

Technologies for Solar Energy Storage and Utilization Using Mixture of Molten Salts and Polymers

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Abstract : The research work focuses on exploring better technologies for solar energy storage. The research has the objective of substituting fossil fuels with renewable solar energy technology. This was the reason that motivated the research team to search for alternatives to develop an eco-friendly desalination process, which fully depends on the solar energy source. The Authors also investigated the potential of using different salt mixtures for better solar energy storage and better pure water productivity. Experiments were conducted to understand the impacts of solar energy collection and storage techniques on heat accumulation, heat storage capacity of various compositions of salt mixtures. Based on the experiments conducted, the economic and technical advantages of the integrated water desalination was assessed. Experiments also showed that the best salts with a higher storage efficiency of heat energy are NaCl, KNO₃, and MgCl₂·6H₂O and polymers such as Poly Propylene and Poly Ethylene Terephthalate.

Keywords : molten salts, desalination, solar energy storage and utilization, polymers

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