

## PROCETS Partners



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**H2020-NMP-PILOTS-2015**

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 686135

# PROtective composite Coatings via Electrodeposition & Thermal Spraying



## The Problem that PROCETS addresses

There are 2 main techniques that dominate the protective coatings sector: i) hard chromium (HC) plating and ii) thermal spray (TS).

- i. In the first case, the EC has restricted the use of Cr+6 by the end of 2017 due to its extremely negative health & environmental impact.
- ii. In the second case, recent toxicity studies have proven the toxicity of Co-WC particles in a dose/time-dependent manner.

## The Solution that PROCETS offers

- Use of nano-particles for production of composite coatings with superior properties compared to those of hard chromium produced by electroplating or to those of WC-Co produced by thermal spray.
- These novel nano-particles are used into existing production lines after appropriate modifications.

**INDUSTRIES CAN KEEP EXISTING PRODUCTION LINES AND  
SIMPLY REPLACE THE MATERIALS USED :**

protect workers' health, comply with EC restrictions, &  
ensure low cost but long lasting high tech coatings

Visit: <http://www.procets.eu/>

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# ***PROtective composite Coatings via Electrodeposition & Thermal Spraying***

*Guaranteed high efficiency production of low cost but long lasting high tech coatings*

## ***Products and Services Offered in the Pilot Plants***

### ***Pilot Plant I:***

*CPT – Universitat de Barcelona, Spain/Catalonia/Barcelona*

***Process: Thermal Spraying of Nano Materials, High Velocity Oxygen Fuel***

***Service Offered: thermal sprayed coatings for various products***

***Markets addressed:*** *aerospace, automotive, paper mill industry, mining industry, chemical plants, pumps and valves, oil & gas, energy.*

### ***Pilot Plant II:***

*Cromomed S.A, Spain/Valencia/Puerto de Sagunto*

***Process: Thermal Spraying of Nano Materials, Cold Gas Spray***

***Service offered: thermal sprayed coatings for various products***

***Markets addressed:*** *automobile, aerospace, additive manufacturing, wind energy, oil & gas, plastics, nuclear plants*

### ***Pilot Plant V:***

*MBN Nanomateriala SPA, Italy/ Treviso /Carbonera*

***Process: High Energy Ball Milling and agglomeration***

***Product Offered: Nanostructured Powders for thermal spraying process, powder metallurgy and laser based manufacturing***

***Markets addressed:*** *cutting tools industry, biomedical, oil and gas, automotive, aerospace, paper and steel industry*

### ***Pilot Plant III:***

*Avanzare Innovacion Tecnologica SL, Spain/La Rioja/Navarrete*

***Process: Direct Current Plating Pilot Line***

***Service Offered: direct current plating for various products***

***Markets addressed:*** *automotive, cutting tools Industry, brick industry*

### ***Pilot Plant IV:***

*Artia Nano-Engineering & Consulting, Greece/Attica/Athens*

***Process: Pulse Current Plating Pilot Line***

***Service Offered: electroplated coatings for various products***

***Product Offered: Electrolytic baths with integrated nano-particles***

***Markets addressed:*** *automotive, metal working industry, cutting tools industry, brick industry*