

## عنوان مقاله:

(Combine Use of Fly Ash and Rice Husk Ash in Concrete to Improve its Properties (RESEARCH NOTE)

## محل انتشار:

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## خلاصه مقاله:

This research paper describes the study of combined effect of Fly Ash (FA) and Rice Husk Ash (RHA) on properties of concrete as partial replacement of Ordinary Portland Cement (OPC). These by-products are having high pozzolanic reactivity. In this research, the composition of mix was used with 10% RHA along with 10, 20 and 30% FA as partial replacement of cement. In this study, the compressive strength, workability, durability performance, and microstructure of concrete were examined. The microstructures of the concrete sample were analyzed by Scanning Electron Microscope (SEM) and elemental contents by Energy Dispersive X-ray (EDX). The test results showed that the highest compressive strength was achieved by 10%RHA and 20%FA used and beyond that, the strength was shown similar to control concrete mix (CM). The Ultrasonic Pulse Velocity (UPV) test result values were above the 4.5km/s; hence it may be considered as excellent concrete as per IS code for all mix. Response Surface Methodology (RSM) was adopted for optimizing experimental data. Regression equation was yielded by the application of RSM relating response variables to input parameters. This method aids in predicting the experimental results accurately with an acceptable range of error. This type of concrete mix is very effective in enhancing the mechanical and durability properties of concrete by saving cement and cost. It also makes concrete sustainable as it reduces environmental problems.

## کلمات کلیدی:

Rice Husk Ash, Fly ash, Concrete, Compressive strength, Workability, Durability

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/963128>

