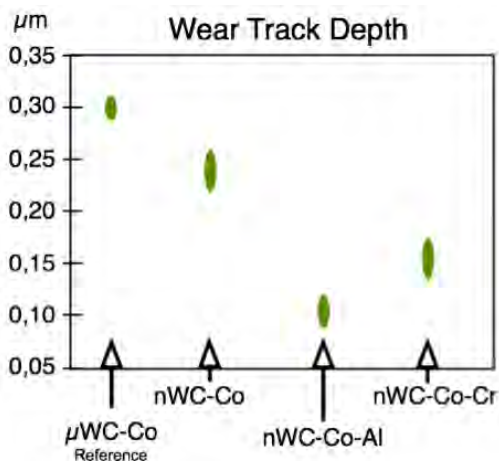


Advanced Materials CerMet Powder (WC-Co)

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 Tungsten Carbide in a Cobalt metallic matrix. The addition of Al into WC-Co enhances the wear-resistance since Al is an alloying element that increases the cohesion within the coating, forming Al₂O₃ and reduce the porosity. This leads to an improvement in wear resistance, of up to three times lower compared to micron-sized WC-Co coatings.



Fretting tests against corundum balls of HVOF coatings

Thanks to the addition of Al, the decarburization of WC is avoided thereby retaining improved mechanical and tribological properties.

Specification

Nominal composition	Unit	HVOF
Tungsten Carbide	wt%	86
Cobalt	wt%	12
Aluminum	wt%	2

Physical Characteristics

Powder size	Unit	Value
Sieve and cls	µm	-45+15
Powder density		
Skeletal - ASTM B923	g/cm ³	12.6
Bulk - ASTM D7481-09	g/cm ³	5.1
TAP - ASTM B527	g/cm ³	6.4

Different powder sizes are available

Coating performance

	Unit	APS
Hardness	HV	1200
Adhesion	Mpa	>60
Thickness	µm	200

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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