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EXPERIMENTAL STUDY & MICROSTRUCTURAL BEHAVIOUR OF CONCRETE WITH GRAPHENE OXIDE

Divyarajan J[1] Robert Singh R[2] Veerakumar R[3]

[1] PG Student, Vel Tech Rangarajan Dr. Sagunthala R&D Institute of Science and Technology, Tamil Nadu.
[2&3] Assistant Professor, Vel Tech Rangarajan Dr. Sagunthala R&D Institute of Science and Technology, Tamil Nadu.

ABSTRACT: Micro structural study on concrete is a unique technique to find out the morphological features of concrete. X-Ray Diffraction Analysis (XRD), Scanning Electron Microscope (SEM) is the general technique used to visualize the micro structural behavior of concrete during hydration process. The specific characteristics within the concrete can be visualized through these modern techniques. The mineral data obtained from the micro structural study will helps to interpret the unique behavior of concrete and presence of minor compound inside the hardened cement paste of concrete. The hydration process in concrete will leads to formation of C-S-H gel, Ca $(OH)_2$ crystals, and other mineral compounds which influences the individual properties of concrete. In this project work citric acid method, i.e, pyrolysis method is used to synthesis grapheme oxide(GO) which is later used in the partial replacement of 0.1%, 0.3% and 0.5% of cement to produce a better performance concrete This paper presents the comparative study of various of microscopic analysis of graphene concrete & conventional concrete including its effects on hydration & workability.

Keywords: *X-Ray Diffraction Analysis (XRD), Scanning Electron Microscope (SEM),Calcium Silicate Hydrate (C–S–H), Graphene oxide(GO), Micropores*