

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



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### **EMMANUEL HARO: Nanostructured surfaces and bulk systems synthesized by laser ablation: fabrication and subsequent experiments.**

*Monday, 17 February 2020 11:30 (45 minutes)*

In this presentation we review some experimental and theoretical results obtained in our group related to laser ablation and laser patterning. The need of developing original solutions for obtaining nanostructured materials is raised. Furthermore we report on a new method that combines the Laser Ablation and the Sol-Gel techniques in order to obtain nanostructured glasses. Au nanoparticles are generated by pulsed laser deposition using the corresponding target. The target is immersed in a transparent solution previously prepared made of tetraethyl orthosilicate, and water. The ablation process was performed subsequently using a NdYAG laser emitting at 532 nm. The pulse duration was 8 ns at a frequency of 10 HZ. Once the nanoparticles were dispersed in the solution the gels were stored for 24 hours at room temperature. After that the samples were thermally treated at 300°C for 10 hours in order to obtain the glasses. High resolution transmission electron microscopy images and UV-visible spectroscopy were used to characterize the Au nanoparticles.

**Session Classification:** PLENARY TALKS

**Track Classification:** SYMPOSIUM ON LASER ABLATION