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Ultrashort pulsed laser micro processing: multi-pulse and beam forming strategies for high throughput at high average powers

Beat Neuenschwander^{a,*}, Stefan M. Remund^a, Markus Gafner^a, Michalina W. Chaja^a

^a*Bern University of Applied Sciences, Switzerland*

Abstract

The development of ultrashort pulsed laser systems actually goes far beyond the kW level. But e.g. for metals and single pulses today's standard methods like galvo scanners are not suited for higher average powers and alternative approaches have to be developed. We will get an insight into actual developments using multi-pulse strategies in temporal representation as pulse bursts and in spatial representation as multi-beams or with direct beam forming. A combination of these methods with synchronized scanning or real pulse on demand option could pave the way for using high average powers.

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* Corresponding author.

E-mail address: beat.neuenschwander@bfh.ch.