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## Surface Roughness of ZnO-SiO<sub>2</sub> Nanocoating (Conference Paper) [\(Open Access\)](#)

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### Abstract

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Nanocoating acted as a barrier to avoid the transportation of corrosive species. Nanoparticles provide the resin or coating with a continuous, solid and protective network layer. Silicon wafer p-type substrate <101> was used as standard materials while tungsten wire of 0.15mm diameter was used as tip for scanning operation. Nanoeducator showed that present of nanoparticles increase the surface roughness and maintain the size of nanoparticles. Nanoparticles well distribute in nanosize. Immersion test showed nanoparticles also, improved the adherence of the cured epoxy coating. © Published under licence by IOP Publishing Ltd.

### SciVal Topic Prominence

Topic: Hydrophobicity | Wetting Transition | Wettability

Prominence percentile: 99.949

### Chemistry database information

#### Substances



#### Indexed keywords

Engineering controlled terms:

[Coatings](#) [Disasters](#) [Epoxy resins](#) [II-VI semiconductors](#) [Nanoparticles](#) [Network layers](#)  
[Oxide minerals](#) [Silica](#) [Silicon oxides](#) [Silicon wafers](#) [Zinc oxide](#)

Engineering uncontrolled terms

[Corrosive species](#) [Cured epoxy](#) [Immersion tests](#) [Nano-coatings](#) [Nano-size](#)  
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- 1 (2018) *International Measures of Prevention, Application and Economics of Corrosion Technology (IMPACT)* National Association of Corrosion Engineers

- 2 Thomas, G.  
(2013) *Market Research Study on Nanocoatings*. Cited 2 times.  
<http://marketpublishers.com>

- 3 Cabrera-Sierra, R., Sosa, E., Oropeza, M.T., González, I.  
Electrochemical study on carbon steel corrosion process in alkaline sour media

(2002) *Electrochimica Acta*, 47 (13-14), pp. 2149-2158. Cited 39 times.  
doi: 10.1016/S0013-4686(02)00090-7

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- 4 Armelin, E., Pla, R., Liesa, F., Ramis, X., Iribarren, J.I., Alemán, C.  
Corrosion protection with polyaniline and polypyrrole as anticorrosive additives for epoxy paint

(2008) *Corrosion Science*, 50 (3), pp. 721-728. Cited 193 times.  
doi: 10.1016/j.corsci.2007.10.006

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- 5 Shambhu Sharan, K.  
Applications of Nano Pigment Particles for the Development in Corrosion and Scratch Resistance of Epoxy-Zeolite Coatings  
(2015) *The International of Engineering and Applied Sciences (IJEAS)*, 2, pp. 103-109. Cited 2 times.