



## A study on the effect of 2, 5-dihydroxy benzaldehyde on Electrodeposition of Zinc-Nickel alloy

Nagabhushana<sup>1\*</sup>, G. P. Mamatha<sup>2</sup>, S. Basavanna<sup>3</sup>

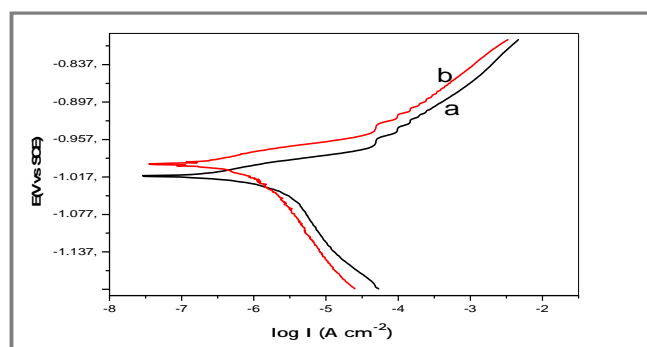
1. Department of Chemistry, Kuvempu University, Shankaraghatta-577451 Karnataka, **INDIA**
2. Department of Chemistry, Davanagere University, Shivagangotri, Davanagere-577002, Karnataka, **INDIA**
3. Department of Chemistry, Prerana PU College, Tumkur-572102, Karnataka, **INDIA**  
Email: [nagabhushanaspatil1980@gmail.com](mailto:nagabhushanaspatil1980@gmail.com)

Accepted on 11<sup>th</sup> March, 2023

### ABSTRACT

An organic additive, 2, 5 dihydroxy benzaldehyde (DHB), was used for the electrodeposition of Zn-Ni alloy from a sulphate bath. The cyclic voltammetry was used to study the electrodeposition process while electrochemical impedance spectroscopy and potentiodynamic polarization techniques were used to investigate corrosion. The Zn-Ni-bright deposit obtained is more uniform, fine-grained, and corrosion-resistant than the Zn-Ni-dull deposit. The morphology and phase of the deposits were studied using scanning electron microscopy and X-ray diffraction.

### Graphical Abstract:



Typical Tafel plots of Zn- Ni alloy electrodeposits in 3.5 % NaCl solution obtained (A) in absence and (B) in presence of DHB in the bath solution.

**Keywords:** Zn-Ni alloy, Electrodeposition, Cyclic voltammetry, Phase structure.