance. All of this is made possible due to the absence of limited-life batteries. For example, ARMOR solar power films has installed its ASCA® organic photovoltaic film at its industrial site in Kitzingen (Germany) to power sensors monitoring ambient temperature and humidity in real time, an essential function to ensure the quality of production. In this low-light environment (from 200 lux), the films produce energy from the lighting at the premises. It is then stored to power the sensors, enabling them to operate continuously both day and night. The collected data can be accessed remotely for analysis. The OPV film can also be used as a receiver of data transmitted via light in LiFi applications or asset tracking, such as geolocation used in logistics or to track the movement of people (secure premises, hospitals, nursing homes, etc.).

### IoT – a booming market

Connected objects have become essential in many sectors. They produce vast quantities of data which is stored and processed as "big data". In Agriculture, this may cover sensors monitoring temperature, soil humidity, irrigation or livestock conditions. In the field of Environment, this covers sensors monitoring air quality, temperature, noise levels, the status of a building, etc. In Healthcare and Well-being sectors there are connected watches and other sensors monitoring vital signs. A booming market, it is estimated that 127 new items of equipment are connected every second and that there will be 75 billion connected objects worldwide by 2025.

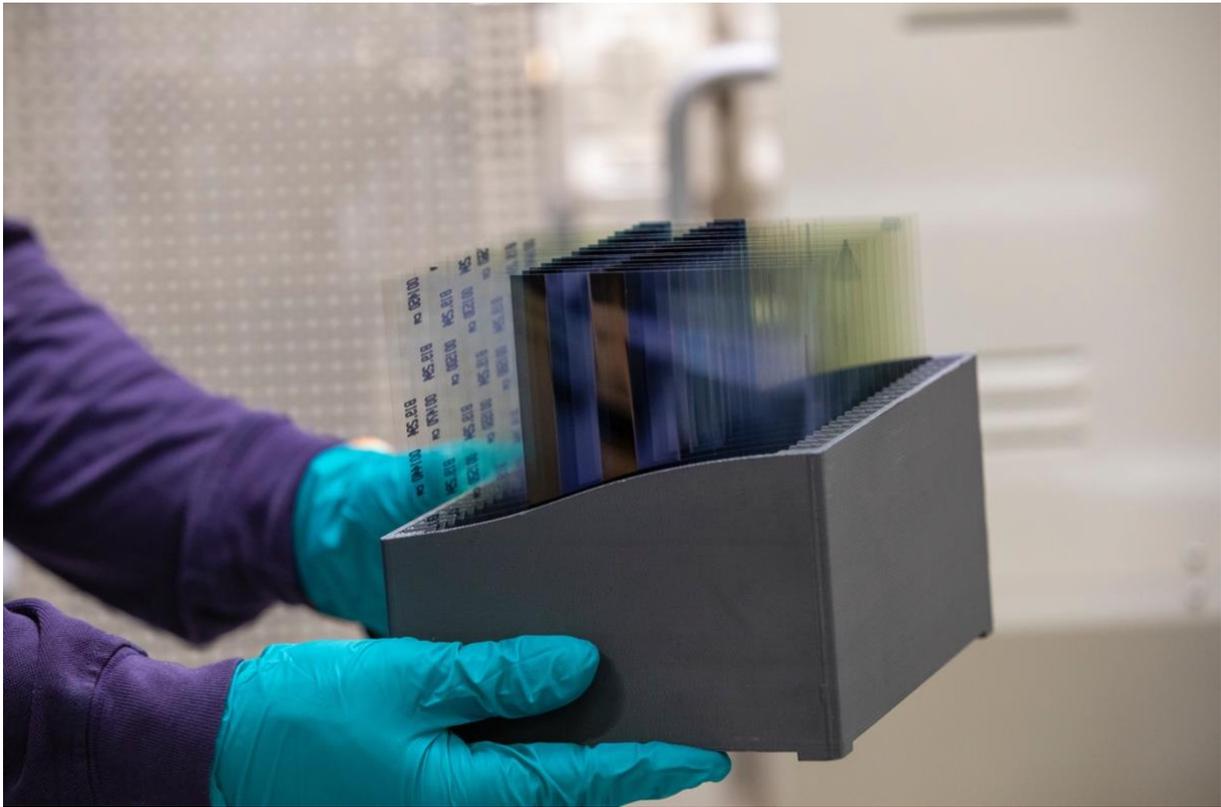
Press contact :  
Gratiane Sametin (Giotto)  
+33 6 62 30 89 24 / g.sametin@giotto-

### About ARMOR

ARMOR specialises in the industrial formulation of inks and the coating of thin layers onto thin films. The Group is the global market leader in the design and manufacture of thermal transfer ribbons for printing variable traceability data on labels and flexible packaging. The European market leader in innovative and sustainable printing services and consumables, the Group is a pioneer in the development and production of industrial inks and innovative materials, such as organic solar films, coated collectors for electric batteries and bespoke filaments for additive manufacturing. With an international presence, ARMOR has nearly 2,000 employees in some 20 different countries. In 2019 it posted annual revenue of €280m. Each year the group invests nearly €30m in industrial equipment and R&D. ARMOR is a responsible company committed to stimulating innovation within society. [www.armor-group.com](http://www.armor-group.com)

ARMOR solar power films, a subsidiary of ARMOR Group, designs and develops intelligent, tailor-made, flexible and low-carbon solar energy solutions on an industrial scale for its international partners. Its team of experts of sixty people is spread over France, Germany and West Africa. [www.asca.com](http://www.asca.com)

<sup>1</sup> Source : Statista 2020 <https://fr.statista.com/statistiques/584481/internet-des-objets-nombre-d-appareils-connectes-dans-le-monde-2020/>



Crédit photo : © oioo.fr