

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



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CITLALI SÁNCHEZ: Nanosecond laser nanostructuring of glass assisted by thin films, nanoparticles and nanoprism arrays

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Nanostructures have an outstanding potential in several industrial applications, which has motivated to develop fast, easy and flexible methods for their fabrication. Laser irradiation of metal nanostructures such as thin films and nanoparticles induces melting and ablation, which allows the transformation of the nanostructures itself, and the structuration of the substrate below them. For instance, ns pulsed-laser irradiation converts metal films previously deposited on non-wetting substrates, into metal nanodroplets. Once the droplets have been produced, subsequent irradiation allows either the tailoring of the nanoparticles' shape or the nano-drilling of the substrate at the position of the droplets. We study the effect of laser parameters (laser fluence, wavelength and pulse number) and the background pressure on the formation of these nanostructures. In addition, the irradiation of periodic arrays deposited by nanosphere lithography was performed, allowing the morphological manipulation of the nanospheres and the ordered structuration of the substrate.

Session Classification: SHORT TALKS

Track Classification: SYMPOSIUM ON LASER ABLATION