

STUDY OF LASER INDUCED PERIODIC SURFACE STRUCTURES GENERATED BY ULTRAFAST FEMTOSECOND LASER ON METALS AND FUSED SILICA

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The formation of subwavelength ripple like structure due to application of pulsed laser on metal surface is a very well-known phenomenon. These subwavelength structures are called Laser induced periodic surface structures (LIPSS) which are responsible for several surface property modifications like superhydrophobicity, structural colour, good tribological properties and cell growth. In this presentation the colorization effect produced by LIPSS has been studied for fused silica as well as stainless steel by using an ultrafast femtosecond pulsed laser. A new type of subwavelength structure called 2D LIPSS has also been studied primarily on stainless steel and a novel manufacturing process has been proposed for generating them. Finally, structural colourisation phenomenon has been observed and studied for the 2D LIPSS and a comparative study of the colour effect has been done for fused silica and stainless steel.

MONDAY, FEBRUARY 17 3:00 PM

EIB 132