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## **Versatile, compact and highly stable OPCPA seeder for modern LPA laser drivers**

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Laser Wakefield Acceleration is a very promising technology opening new opportunities in modern electron accelerators worldwide. However, this highly nonlinear process requires highly stable laser drivers in order to reach the expected performances to be used in synchrotrons or Free-Electron Lasers. Among the different parameters one has to pay attention to, the temporal and spectral characteristics are one of the critical parameters identified in the community.

We present here a solution based on a unique architecture, providing high performances together with a broad spectral versatility to be used either for TiSa, Yb or OPCPA technologies.

The optical seeder is based on a patented method, using a continuum generation in a dielectric crystal driven by an industrial ultrafast fiber laser followed by a DFG step, followed by a two-stage optical parametric amplifier to reach the  $\mu\text{J}$  energy level, including a SHG to access the 0.7-1.3  $\mu\text{m}$  spectral range.

The measurement at the output of the OPCPA shows a spectrum compatible with 15.8fs, with a central wavelength stability of 0.27nm rms over 16 hours.

This ultra-stable seeder is ready to be integrated in state-of-the-art high intensity lasers used for modern laser-based accelerators.

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