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OPTICS Tech Pulse

PHOTONICS MEDIA

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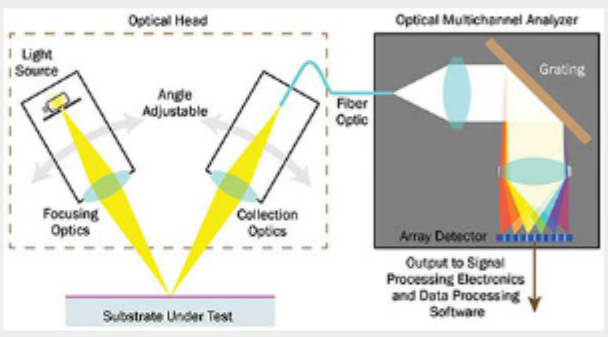
Optics Tech Pulse is a special edition newsletter from Photonics Media and Newport Thin Film Laboratory, Inc. covering key developments in optics technology.

Thin Film Inspection Methods Aim to Match Human Eye Perception



Thin-film coatings have long been ubiquitous in precision optical systems, and are now finding increasing use in eyeglasses, architectural glass and displays. When fabricating precision optics, the primary requirement is that coatings meet particular reflectance and transmittance specifications. But in consumer applications manufacturers are often concerned with the visual appearance and consistency of the coating. While instruments for quantifying coating appearance have been available for decades, legacy technologies suffer from two important limitations: as lab instruments, they are not suitable for production settings, and they often can't accurately measure very thin glass sheets that are now finding greater use in displays.

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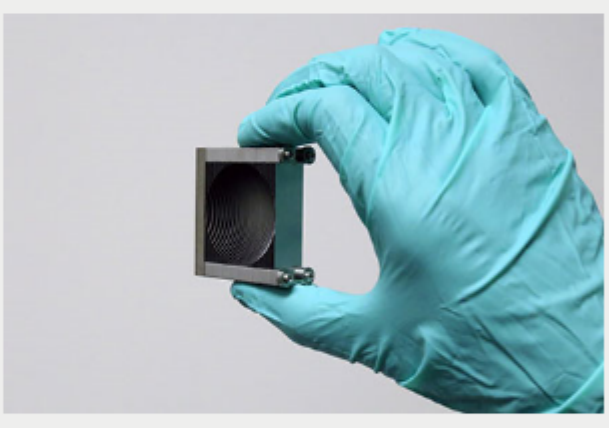
Artificial Dielectric-Based Lens Enables Efficient Terahertz-Wave Control



Future terahertz-wave devices for communications and imaging could benefit from a lens based on artificial dielectrics. Terahertz radiation (about 100 to 10,000 GHz) is a relatively unexplored slice of the electromagnetic spectrum but it holds the promise of countless new imaging applications, as well as wireless communication networks with extremely high bandwidth.

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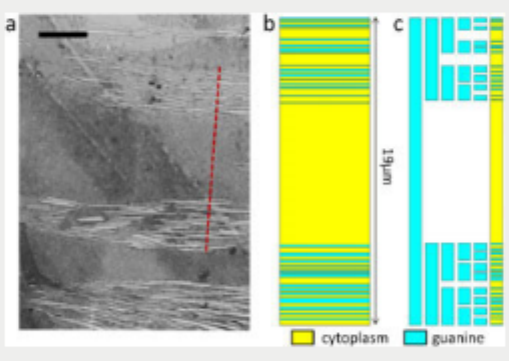
Fish-Inspired Fractals Guide Optical Coating Design



Fish scales could serve as a model for better broadband reflectors and custom multispectral filters. "We are proposing a model that uses fractal geometry to describe the layering in the biological structure of silvery fish," said Pennsylvania State University postdoctoral researcher Jeremy Bossard. "While we are not trying to reproduce the structure found in nature, the same model could guide the design of devices such as broadband mirrors."

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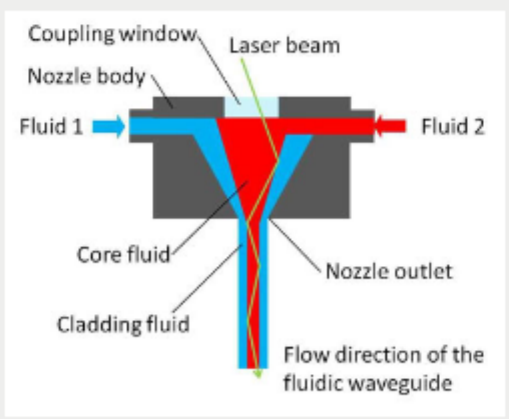
LZH Launches 3 Hybrid Numerical Optics Research Projects



Nonprofit research institute Laser Zentrum Hannover e.V. (LZH) is working on three subprojects in the research priority, Hybrid Numerical Optics, of the Hannover Centre for Optical Technologies (HOT) at Gottfried Wilhelm Leibniz University Hannover. Working in a new competence center for optical simulation, the LZH will address subprojects in the areas of high-power glass fiber amplifiers, dielectric coatings and light propagation in fluid columns.

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Merck, Polysolar, CPI Partner on Smart Windows

Merck KGaA has announced an Innovate U.K. collaboration with Polysolar, a building-integrated photovoltaics (BIPV) producer, and the Centre for Processing Innovation (CPI) to enable windows of the future to generate their own solar power, as well as provide greater thermal control.

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