

PRESS RELEASE

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7th “UKP Workshop – Ultrafast Laser Technology” USP Lasers: Where do we stand?

Every two years, the “UKP Workshop” gives its visitors a sneak peek into the current state of this innovative laser technology. It will be that time again: On April 26 and 27, 2023, the ultrafast laser community will meet in Aachen. In addition to presenting the state of the art in kW beam sources, the workshop will focus on process development and future markets for laser material processing. For two days, experts from research and industry will exchange ideas – finally in live personal contact again.

kW beam sources on their way to industry

When the TRUMPF Group acquired a majority stake in Jena-based Active Fiber Systems AFS in early 2022, the industry took notice: Apparently, Jena's technology for the coherent coupling of high-power fiber lasers is another relevant puzzle piece for strategic development of high power laser sources.

In the Fraunhofer Cluster of Excellence “Advanced Photon Sources CAPS,” the Fraunhofer-Gesellschaft has been testing this technology in two application laboratories at Fraunhofer IOF in Jena and Fraunhofer ILT in Aachen for several years. The two institutes are developing three common concepts – fiber, slab and disk amplifiers – with up to 10 kW average output power and implementing processes and USP (Ultrashort pulsed laser) applications. Selected results from the last four years will be presented at the UKP Workshop. The program also includes live demonstrations from both institutes' application laboratories.

Productivity is the key

The UKP workshop traditionally brings together users from sectors such as the automotive, machine tools and consumer goods industry. They are attracted by USP's high precision down to the sub-micrometer range and its low dependence on material properties. New methods for parallelization now also make it possible to manufacture parts continuously with high throughput, for example, when processing semiconductor materials or structuring battery electrodes. Since USP laser radiation can be applied to structure large surfaces, it will play a decisive role in the application-oriented topic of

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hydrogen as an energy source. Participants will also gain insight into the future topics of quantum technology and secondary sources with a long-term research horizon.

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Program and registration

The program for the UKP Workshop 2023 includes approximately 20 technical presentations in English with simultaneous translation into German. Registrations are now open at <https://s.fhg.de/33K>. Secure the early bird discount until March 9, 2023!



Image 1:
Laser-structured anode material of a Li-ion battery.
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Image 2:
Structured electrodes for increased hydrogen production.
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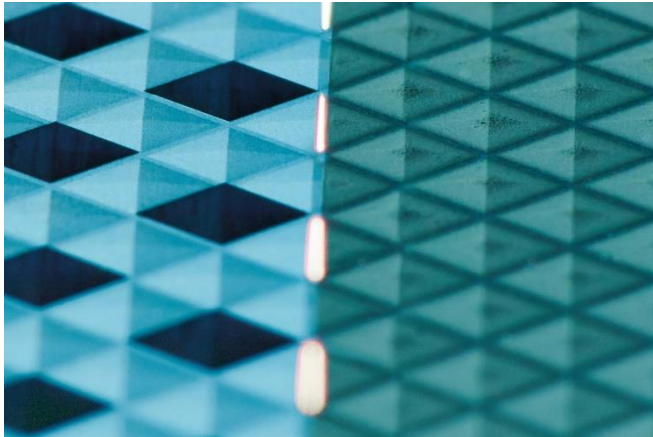


Image 3:
Reduced reworking and creation of selective polishing effects through the sequential process of USP laser cleaning and USP polishing after structure generation.

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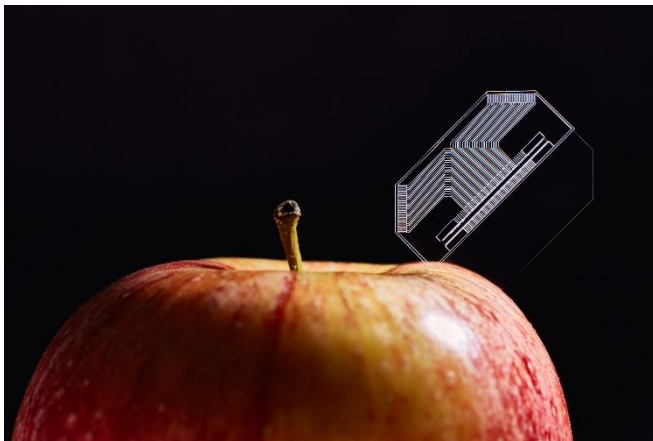


Image 4:
Ion trap for quantum computing processed with the USP laser.

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