

In the first stage of the project DEPOSITION OF LAYERED DOUBLE HYDROXIDES THIN FILMS WITH FUNCTIONAL PROPERTIES we have prepared the systems for experiments: pulsed laser deposition (PLD) and RF pulsed laser deposition (RF-PLD) system and matrix assisted pulsed laser evaporation (MAPLE) in order to grow HT and HT-composite thin films. Following the literature and our preliminary experiments, we have established the experimental protocol and the parameters that will be further investigated to obtain thin films with the desired properties.

In this period we have used PLD and RF-PLD to deposit hydrotalcite films, which were subsequently characterized. Film thickness was measured with a profilometer. The topography of the samples was investigated by AFM and SEM and the surface wettability was obtained from contact angle measurements. Structural analyzes were performed by XRD and SIMS. The parameters that influenced the surface roughness and contact angle were the type of substrate, laser fluence, radiofrequency discharge and the substrate temperature. XRD analyzes led to the conclusion that the wavelength influences the crystallographic structure of the films and the formation of hydrotalcite or mixed oxide phases.

The partial results of the project were disseminated as follows:

Article: *Mg–Al layered double hydroxides (LDHs) and their derived mixed oxides grown by laser techniques*, A. Matei, R. Birjega, A. Nedelcea, A. Vlad, D. Colceag, M.D. Ionita, C. Luculescu, M. Dinescu, R. Zavoianu, O.D. Pavel - Applied Surface Science xx(2010) xxx–xxx, doi:10.1016/j.apsusc.2010.11

Presentations:

- Poster: *Mg–Al Layered Double Hydroxides (LDHs) and their derived mixed oxides grown by laser techniques*, A. Matei, R. Birjega, A. Nedelcea, M. Filipescu, D. Colceag, D. Ionita, A. Moldovan, C. Luculescu, M. Dinescu, EMRS Conference, June 2010, Strasbourg, France

- Poster: *LDHs and their derived mixed oxides grown by laser techniques*, R. Birjega, A. Matei, A. Vlad, M. Filipescu, D. Colceag, A. Nedelcea, M. D. Ionita, C. Luculescu, M. Dinescu, R. Zavoianu, O.D. Pavel, NANOSEA III conference, 28 Iunie-2 Iulie 2010, Marsillia, France