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Design and optimization of regenerators of a rotary magnetic refrigeration device using a detailed simulation model

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Highlights

- 3D model of parasitic heat transfer is inserted in 1D model of active regeneration
- Validated model of magnetic refrigeration is used for optimization of regenerators
- High pressure drop can limit the benefits of giant magnetocaloric effect
- Effect of epoxy-binding refrigerant particles on the performance is investigated
- Thermal resistivity of epoxy cannot always be ignored despite its low mass

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