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TITLE OF PROJECT: NANOTECHNOLOGY IN CONCRETE- ENHANCING PERFORMANCE AND SUSTAINABILITY

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ABSTRACT (150-300 words):

The presentation covers how nanotechnology is revolutionizing the characteristics and functionality of concrete, a material used in building all around the world. Because of its capacity to work with materials at the nanoscale, nanotechnology provides creative answers to problems that conventional concrete faces, like strength constraints, durability problems, and environmental concerns. It explores the integration of different nanomaterials into the concrete matrix, such as nanoparticles, nanofibers, and nanotubes. The mechanical strength, durability, and resistance to environmental deterioration are all improved by these nanoscale additions. Important aspects of nanotechnology in concrete will be covered, including the mechanisms of nanoscale reinforcement and the ensuing macroscopic advantages. The presentation showcases the potential of nanotechnology to transform the construction industry by highlighting case studies and real-world examples of its successful application in concrete applications. The topic of nanotechnology in concrete and its sustainability for the environment will be covered. By lowering the requirement for conventional cementitious materials and improving the recyclability of concrete structures, nanomaterials can aid in the development of resource- and eco-efficient concrete. Issues and concerns surrounding the broad use of nanotechnology in concrete, such as long-term performance monitoring, standardization, and financial ramifications. The presentation ends with a focus on how promising nanotechnology is for influencing the next generation of sustainable and high-performance concrete structures. Through this presentation, we will gain insights into the current state of nanotechnology in concrete, its potential benefits, and the challenges associated with its implementation. The transformative nature of nanotechnology in concrete opens new avenues for creating resilient, eco-friendly, and durable infrastructure in the realm of construction and civil engineering.

KEYWORDS: Nanoscale, Nanoparticles, Nano-fibers, Nanotubes, Eco efficient concrete.

CATEGORY: Concrete Technology and Building Materials.