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Laser Focus World®

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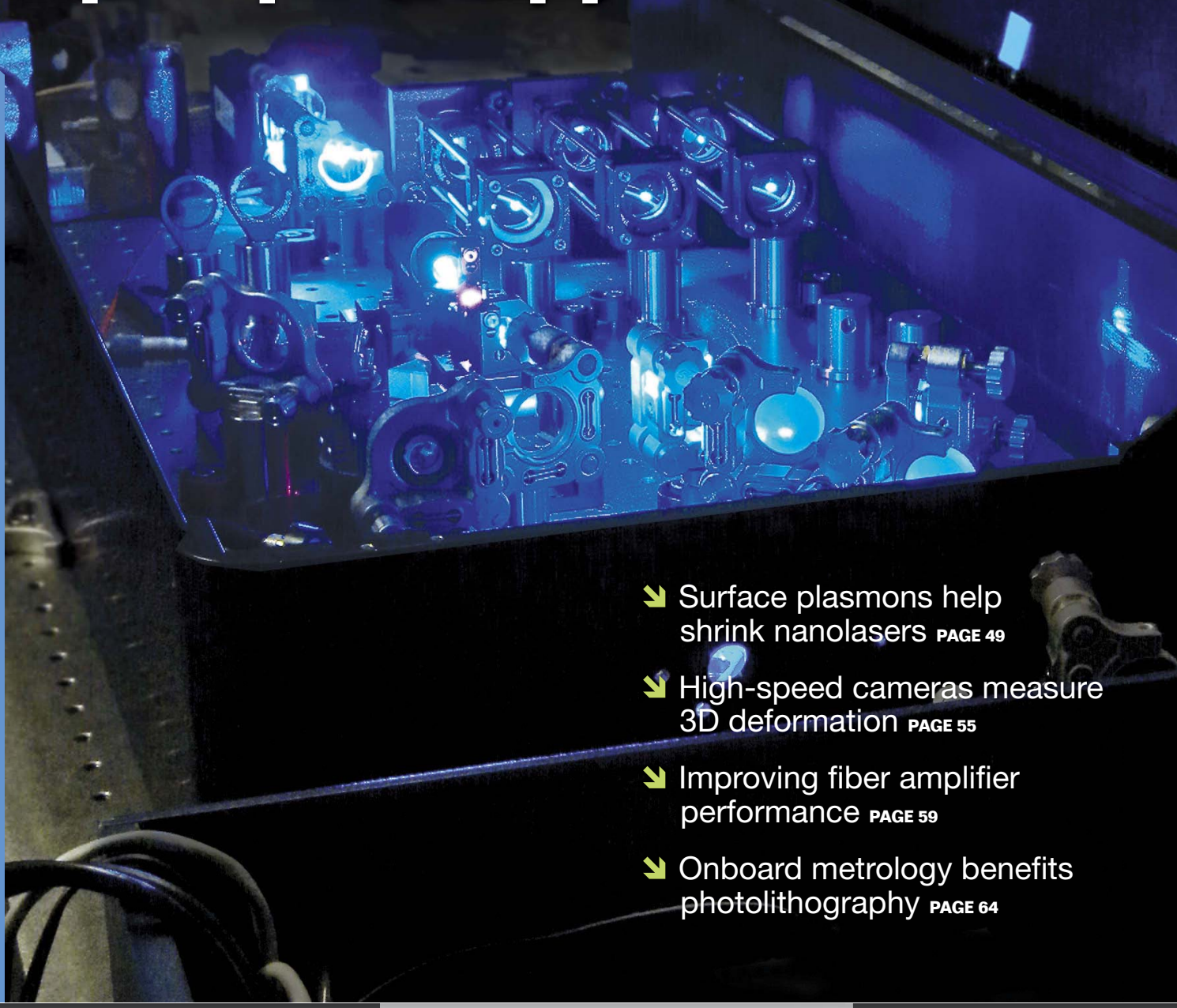
Blue laser diodes pump Ti:sapphire PAGE 35



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Laser Wavelength Meters

3392.23574 nm

3392.23574 nm

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news breaks

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electronic, and mechanical components housed in a compact package, CRISP injects IR LED illumination into the microscope, captures the beam reflected from the specimen slide or cover slip, and routes the reflected beam onto a position-sensitive detector (PSD). The signal from the PSD is conditioned by an amplifier circuit in the MS2000 controller and used as the feedback signal for *z*-axis control. The CRISP module also adapts to the C-mount port of nearly all microscopes with a dual-C-mount splitter (DCMS)-based beamsplitter. *Contact John Zemek at* john@asiimaging.com.

MEMS-based VCSEL reaches record 150 nm tuning range

Last year, *Laser Focus World* reported on a microelectromechanical systems (MEMS)-based 1310 nm widely tunable vertical-cavity surface-emitting laser (VCSEL) from Praevium Research (Santa Barbara, CA), Thorlabs (Newton, NJ), Advanced Optical Microsystems (AOMicro; Mountain View, CA), and the Massachusetts Institute of Technology (MIT; Cambridge, MA) that enabled 760 kHz optical coherence tomography (OCT) scanning in conjunction with a 110 nm tuning range. A year later, the same research group has reached new heights with a 150 nm tuning range at 1310 nm—the widest tuning range reported for any VCSEL at any wavelength.

The record tuning range was made possible through an improved cavity and electrostatic actuator design. These MEMS-based VCSELS essentially consist of a lasing cavity in which the top mirror is suspended on a MEMS actuator. Tunability was expanded by using a thinner cavity in an optically pumped configuration. Optical pumping eliminates resistive heating and the need to dope the mirrors and cavity, significantly reducing free-carrier absorption and subsequently reducing threshold gain for lasing over a wider portion of the gain spectrum. The new devices use a shorter total cavity length that extends the free-spectral range. Wideband mirrors and wider-gain indium-phosphide (InP)-based quantum wells also promote an expanded tuning range. *Contact Vijaysekhar Jayaraman at* vijay@praevium.com.