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(57) Abstract :

Title: POZZOLAN BASED BATTERY SYSTEM WITH MICROBIAL ACTIVITY ABSTRACT A method of a preparation of a pozzolan based battery system with microbial activity 100 comprising: preparing a pre-lubricated mould of a required dimensions with inner diameter of 100 mm (diameter) and 35 mm (height) to cast a electrolyte matrix (101); adding and drying a constituent such as 400 g of a cement, a 100 g of a sand, a 8% of cement weight of a inorganic salts, 2% of cement weight of a graphite synthetic (325mesh) and a bacterial species of geobacter, shewanella, idiomarina and blending them thoroughly in a specific device to form a mixture (102); adding water to the mixture in portions with continuous mixing to form a thick paste (103); loading the formed thick paste into the pre-lubricated mould with continuous tamping and vibrations so that no air voids are present within the fresh composite mass (104); positioning an electrode plate properly upon filling the mould to a required depth by pushing into the thick paste such that 5 mm of the plate is protruded out of electrolyte to facilitate electrical connections to form an electrolyte matrix (105); and keeping the electrolyte matrix under water after demolding for a curing period of 7 days so that no cracks are developed and sufficient strength is attained to obtain a pozzolan based battery system with microbial activity (106), wherein the pozzolan based battery system with microbial activity 100 is embedded inside a concrete structural element to utilize a battery system with a corrosion protection and capable of delivering electrical output to perform a low power operation. FIG. 1

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