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**Antifouling and anticorrosion properties of one-pot synthesized dedoped
bromo-substituted polyaniline and its composite coatings**

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ABSTRACT

One-pot method was proposed to chemically synthesize dedoped bromo-substituted polyaniline (Br-PANI). Epoxy resin composite coatings containing 2.0 wt% of dedoped Br-PANIs (EBP) were also prepared. Scanning electron microscopy (SEM), organic elemental analysis and X-ray photoelectron spectroscopy (XPS) analysis demonstrated that Br-PANIs with different Br/N molar ratios were successfully synthesized. The anticorrosion and antifouling performances of EBP coatings were characterized by accelerated immersion test, electrochemical impedance spectroscopy (EIS), XPS, antibacterial test and field test. Results showed that EBP coatings presented excellent protection after 100 days' of immersion in 12.0 wt% NaCl solution at 95 °C. Moreover, EBP coatings had better antibacterial and antifouling performance than pure epoxy coating and dedoped PANI composite coating. In particular, the anticorrosion and antifouling abilities of EBP improved with the

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