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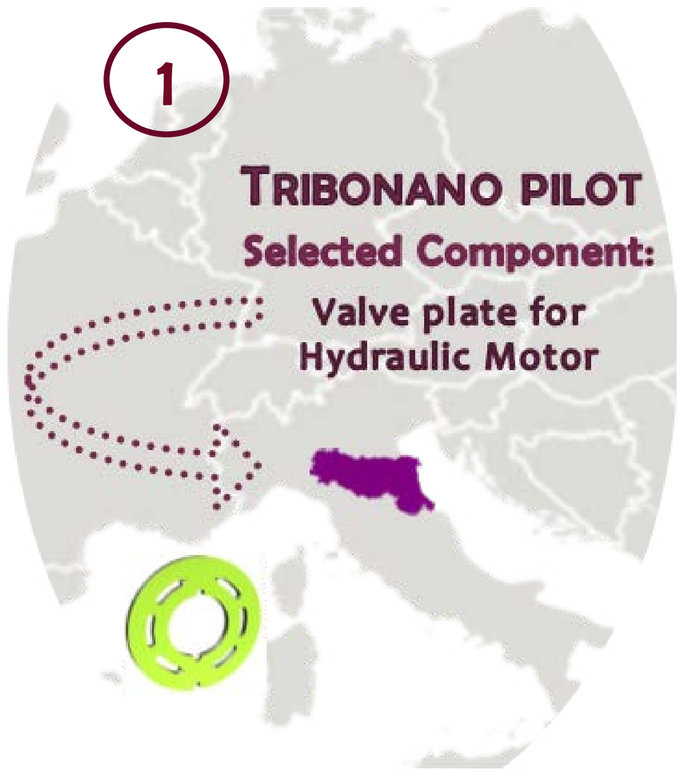
To Impulse the Uptake of Nanotechnology Based Solutions

1



Thermal Spray Technology for Nanostructured Coatings by Solid State Deposition

FOR INDUSTRIAL MACHINERY SECTOR

Technological Needs

- METALLIC COMPONENTS WITH IMPROVED DURABILITY
- MORE EFFICIENT MANUFACTURING PROCESS

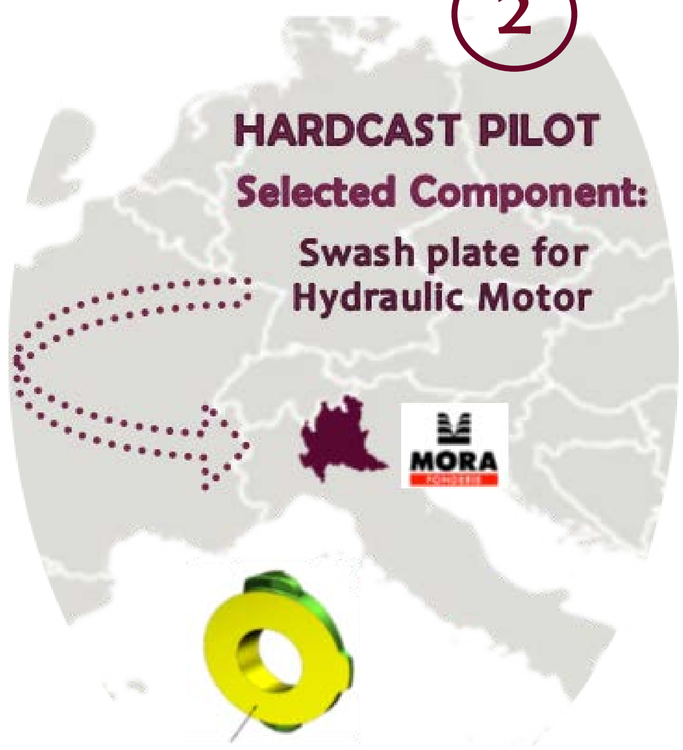
Proposed Solutions

- NANOSTRUCTURED POWDERS FOR METALLIC CERMET COATINGS
- THERMAL SPRAY TECHNOLOGY FOR SOLID STATE DEPOSITION

Provided Benefits

- REDUCTION IN PROCESS COSTS: 10% in wear resistance
- REDUCTION OF PARTS' MACHINING: -20% of costs associated to the finishing of the component
- REDUCTION OF MECHANICAL FRICTION LOSSES: -15%
- REDUCTION OF RAW MATERIAL USE: -15%

