# Baghdad energy storage for demand response

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Dr. Jasim M. Mahdi holds a PhD in engineering science from Southern Illinois University. He has published over 90 research articles in leading international journals and conferences, and his work has been highly cited by researchers in his field. His research focuses mainly on designing, developing, and analyzing new methods and materials for thermal energy storage and thermal management to improve the performance of renewable energy systems. In addition to his research activities, Dr. Mahdi has also been involved in teaching and supervising undergraduate and graduate students in the Department of Energy Engineering, where he is currently an assistant professor.

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Highly Cited Paper Award (2022)Awarded by Elsevier/ Applied Energy (ISSN: 0306-2619)https://

World"s top 2% scientists (2022)September 2022 data-update for "Updated science-wide author databases of standardized citation indicators.https://elsevier.digitalcommonsdata /datasets/btchxktzyw/4

World"s top 2% scientists (2021)August 2021 data-update for "Updated science-wide author databases of standardized citation indicators.https://elsevier.digitalcommonsdata /datasets/btchxktzyw/3

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Mechanical Engineering and Energy Processes

i. Supervised M.Sc. thesis student (graduated): AlRubaiee, J.F "Desalination of agricultural wastewater by solar adsorption system", 2021

ii. Supervised M.Sc. thesis student (graduated): Namok, S.A. "Energetic performance enhancement of the PCM-based photovoltaic thermal system", since 2022.

This study numerically intends to evaluate the effects of arc-shaped fins on the melting capability of a triplex-tube confinement system filled with phase-change materials (PCMs). In contrast to situations with no fins, where PCM exhibits relatively poor heat response, in this study, the thermal performance is modified using novel arc-shaped fins with various circular angles and orientations compared with traditional rectangular fins. Several inline and staggered layouts are also assessed to maximize the fin’s efficacy. The effect of the nearby natural convection is further investigated by adding a fin to the bottom of the heat-storage domain. Additionally, the Reynolds number and temperature of the heat-transfer fluid (HTF) are e

This article deals with the impact of including transverse ribs within the absorber tube of the concentrated linear Fresnel collector (CLFRC) system with a secondary compound parabolic collector (CPC) on thermal and flow performance coefficients. The enhancement rates of heat transfer due to varying governing parameters were compared and analyzed parametrically at Reynolds numbers in the range 5,000–13,000, employing water as the heat transfer fluid. Simulations were performed to solve the governing equations using the finite volume method (FVM) under various boundary conditions. For all Reynolds numbers, the average Nusselt number in the circular tube in the CLFRC system with ribs was found to be larger than that of the plain abs