

VII Leopoldo García-Colín Mexican Meeting on Mathematical and Experimental Physics



Contribution ID: 90

Type: **not specified**

MARCO CAMACHO LÓPEZ: Laser-induced transformations in metal oxides and metals.

Wednesday, 19 February 2020 18:00 (45 minutes)

In the last few years our group have been focusing on three main research areas. The first one concerns the study of cw-laser induced transformations in metal oxides and metals as molybdenum oxide and bismuth thin films. The second one is the study of pulsed ns-laser induced effects on some metallic materials as titanium, molybdenum and bismuth thin films, the third one and more recent is the preparation of nanoparticles colloids by using the laser ablation of solids in liquids technique. As an example of our current research activities, in this talk I will present experimental results on the modification of bismuth thin films under nanosecond laser irradiation. Varying the per pulse laser fluence and the irradiation time, i. e. the number of pulses, bismuth can be significantly modified. We have found either the formation of Laser Induced Periodic Surface Structures (LIPSS) or oxidation effects depending on number of delivered laser pulses for a well determined per pulse laser fluence. This laser processing technique let us obtain, in a very simple form, micrometric sized regions with either LIPSS or metallic oxides patterning. Potential applications for this processed surfaces are for instance gas sensor and SERS substrates, among others.

Session Classification: SHORT TALKS

Track Classification: SYMPOSIUM ON LASER ABLATION