**Biomineralization technique in self-healing of fly-ash concrete**

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Lowercase the first letter of all title words.

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**Abstract.** The main aim of running this paper is to …….

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…. develop sustainable concrete.

**Keywords:** bacteria; bio-agent; sustainable fly ash concrete; self-healing; biomineralization; ….5-6 keywords

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Introduction

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Concrete is a strong and a low cost construction material [1]. However, concrete can easily be cracked and has a limited lifespan [1]. Concrete structures are often reinforced with steel. In order for the reinforcement to take over tensile forces, concrete has to crack [2]. Existence of cracks results in increase of pore size. As a result of this, water or any other aggressive substances such as CI– and water or any other elements may enter easily into cracks [3]. If these cracks developed further, these substances may reach the reinforcement [23].

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**Material and Methodology**: Font, Times New Roman; Size, 12; Style, Bold; Location, Center

Material and Methodology

Cement and sand

An ordinary Portland cement (Table 1) having fineness of 248 m2/kg and specific gravity of 3.15 was used throughout the experiment.

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Result and Discussions

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Conclusions

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References are given in the text by bracketed numbers [1], with a list of references at the end of the article in numerical order. Most books and articles are classified by subfield and uniquely identified in the Mathematical Reviews (MR) Database. This MR number can be included as the last item in each reference. The MR Database is searchable at http://www.ams.org/mrdatabase.

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**Table**

**Table 1.** Properties of cement and fly ash used.

|  |  |  |
| --- | --- | --- |
| Chemical compound | Fly ash | Cement |
| Al2O3 | 26.7 | 3.8 |
| Fe2O3 | 6.1 |  3.36 |
| CaO | 0.70 | 66 |
| MgO | 0.60 | 2.8 |
| LOI | 1.80 | <2 |
| K2O | 1.2 | 0.6 |
| Total Alkalis as Na2O | 0.93 |  0.28 |
| Chloride | 0.06 |  .011 |

When you insert figures and tables, please make them clear in color or black-white printing.

**Figure**



**Figure 1**: Font, Times New Roman; Size, 12; Style, Bold

**Figure 1.** Compressive strength of bioremediated fly ash specimens (days of curing). Error bar shows standard deviation.

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