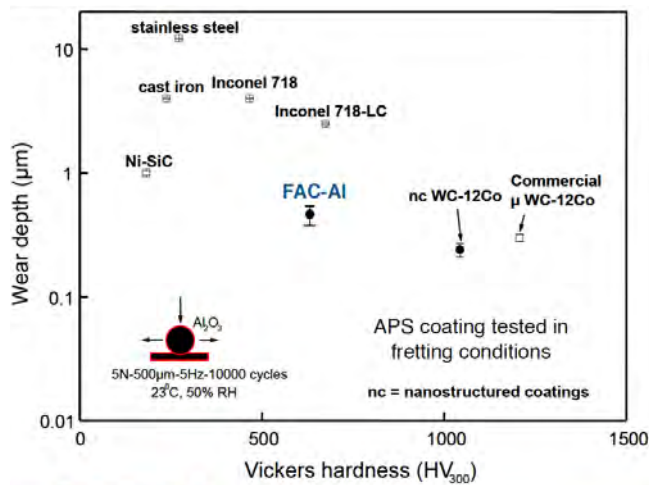


Advanced Materials CerMet Powder (FeCuAl₂O₃)

Introduction

MBN will design and scale-up a High Energy Ball Milling (HEBM) process to enable the production of advanced materials with fine and homogeneous chemical distribution of elements and an “ultrafine” crystalline structure down to the nanometre scale.

PilotManu will develop Nanostructured CerMet powders consisting of alumina dispersed in a Fe-Cu-Al matrix. The material design is based on a trade-off between the lubricating effect of soft areas and the good resistance to abrasion of the harder areas. The addition of Cu and Al as alloying elements in the metallic matrix decreases the coefficient of friction, while, particles of alumina increase the tribology.



Applications

Coatings based on the new powder exhibit outstanding behavior in dry sliding conditions and are similar to WC-Co based CerMet in fretting conditions.

Specification

Nominal composition	Unit	Value
Iron	wt%	50
Aluminum	wt%	10
Copper	wt%	25
Alumina	wt%	15

Physical Characteristics

Powder size	Unit	Value
	µm	-45+15
Powder density		
Skeletal - ASTM B923	g/cm ³	6.0
Bulk - ASTM D7481-09	g/cm ³	2.4
TAP - ASTM B527	g/cm ³	3.1

Different powder sizes are available

Coating performance

	Unit	APS
Hardness	HV	450
Adhesion	MPa	>60
Thickness	µm	300
Porosity	%	< 2

Contact

If you are interested in evaluating the new advanced powders developed by PilotManu, please contact: info@pilotmanu.eu



PILOTMANU

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Partner

MBN nanomaterialia®



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