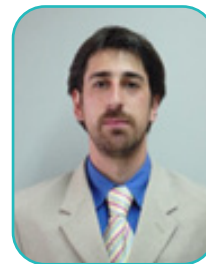


## New developments on thermal spray processes at CPT from Universitat de Barcelona

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### Abstract

This presentation will be focused on thermal spray processes that consist of a couple of techniques that are able to produce coatings for the improvement of the required properties. The basic concept of thermal spraying is to deposit a feedstock material that is propelled by a jet zone onto a substrate to grow a coating or even a freestanding part. Thermal Spray Processes are able to produce coatings with nearly any material, from metals, polymers or ceramics, on nearly any surface, because of the large variety of processes could adapt the coating technology to the technical needs of the customer and also to his economic performance.

Some of the developments that will be explained are focused on biomaterials for implant osteointegration, nanocomposites for photocatalytic response, nanostructured coatings for wear and corrosion resistance, or amorphous/metastable alloys with improved properties.

### Biography

Sergi Dosta has expertise in Materials Science and Engineering since 2003, focused in the Thermal Spray field with nanostructured materials at Thermal Spray Centre (CPT) from the University of Barcelona (UB), becoming associate professor at UB in 2007. He has published more than 85 research indexed papers, has directed 4 PhD thesis and has 20 patents and industrial trade secrets. He has been responsible of 2 European projects from the H2020 and has lead over 50 industrial and research projects. Expert in Thermal Spray Technology has been invited to give talks in prestigious conferences and workshops all over the world.

### Publications

1. Window of deposition description and prediction of deposition efficiency via machine learning techniques in cold spraying
2. Effect of processing conditions on the mechanical performance of stainless steel cold sprayed coatings
3. Effect of the Outer Layer of Al Coatings Deposited by Cold Gas Spray on the Microstructure, Mechanical Properties and Corrosion Resistance of the AA 7075-T6 Aluminum Alloy
4. NUMERICAL AND EXPERIMENTAL STUDY OF THE DEPOSITION OF WC-CO PARTICLES BY COLD SPRAY
5. In-vitro comparison of hydroxyapatite coatings obtained by cold spray and conventional thermal spray technologies
6. Antimicrobial Activity and In-Vitro Biocompatibility of Copper Surface Prepared by Cold Gas Spray
7. The Effect of Hot Treatment on Composition and Microstructure of HVOF Iron Aluminide Coatings in Na<sub>2</sub>SO<sub>4</sub> Molten Salts
8. X-ray microtomographic characterization of highly rough titanium cold gas sprayed coating for identification of effective surfaces for osseointegration
9. Influence of cold gas spray parameters on the corrosion resistance of Al-Al<sub>2</sub>O<sub>3</sub> coatings sprayed on carbon steel

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