



### Dear Readers,

This edition covers sustainable construction material, economical design aspects, confined concrete responses, low-strength concrete, and high-performance concrete's durability aspects! Here is what the chosen six papers have to say.

Fiber-reinforced concrete is known for having high toughness, high tensile strength, and a shrinkage crack controller. Most of the fiber materials available in the market are expensive and not easily available. To address this issue, the authors investigated discarded coconut coir fibers (DCF) concrete focusing on the slump, bleeding, plastic shrinkage, and compressive strength. This concrete exhibited lower bleeding as well as the potential to mitigate plastic shrinkage cracking. The author's concluded that the optimum dosage of DCF is 0.1 %-0.4 % by concrete volume, which depends on the severity of the extreme ambient conditions for preventing plastic shrinkage<sup>[1]</sup>.

In the next article, the author highlights the importance of distributed imposed loads on developing economic design based on survey data of office and residential buildings<sup>[2]</sup>. The author critically assessed uniformly distributed imposed loads based on the Indian code and compared the code-recommended values with international building codes and standards. They found the possible reduction of imposed load on Indian standard codes to conceive an economical design approach.

In the following article, ground granulated blast furnace slag (GGBS) has partially replaced cement in the concrete. The concrete was cured in two different solutions containing common salt and sulfate salt to investigate microstructural bonding at the time of hydration. The outcomes demonstrate that GGBS increases the freshened and hardened performance in terms of workability and compressive strength<sup>[3]</sup>.

In the subsequent article, the authors investigated the angle of the shear failure plane of concrete-filled un-plasticized polyvinyl chloride tube (CFUT) columns with the help of the Mohr-Coulomb failure criterion. The article has covered different diameters of the tube and different grades of the concrete to understand the failure mechanism precisely. Eighteen specimens of CFUT have been tested under axial load. Author claim that shear failure is absent in the CFUT column due to extra confinement UPVC tubes<sup>[4]</sup>.

In the following article, the author extensively studied the sludge for developing controlled low-strength materials (CLSM). Three types of CLSM have developed using common effluent treatment plant (CEPT) waste with cement<sup>[5]</sup>. The outcome of

the results was promising and found that the flowability values were between 20-25 cm, and unconfined compressive strength was found 5.0 mPa in 28 days. Authors claim that the product is eco-friendly low-strength concrete that satisfies workability performance requirements, and it can be used in pavement bases or for permanent fills.

In the last article, the author's developed a high-performance hybrid fiber concrete using the ramie fibers and hooked-end steel fibers in various percentages of combinations, and silica fume and metakaolin have been included in the matrix as filler materials. Compared with conventional concrete, high-performance hybrid fiber concrete shows better durability performance in terms of water absorption, acid attack resistance, sorptivity action control, drying shrinkage control, sulfate attack resistance, and marine attack resistance. Authors claim that the overall performance of developed concrete shows high efficiency in different aspects of durability; therefore, the product could be implemented in the practical project to enhance the structure's life span<sup>[6]</sup>.

Hope this edition gives wide range of information on sustainable and eco-friendly materials to design in construction practice.

### REFERENCES

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