

Title:

Micro-processing with ultra-fast lasers: Ways to optimize processes, throughput and quality

Abstract:

Today ultra-fast lasers are turn-key systems with several 10W of average power. Due to the very short pulse duration machining with highest quality and precision becomes possible. We will introduce some general rules for micro-processing with ultra-fast lasers and demonstrate strategies to obtain high throughput and short machining times as well. But this scale-up process with standard beam guiding systems (as e.g. galvano scanners) is limited by factors like heat accumulation, shielding-effects or cavity-formation and alternative approaches are therefore demanded.