

Preparation of Polyaniline/Epoxy Composite and Its Anti-Corrosion Performance

Qianqian Wang

Civil Engineering College, Zhengzhou University of Technology, Zhengzhou, Henan 450000, China
E-mail: wqqqianqianw@163.com

Received: 21 November 2021 / *Accepted:* 11 January 2022 / *Published:* 4 March 2022

Anti-corrosion coatings are an effective method of reducing material surface corrosion and have been extensively studied as a result. Polyaniline is a novel type of polymer material that exhibits low cost, excellent chemical and thermal stability, ease of synthesis, and high anti-corrosion properties. Epoxy resin, another key component, exhibits excellent adhesion, strength, chemical resistance, and wear resistance. We attempted to combine the excellent film-forming properties of epoxy resin with the anti-corrosion properties of polyaniline in this study in order to create functional coatings with enhanced anti-corrosion properties. Polyaniline/epoxy composite coatings with various polyaniline additions were prepared in this work, with polyaniline additions of 0%, 1%, 2%, and 4%. EIS was used for 11 days to determine the impedance and capacitive resistance spectra of the various coatings. When the control realities are compared, it is clear that the coating with a 2% addition has significantly better anticorrosive performance than the other samples.

Keywords: Polyaniline, Epoxy resin, Anti-corrosion, Coating, EIS

[FULL TEXT](#)

© 2022 The Authors. Published by ESG (www.electrochemsci.org). This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution license (<http://creativecommons.org/licenses/by/4.0/>).