

Quarterly newsletter from Photonics Media highlighting the latest photonics news, features and products from Europe. Manage your Photonics Media membership at [Photonics.com/subscribe](http://Photonics.com/subscribe).

**Ultrashort Laser Pulses Mark Lasting Codes on Medical Devices**

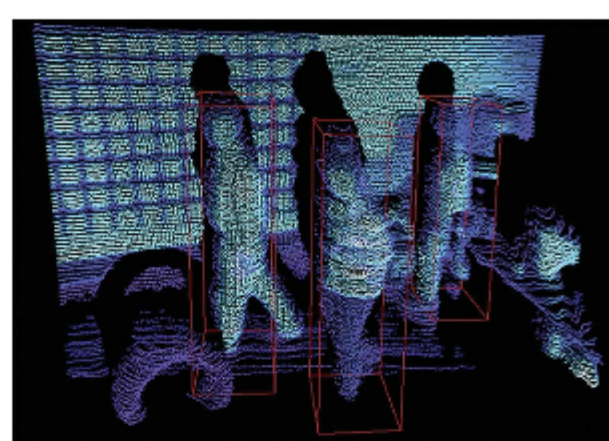
To enhance the effectiveness of the post-market surveillance of medical devices, both the U.S. and the European Union have adopted unique device identification regulations: the FDA Amendments Act of 2007 and the European Commission Legislative Act of 2017, respectively. In compliance with these standards, each device may be labeled with human-readable interpretation and automatic identification, as well as with data capture identifiers (only the last one being mandatory) unless otherwise specified. Ultrashort-pulse lasers have been used to achieve these specifications on the manufacturing floor, and the resulting markings have survived industry tests aimed at altering or removing them.



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**Lidar and Data Fusion Increase AI Performance**

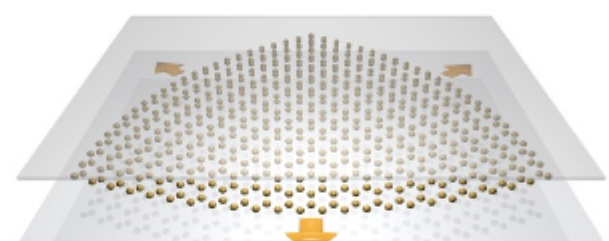
Imaging lidar sensors are one of the primary components in systems used for perception tasks in autonomous vehicles. The 3D data generated by lidar while a vehicle is in motion is considered useful because such data is the result of measuring real-time physical occurrences. These include events such as the time delay between two laser pulses (in the case of the pulsed time-of-flight technique) or the Doppler shift of the returned signal (in the frequency-modulated continuous-wave approach).



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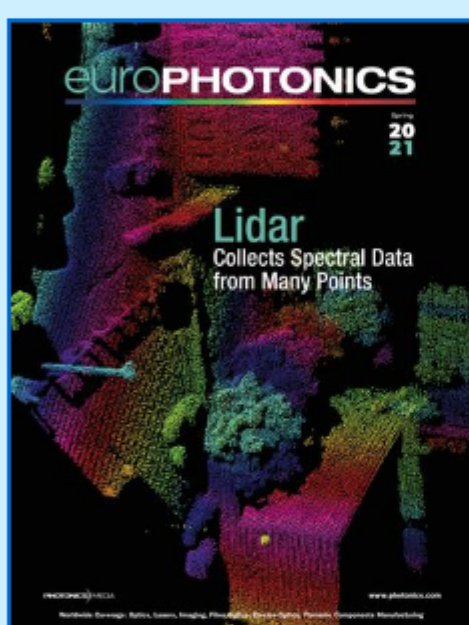
**Synthetic Magnetic Field Uses Metasurfaces to Manipulate Photons**

Researchers at the University of Exeter have developed a way to manipulate light with a “synthetic” Lorentz force — which is responsible in nature for a number of phenomena such as the aurora borealis. The technique allows the researchers to create tunable artificial magnetic fields, enabling photons to mimic the dynamics of charged particles in real magnetic fields.



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**.: Featured Products**



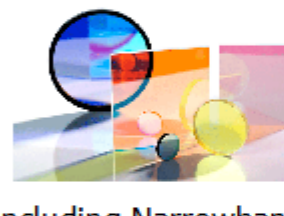
**Micro Injection Molding**

**Accumold**

Accumold® is a high-tech manufacturer of precision micro, small, and lead frame injection molded plastic components. Molded parts range in size from 5 cm, with micro features, to parts that are less than 1 mm in size. These complex parts often include tight tolerances measuring only a few microns.

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**Alluxa**

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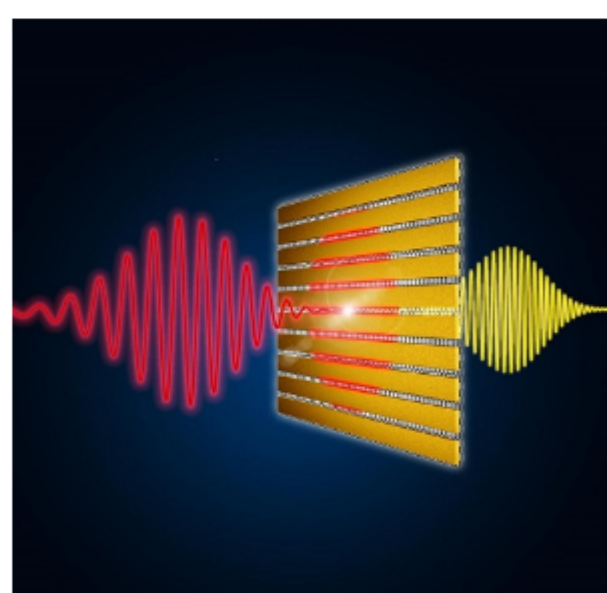


**.: More News From Europe**

**Scientists Spin Graphene and Gold into Terahertz Waves**

A German-Spanish research team has developed a graphene-based approach for increasing the efficiency with which the scientists were able generate terahertz pulses. In the system, the researchers coated a graphene sheet with a metallic lamellar structure — specifically, gold lamellae.

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**Ultrafast Fiber Laser Delivers High Power, Exceptional Beam Quality**

A research group at Friedrich Schiller University of Jena in Germany developed an ultrafast fiber laser capable of delivering an average power that is more than 10× that of existing high-powered lasers. The technology aims to improve both speed and efficiency of industrial-scale materials processing.

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**Potential of Periodic Array System Supports Nanophotonics Applications**

A research team from the University of New Mexico and the Autonomous University of Madrid has applied periodic arrays containing nanoparticles of different sizes — as opposed to more conventional arrays that contain nanoparticles of a singular, uniform size — to generate coherent light of desired colors.

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**Features**

Multimode Optical Fibers, THz Imaging, EPIC Insights, and more.

Photonics Media is currently seeking technical feature articles on a variety of topics for publication in our magazine *EuroPhotonics*. Please submit an informal 100-word abstract to Senior Editor Doug Farmer at [Doug.Farmer@photonics.com](mailto:Doug.Farmer@photonics.com), or use our online submission form [www.photonics.com/submitfeature.aspx](http://www.photonics.com/submitfeature.aspx).



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