White Graphene Enhanced Nickel Plating

Key findings:

White Graphene (WG) greatly enhances the wear resistance of electroless nickel plating, with 0.5wt% loading improving the wear resistance by up to 80%.

Wear resistance: **+80%**

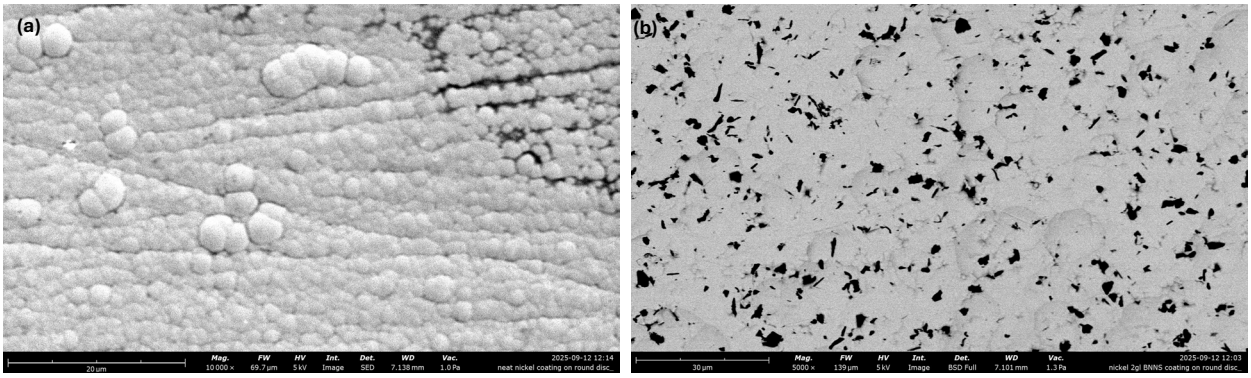


Figure 1. SEM images of (a) pristine nickel plating (b) nickel plating containing White Graphene

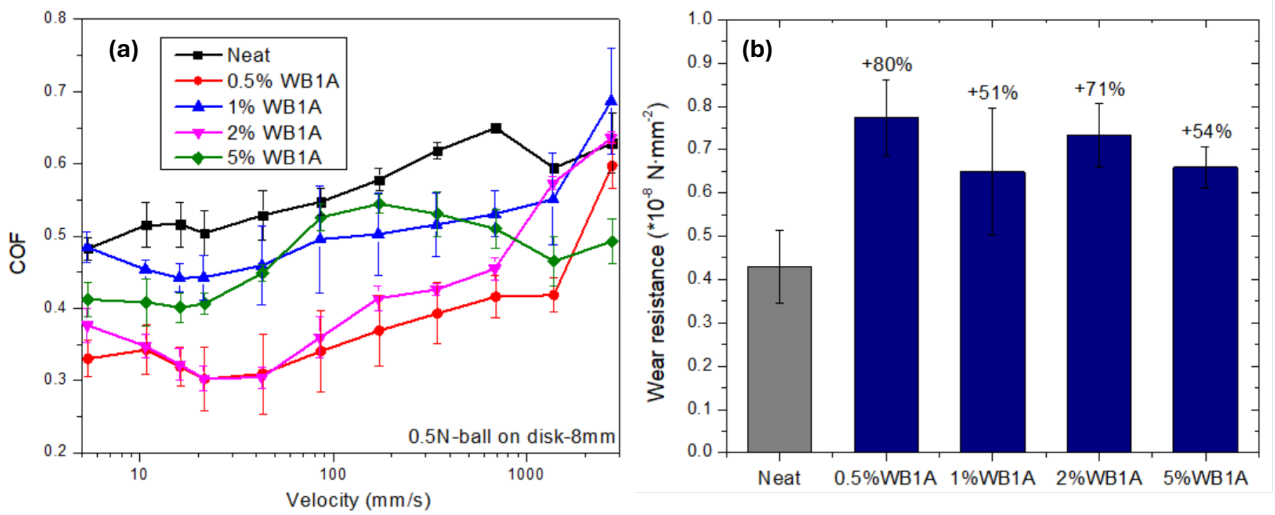


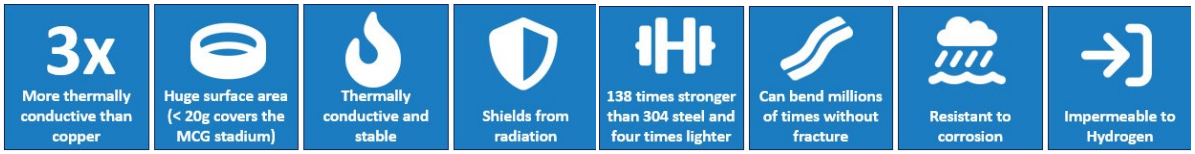
Figure 1. (a) Coefficient of friction of nickel coatings with different amount of White Graphene
(b) Wear resistance of the nickel coatings at various loadings of White Graphene.

White Graphene

A novel two-dimensional layered nanomaterial - BNNS







PRODUCT CHARACTERISTICS	METHDOLOGY	STANDARD
Appearance	Visual	White solid powder
Lateral Size	Scanning Electron Microscope	0.3-10 µm
Lateral Aspect ratio	Scanning Electron Microscope	1:1 - 1:30
Thickness	Atomic Force Microscope	1-50 nm
Bulk density	EN17199-1 weighting method	0.055 g/cm³
Respirable dustiness fraction	EN17199 Small Rotating drum (M4)	55 mg/kg
Water solubility	OECD 105 Flask Method	Insoluble
	Raman Spectroscopy	BN vibrational peak
	Fourier-transform infrared spectroscopy	BN vibrational peaks
Chemical composition and Impurities	Energy-Dispersive X-ray Spectroscopy	B & N > 98% O < 2% Other < 0.5%
Surface functionalization	-	Customized

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