

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



Contribution ID: 97

Type: **not specified**

NOÉ ENRÍQUEZ: Synthesis of manganese oxides by laser ablation of solids in liquids (LASL).

Thursday, 20 February 2020 16:45 (15 minutes)

Currently there are a number of different methods for obtaining nanosized materials such as thermal oxidation, sol-gel method, solvothermal synthesis, among others. However, the laser ablation of solids in liquids (LASL) technique has acquired great importance due to its relatively low cost, also considered as a green technique because it does not generate by-products and extra chemicals are not required for the synthesis. In addition, a large variety of nanomaterials can be obtained with a simple variation of the laser irradiation parameters during the synthesis, which translates into the modification of sizes and morphologies of the created nanostructures. It is a fast technique since it allows to obtain nanomaterials in a short time as compared to the long synthesis times required by some chemical techniques.

In this work, colloidal suspensions of manganese oxide nanoparticles were synthesized, especially the Mn₃O₄ phase, by using LASL. The experiments were carried out by ablating a manganese target immersed in deionized water as the liquid medium. In addition, the effect of ablation time on the formation of these oxides was studied, this being an important parameter for the final composition of the obtained products. The optical properties were characterized, as well as the structure and morphology of the obtained nanoparticles.

Session Classification: SHORT TALKS

Track Classification: SYMPOSIUM ON LASER ABLATION