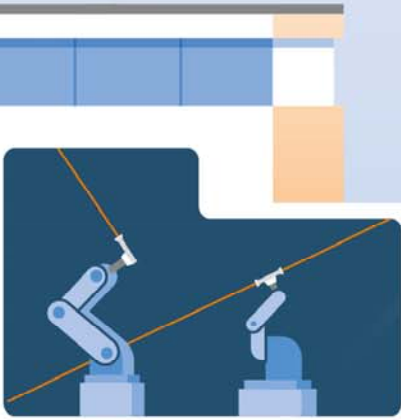


THE POWER OF LIGHT

Light is the world's oldest resource. It has extraordinary properties: It achieves the highest speed in the universe; it can be focused to the millionth of a millimeter and transmits up to millions of megabits per second. Today, optical technologies are changing industry and everyday life. An overview of the revolution.

IN INDUSTRY 4.0

Machines are equipped with cameras and sensors and networked with one another. They transmit information and use it for automatic control.



IN PRODUCTION

Photonic tools and processes are increasingly important in the processing of lightweight structural materials. The goal is their broad introduction into mass production.



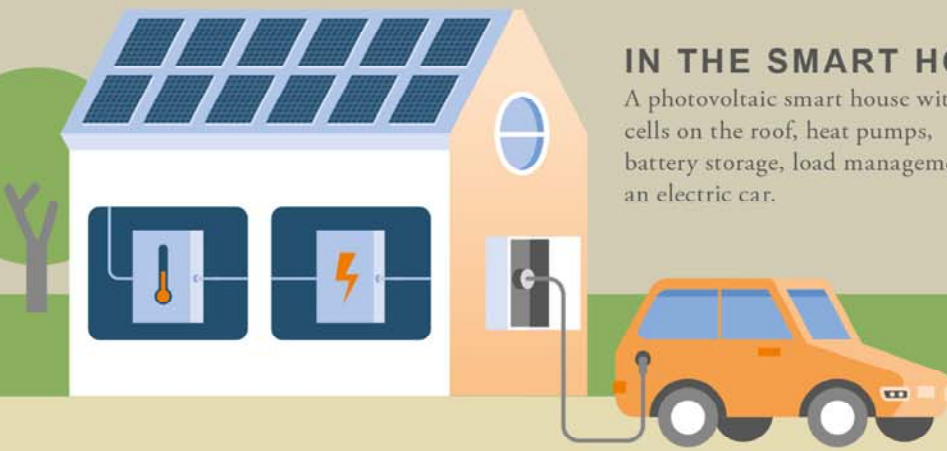
THE SUN

Sunlight reaches the earth with a radiation power of 174 petawatts. One petawatt is one billion watts.



IN THE SMART HOUSE

A photovoltaic smart house with solar cells on the roof, heat pumps, battery storage, load management, and an electric car.



IN RESEARCH

The European project Extreme Light Infrastructure (ELI) is intended to achieve a radiation power of 200 petawatts.



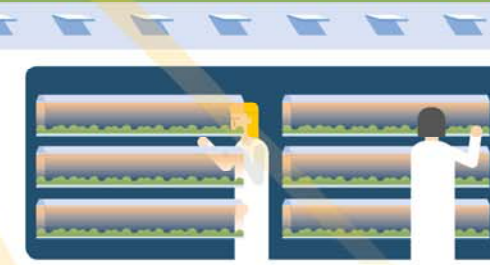
IN THE MILITARY

Using DIRCM defense systems, aircraft can recognize and fend off incoming guided missiles.



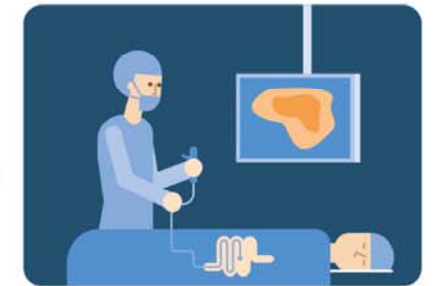
IN FOOD

In smart farming, harvest times, water quality, contaminants, and soil can be regulated, while LEDs provide the correct light.



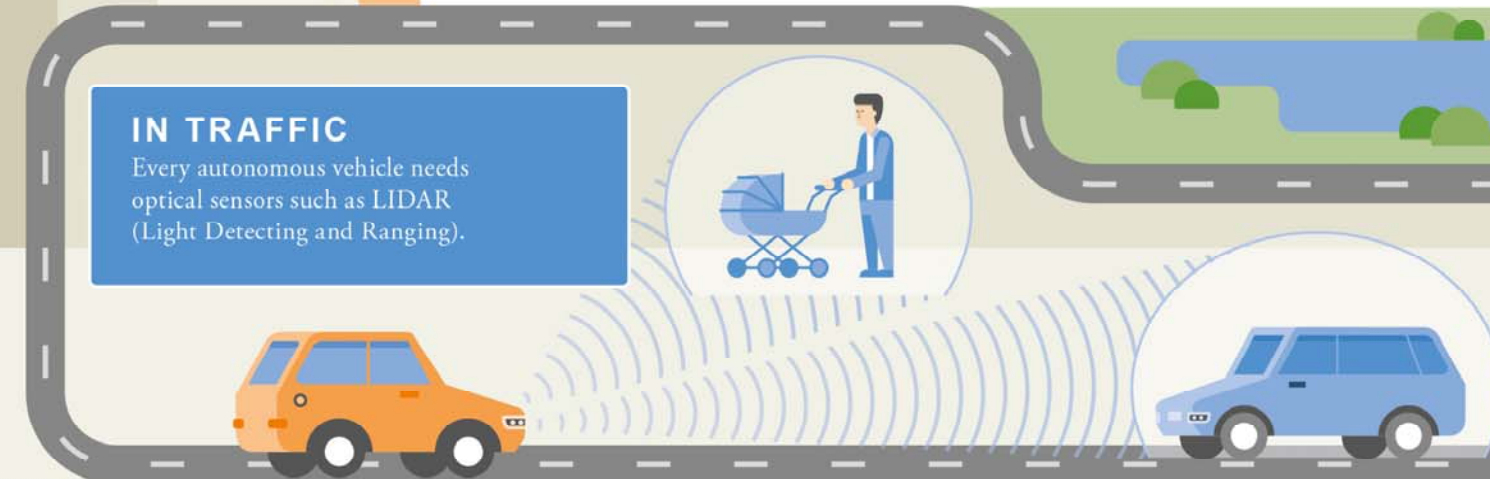
IN HOSPITALS

Ophthalmology used strongly bundled light even before the advent of lasers to fuse the retina. Today, photonics is making great progress in minimally invasive surgery.



IN TRAFFIC

Every autonomous vehicle needs optical sensors such as LIDAR (Light Detecting and Ranging).



HIGHEST SPEED

In one second, light travels 299,792,458 meters.

