

Advanced synthetic methodologies for thin film and monolayer

(2 CFU)

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PROGRAMME OF THE COURSE

Atomic layer deposition (ALD) and Molecular layer deposition (MLD)

- Theoretical principles: temporal ALD and spatial ALD
- Case studies: simple oxide deposition (Al_2O_3); photonic crystal synthesis; deposition of multi-component systems.
- MLD for the synthesis of monolayer and hybrid inorganic-organic multilayer

Chemical Vapor Deposition (CVD) and Metal-Organic-CVD (MOCVD)

- Theoretical principles and case studies: deposition of simple oxides and multi-component oxides; fluoride film deposition.
- Processes of industrial interest: deposition of GaN, AlN and SiC.

Precursors for vapor phase

- Synthesis and mass transport properties.