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Selection of water as porosity provider for green insulation material manufacturing

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Utilization of insulation materials is ever increasing recently in order to achieve energy efficiency in the building industry where significant losses occur in terms of energy savings in relation with rapid consumption of fossil resources recently. Although insulation materials provide significant value in terms of energy efficiency, negative effects exist while they are being manufactured, used and even after they are being used. Thus, along with the technical characteristics of the insulation materials, the negative effects of the materials used in their production should also be evaluated. Water can be used during the production of such materials to provide porosity to the material which is necessary to increase insulation capability. However, the content of the water itself is also important to be able to show the desired effect. The purpose of this study is to determine the most suitable water type among the existing sources. Choosing the best alternative amongst the others depend on various criteria. For the purpose of this research, seventeen different characteristics are determined as the criteria that consumers value the most in bottled drinking water. Therefore, a selection method that considers all these criteria in the selection process is required. In this paper, Analytic Hierarchy Method (AHP) is utilized on the decision of selecting the best water. In this study, the selected alternatives are investigated in detail. Based on the data obtained from General Directorate of State Hydraulic Works, the obtained results by this way are evaluated from various attributes by AHP.

Biography

Lutfu S Sua holds a PhD on Production and Operations Management from University of Mississippi. His research interests include mathematical modelling, renewable energy efficiency and system design.

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