Short Communication

Preparation of Graphene-Cement Paste Anode for Chloride Extraction from Marine Reinforced Concrete Structures

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Electrochemical chloride extraction (ECE), a technology for the rehabilitation of chloride-contaminated concrete, has attracted widespread attention. The performance of the ECE method towards marine reinforced concrete was studied with the graphene-cement paste as anode and artificial sea-water as electrolyte. The efficiency of removing chloride obtained with graphene-cement anode was higher than that obtained with a conventional Ti-RuO₂ mesh anode. With the usage of the graphene-cement anode, the chloride extraction process was found to be more effective for the surface area. In addition, the performance of ECE process was also investigated by altering various parameters such as moistening frequency and current density. The results demonstrated that every 12 h drip moistening system was necessary in order to maintain the constant humidity, and further constant performance.

Keywords: Electrochemical chloride extraction; Graphene-cement; Moistening; Ti-RuO₂;

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