

Fs laser processing--phenomena, mechanisms and applications

SPEAKER

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ABSTRACT

Femtosecond laser is an extreme physical condition which can be realized in normal laboratories. It has been widely used for microscopic modifications to materials due to its ultra-short laser pulse and ultrahigh light intensity. When a transparent material is irradiated by a tightly focused femtosecond laser, the photo-induced reaction occurs only near the focal point of the laser beam inside the material due to the multiphoton processes. In this talk, we will describe our observations of various phenomena related to order/disorder change in transparent materials. The mechanisms and promising applications of these phenomena for optical memory with ultrahigh storage density, micro-spectrometer, micro-LED array are also discussed.

K. Sun et al. *Science* **375**, 307–310 (2022).

B. Zhang et al. *Nature Electronics* **9**, 642–651 (2026).

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