

OPTICS

Tech Pulse



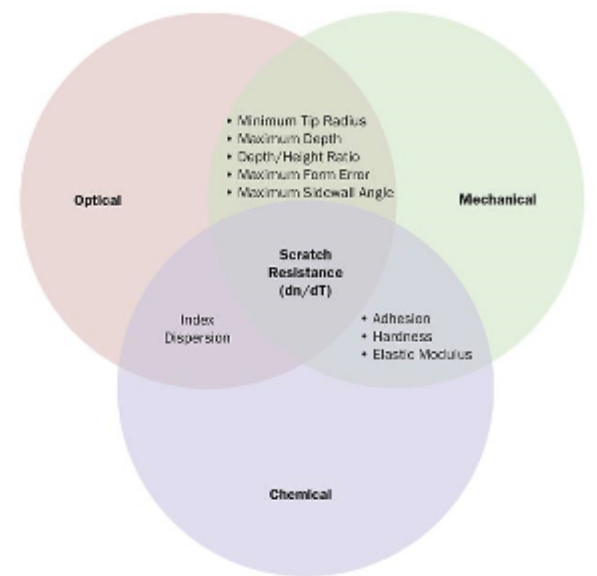
April 2021

Optics Tech Pulse is a special edition newsletter from Photonics Media and Bristol Instruments covering key developments in optics technology.

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Freeform Micro-Optics Reel Off New Applications

Tools are needed that can bridge the gap between conventional and emerging micro-optic concepts to improve the design workflow. Leveraging innovative fabrication technologies, freeform micro-optics are redefining the landscape for general lighting, anti-counterfeiting, and other applications. Companies such as Synopsys are starting to integrate CAD platforms such as RSoft that have traditionally been used to design photonic structures and waveguides with LightTools illumination design software.



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PROMOTED CONTENT

Bristol Instruments Inc. Non-Contact Thickness Measurement

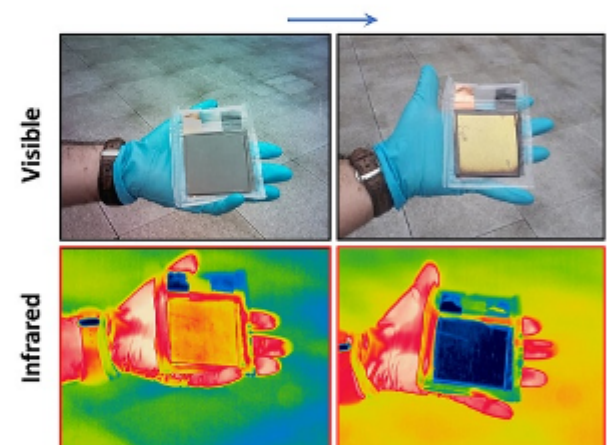
Bristol's non-contact thickness gauges utilize the unique properties of light to precisely measure the critical parameter of thickness. Both hard and soft transparent and semi-transparent materials are analyzed without damage or deformation. Up to 31 layers can be measured simultaneously. Reliable accuracy, straightforward operation and rugged design make these instruments ideal for both laboratory and manufacturing environments.



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Graphene Smart Surfaces Tuned for the Visible Spectrum

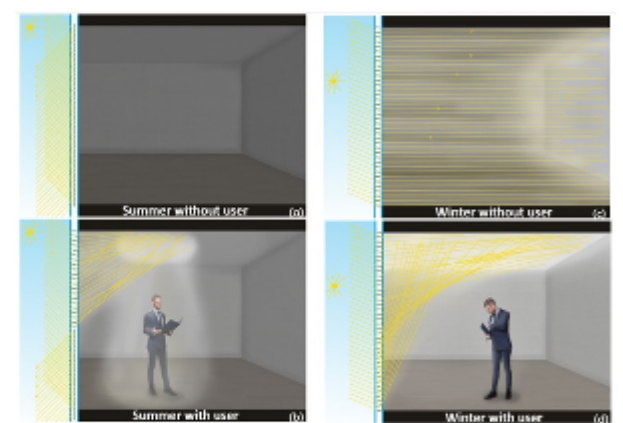
Work from the University of Manchester outlines applications for smart surface technology that covers the entire electromagnetic spectrum, including the visible light region. Applications for the new optical devices range from next-generation display devices to dynamic thermal blankets for satellites, as well as multispectral adaptive camouflage.



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Smart Glass Design Saves Power

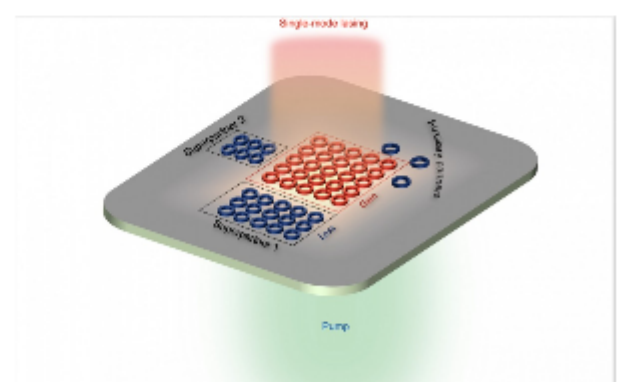
A design from researchers at the University of Kassel aims to decrease energy consumption for lighting and temperature technologies. The smart system uses micro-optical-electro-mechanical (MOEM) micromirror arrays to regulate and steer sunlight.



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2D Microlaser Arrays Give Integrated Photonic Systems a Boost

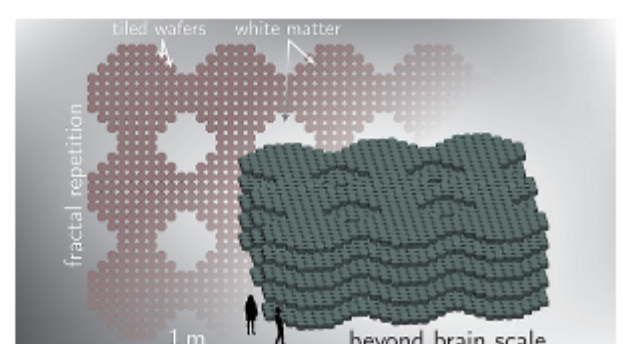
Researchers from the University of Pennsylvania and Duke University designed and built 2D arrays of closely packed microlasers that demonstrated the stability of a single microlaser, and that collectively achieved power density that were orders of magnitude higher.



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Light and Superconductors Join to Boost AI

At the National Institute of Standards and Technology (NIST), researchers proposed an approach to large-scale artificial intelligence that focuses on integrating photonic components with superconducting electronics as opposed to semiconducting electronics.



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