TOPTICA Unveils Ultra-Low Noise 532 nm Laser

The new groundbreaking 80 W laser system outperforms other, currently available DPSS and fiber-amplified based laser systems.

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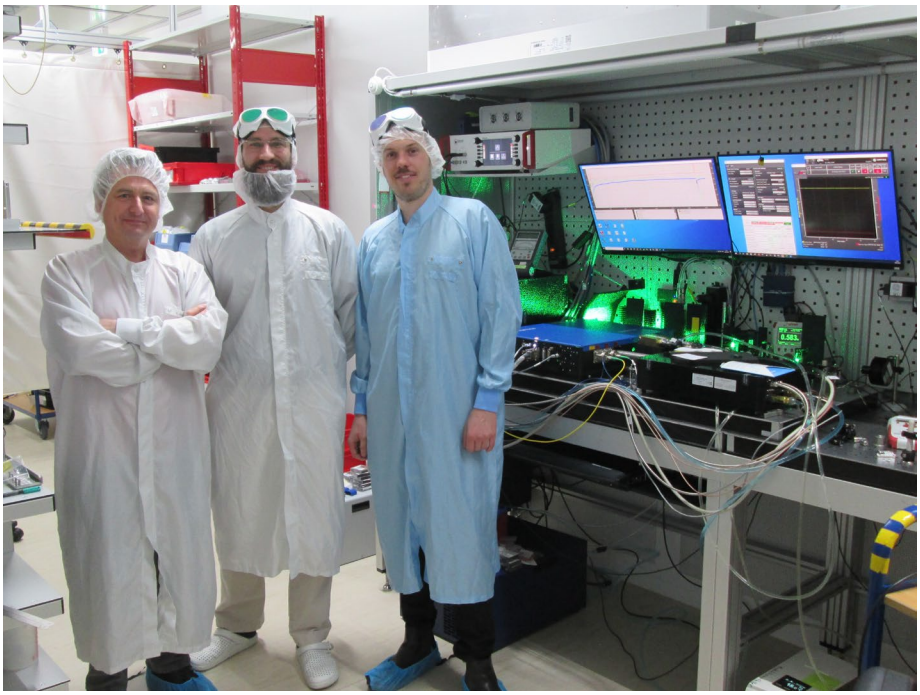
A team of researchers and engineers at TOPTICA Photonics AG has achieved a breakthrough, building an ultra-low noise, high-power 532nm laser demonstrator.



Part of the TOPTICA development team from left to right: Dr. Konstantinos Simeonidis (Director Production NLO & Customized Solutions), Simon Reinisch (Engineer Production Customized Solutions NLO), and Dr. Marcel Holtz (Team Leader R&D Nonlinear Optics).

Utilizing readily available building blocks from TOPTICA's product portfolio, the system delivers an impressive 80 W of optical output at 532 nm while simultaneously holding the relative intensity noise (RIN) to an exceptional level below 0.02% rms (10 Hz to 10 MHz).

The innovative combination of the narrow-linewidth external-cavity diode laser DL pro with a high-performance fiber amplifier ALS-1064-130 and the proven resonant frequency-doubling stage SHG pro significantly outperforms other, currently available DPSS or fiber-amplified based laser systems, which struggle to achieve the required combination of both high power and ultra-low noise.

The demonstrated performance enables technology advancements and higher throughput in areas such as titanium-sapphire laser pumping, leading-edge semiconductor inspection, and large-area holography.

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About TOPTICA

TOPTICA has been developing, producing, and marketing high-end lasers and laser systems for science, research, and industry for over 25 years. The portfolio includes diode lasers, ultrafast fiber lasers, terahertz systems, and optical frequency combs. Worldwide, TOPTICA has 600 employees in seven business units with a consolidated group revenue of €140 million.

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