

D-scan measurement of the ablation threshold and incubation parameter of optical materials in the ultrafast regime

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Abstract

Machining with ultrafast laser pulses demands the selection of correct conditions to obtain precise, and yet, efficient material extraction, in which the control of volume and physical state of the matter being etched is fundamental. Usually, the production of volumetric structures needs overlapping of many pulses, and the incubation effects and its dependence on process parameters are of prime importance. Hence, in this work this parameter and the damage thresholds for many different pulses overlapping were measured for some optical glasses with an alternative method which is faster than the traditional one, and is closer to the real machining condition.

Keywords

Ultrashort pulses; femtosecond machining; damage threshold

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