

AVAILABLE THESIS TOPICS A.A. 2013-2014

Laboratorio Materiali Micro e Nanostrutturati

Dipartimento di Energia

NEMAS – Center for NanoEngineered Materials and Surfaces

Politecnico di Milano

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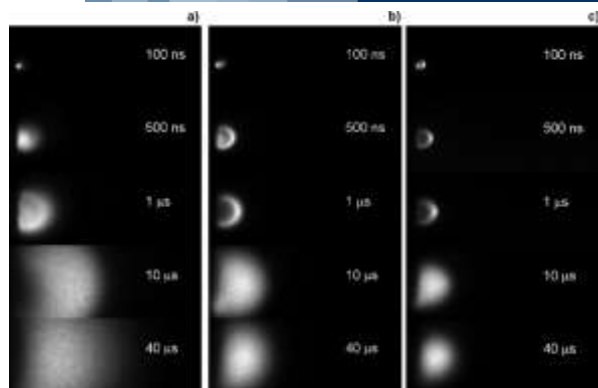
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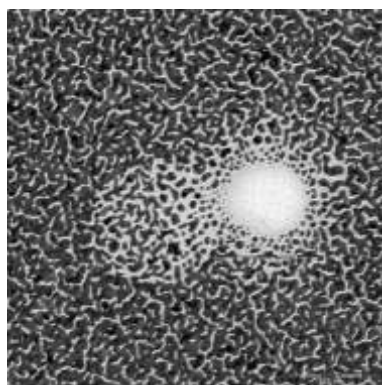
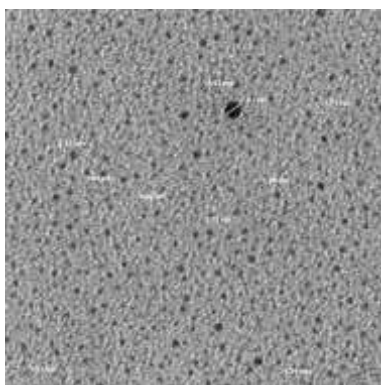
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Controlled synthesis of metallic nanoparticles for biomedical sensors

- Synthesis via ns laser ablation of 2D NP arrays of noble metals for molecular identification down to the single molecule via Surface Enhanced Raman Scattering

(collaboration with CNR-IPFC, Univ. Messina, Dip. CMIC Politecnico, NILPRP Bucharest)



Images: expansion of laser-generated plasmas and TEM pictures of 2D Ag NP arrays on (100) Si

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Improving ski edges for skiddest skis with high wear resistance on compact snow prepared for competition

Comparative analysis (morphology, composition, structure) and testing, both lab and field, of edge steels utilized in competition skis

(collaboration with Dip. CMIC Politecnico, Blossom-ski)

Images: advanced use of ski edges and details of ski edges

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Controlled synthesis of artificial snow: the nucleation stage of crystallites of artificial snow

Field observation via ultra-fast photography of the first stages of propagation of artificial snow produced under controlled, different conditions. Modelling the nucleation process to design innovative nucleator - nozzle.

(collaboration with Honestamp-VA, Monterosa-ski)

Picture: low-pressure artificial snow generator in operation and details of a nucleator – nozzle crown array



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