2



New Gravity Casting Process for Nano-Reinforced Metal Parts

FOR FOUNDRY MACHINERY SECTOR

Technological Needs

- METALLIC COMPONENTS WITH IMPROVED DURABILITY AND WEAR RESISTANCE
- INDUSTRIAL MACHINERY WITH INCREASED MECHANICAL EFFICIENCY AND REDUCED PRESSURE LOSSES

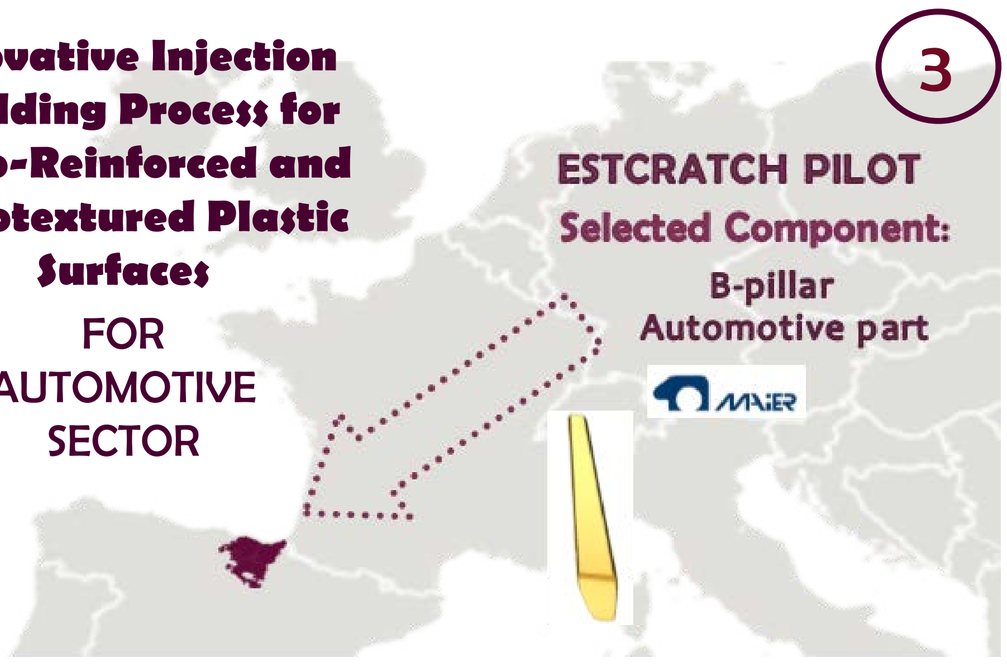
Proposed Solutions

- NANOREINFORCEMENTS ADDITION AND DISPERSION VIA MASTER-PELLETS
- NEW, LOW COST AND SAFE METAL CASTING PROCESS

Provided Benefits

- INCREASED EFFICIENCY OF THE COMPONENT: +15%
- REDUCTION OF POWER LOSSES: -15%
- INCREASED COMPONENT'S LIFETIME: –15% wear/temperature resistance

3



Innovative Injection Moulding Process for Nano-Reinforced and Nanotextured Plastic Surfaces

FOR AUTOMOTIVE SECTOR

Technological Needs

- AESTHETIC PARTS WITH EXCELLENT MECHANICAL PROPERTIES AND APPEARANCE
- AESTHETIC PARTS WITH LIGHT, WEATHERING AND SCRATCH RESISTANCE

Proposed Solutions

- NANOREINFORCED THERMOPLASTIC BASED ON MASTERBATCHES
- INSERTS FOR INJECTION MOULDS WITH NANOTEXTURED SURFACES

Provided Benefits

- IMPROVED RESISTANCE OF THE MATERIAL: +50%
- LESS EXPENSIVE COMPONENTS: -20%
- IMPROVED RECYCLABILITY OF THE PARTS
- GREENER PRODUCTION PROCESS
- MORE COLOUR AND FUNCTIONALITY

IZADI-NANO2INDUSTRY Project Consortium

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