Shree Laxmi Prashant, J Nanomed Nanotechnol 2018, Volume 9
DOI: 10.4172/2157-7439-C9-091

21st World
NANOTECHNOLOGY CONGRESS
October 15-17, 2018 Dubai, UAE

Nanomaterials for densifying the concrete microstructure and improving strength and durability

Shree Laxmi Prashant
Manipal Institute of Technology, India

Microstructure plays a vital role in defining the strength and durability performance of concrete. The study of mechanism taking place at a nanoscale especially the hydrated cement paste helps to engineer the concrete in a well-defined and systematic way. This helps in improving the microstructural properties of concrete in the interfacial transitional zone. Nanoparticles also densify the concrete by occupying the spaces between the cement particles. This reduces the porosity of the cement paste. Nanoparticles are usually added in small amounts about 1-2% of the cement content in concrete. The shape and amount of nanoparticles can be tailored in order to optimize the performance of concrete to suit various projects. This paper reports the state of the art in use of nanoparticles in concrete.

Biography

Shree Laxmi Prashant has her expertise in the fields of concrete technology. She has a passion in trying out new and innovative methods of designing the concrete to optimize the performance of concrete. She has been working on High Volume flyash concrete, Geopolymer concrete and use of industrial, plastic and C&D waste as filler materials for concrete. Presently guiding one Phd Student (under QIP scheme), one Mtech and 6 Btech students for their project on the theme of Sustainable development in concrete using various non biodegradable waste including ewaste. Developing geopolymer concrete in order to minimize the use of cement in concrete to reduce the carbon foot print. The paper entitled "Effect of partial replacement of coarse aggregates by E waste on strength properties of Concrete" has been awarded as Best Technical paper at International Conference on Sustainable construction and building materials at NITK Surathkal June 18-22 2018

shrilaxmi.civil@gmail.com

Notes: