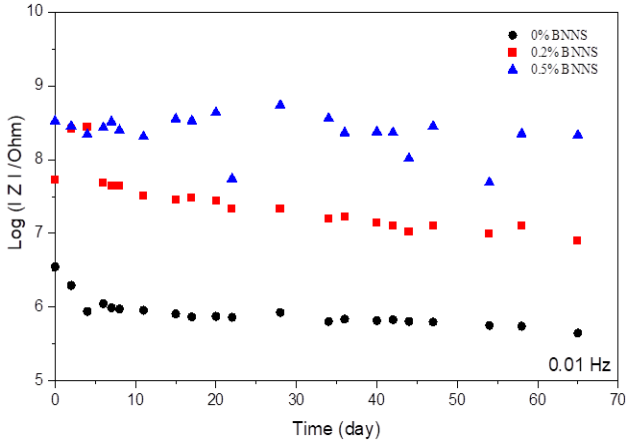
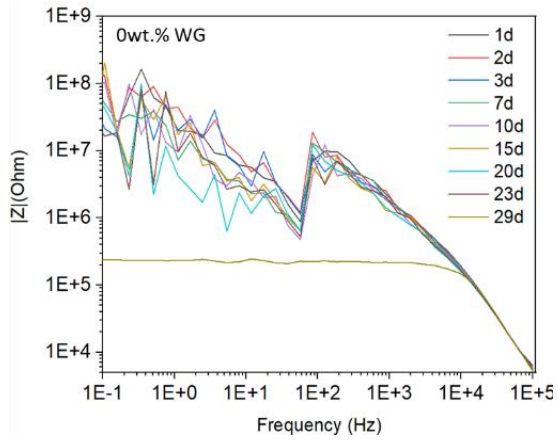
White Graphene Enhanced Anti-corrosion Coatings

Key findings:

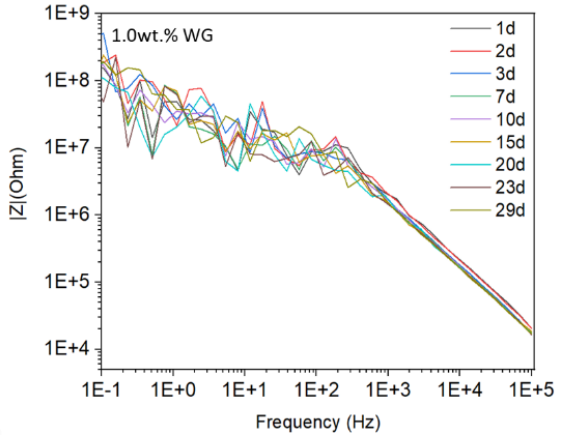
White Graphene (WG) can provide more than 50% performance improvement to anti-corrosion coatings as shown by Electrochemical Impedance Spectroscopy (EIS) results below:



This chart shows a comparison of Epoxy resin coatings with 0%, 0.2% and 0.5% White Graphene (BNNS) immersed in H2SO4 solution at room temperature for 65 days. The significant performance improvements provided by the addition of different amounts of White Graphene can be clearly seen.
(Adding 1% of White Graphene is recommended for optimal results.)



This graph shows Gelcoat without White Graphene lasted for 29 days in salt water at room temperature before starting to fail.



This graph shows the performance of Gelcoat with 1% White Graphene was not affected after 29 days in salt water at room temperature.

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
Chemical composition and Impurities	Raman Spectroscopy	BN vibrational peak
	Fourier-transform infrared spectroscopy	BN vibrational peaks
	Energy-Dispersive X-ray Spectroscopy	B & N > 98% O < 2% Other < 0.5%
Surface functionalization	-	Customized

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