

100 words

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Topic title: Flow and Heat Transfer in Packed Beds of Rock

This study investigated the anisotropic pressure drop through a packed bed of crushed rock particles for thermal energy storage at concentrating solar power plants. A porous media technique was utilized to derive a correlation that can predict the pressure drop across a rock bed. A numerical model was developed using the DEM-CFD method, and the findings were validated with data from the developed experimental test. Examining the flow behaviour yielded a correlation for pressure drop that is sensitive to flow direction and can be used for the design and evaluation of thermal energy storage systems.