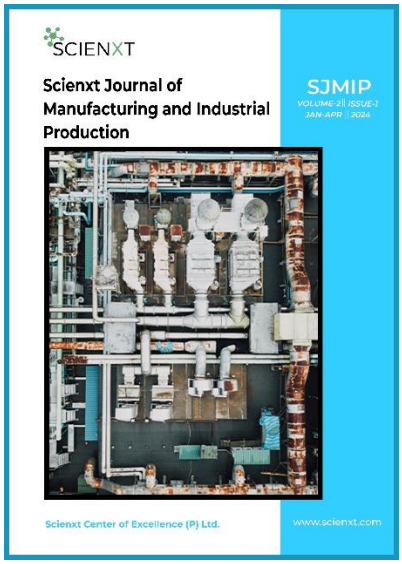

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Industrial waste materials used as ingredients in fly ash brick manufacturing

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Abstract:

Industrial waste like fly-ash which is creating environmental problems, is mainly used as a building material due to its low cost and easy availability. But the main disadvantage of these bricks is its low strength. So, a lot of research is going on to increase the strength of these bricks. The present research work is carried out to develop a new systematic procedure to produce fly ash composite bricks which will have higher compressive strength. Here the fly-ash is mixed with Cold setting resin at different proportions and water treated at different temperatures to find out a solution to the brick industry. The compressive strength, Hardness, water absorption, Density and thermal conductivity of the fly ash-resin powder bricks obtained under optimum test conditions are 11.24 MPa, 47.37HV, 19.09% 1.68 g/cm3, and 0.055 W/mK respectively. The sliding wear behavior is also investigated. The structure-property correlation of these composites are studied using X-ray diffraction, FTIR analysis and scanning electron microscopy