Short Communication

Enhanced Interphase Adhesion and Anticorrosion Properties in Epoxy Coating Modified via Acrylic Resin

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Poly (α-methyl methacrylate-butyl acrylate-glycidyl methacrylate) (PMBG) and poly (α-methyl methacrylate-butyl acrylate) (PMB) were synthesized via solution polymerization and characterized via Fourier transform infrared spectroscopy (FTIR). And then, the modified epoxy coatings were prepared through dispersing 4 wt.% of PMBG and PMB in an epoxy coating through physical blending, respectively. The coatings were painted on the mild steel substrates and their anticorrosion performances were characterized by salt spray test and electrochemical impedance spectroscopy (EIS). Interphase adhesion was characterized by pull-off test. Incorporation of 4 wt.% of acrylic resin, especially PMB (as a constituent of the resin), into the epoxy coating significantly enhanced the anticorrosion performance and interphase adhesion of the coating (45%) through improving their inner structure.

Keywords: Organic coatings; Corrosion resistance; Interphase adhesion; Salt spray test; EIS

FULL TEXT

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