Paper from Proceeding of the National Conference on Innovative Developments in Science, Technology & Management (NCIDSTM-2015) Organized by Ganga Technical Campus, Soldha, Bahadurgarh, Haryana (India) March 1st 2015 Published by International Journal of Engineering Sciences Paradigms and Researches (IJESPR) with ISSN (Online): 2319-6564, Impact Factor: 2.20 and Website: www.ijesonline.com

Abstract Details

Title: Potential of Bacteria as a Self-Healing Agent in Concrete

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Abstract: Concrete is used worldwide as a construction material because of its several properties. The main problem with concrete is that, it has low tensile strength which results in development of cracks. These cracks thereafter allow chemicals and water to enter in the surface of the concrete and degrade the concrete, reducing the performance of the structure and also require expensive maintenance in the form of repairs. Micro cracks are therefore the main cause of structural failure as they damage concrete and reinforcement due to exposure to water and oxygen and possibly CO2 and chlorides. In this paper the applicability of specifically calcite minerals precipitating bacteria for concrete repair and plugging of pores and cracks in concrete has been recently investigated. Also the possibility of using bacteria as a sustainable and concrete embedded self healing agent was studied and results from ongoing studies are discussed.

Keywords: Bacterial concrete, self healing process.