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**Codeposition of electroless Ni-P/ZaO nano composites and evaluation of corrosion resistance of the coatings**

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**Abstract**

Codeposition of nano ZnO with Ni-P coatings was carried out on 99% pure copper substrates. The ZnO nano particles were prepared by simple Sol-Gel method using Zinc acetate dihydrate as precursor. The particle size of the same was found to be <100 nm. The process optimization for codeposition of nano ZnO with Ni-P coatings was carried out by varying the composition of nano ZnO particles using ultrasonicator. An adherent and uniform coating of Ni-P/ZnO was obtained. Presence of ZnO in the coatings was confirmed by EDAX. [Surface morphology](https://www.sciencedirect.com/topics/materials-science/surface-morphology) of the coatings was studied by SEM which shows the smooth homogenous surface in Ni-P/ZnO [composite coating](https://www.sciencedirect.com/topics/materials-science/composite-coating). [Corrosion resistance](https://www.sciencedirect.com/topics/materials-science/corrosion-resistance) of the coatings was evaluated by Salt spray test and Galvanostatic Polarization method using 5% NaCl solution. Corrosion resistance of the Ni-P and Ni-P/ZnO [nano composite coatings](https://www.sciencedirect.com/topics/materials-science/nanocomposite-coating) were compared. Incorporation of nano ZnO in the coatings found to enhance the corrosion resistance and [microhardness](https://www.sciencedirect.com/topics/materials-science/microhardness) of the coatings.

**Keywords:**

Codeposition Sol-gel process Electroless TGA Polarization Salt spray test

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