ΠΑΝΕΠΙΣΤΗΜΙΟ ΚΡΗΤΗΣ
ΤΜΗΜΑ ΕΠΙΣΤΗΜΗΣ ΚΑΙ ΤΕΧΝΟΛΟΓΙΑΣ ΥΛΙΚΩΝ

ΠΑΡΟΥΣΙΑΣΗ ΜΕΤΑΠΤΥΧΙΑΚΟΥ ΔΙΠΛΩΜΑΤΟΣ ΕΙΔΙΚΕΥΣΗΣ

Τίτλος

«Ultrafast Laser Processing On Transparent Materials»

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Παρασκευή, 21/10/2016,

14:00 π.μ.,
Αίθουσα Α210,
Κτίριο Μαθηματικών και Εφαρμοσμένων Μαθηματικών,

Πανεπιστήμιο Κρήτης

Abstract

Laser induced periodical surfaces structures (LIPSS) in nano and micro scale were observed on transparent material surface after irradiating with femtosecond laser pulses. Experimental results showed that the periodicity and the direction of LIPSS was proved to be affected by the fluence, number of pulses and the wavelength of the incident beam. The direction and morphological shape of LIPSS was also proved to be polarization dependent. Taking advantage of that, complex structures were fabricated using a variety of polarization states such as linear, elliptical, circular, radial and azimuthal polarization. Thus the aim of this project is to study and understand the formation of LIPSS in transparent materials. Having this knowledge, complex structures can be produced in large surface areas in order to create biomimetic surfaces which will have similar properties with surfaces found in nature.