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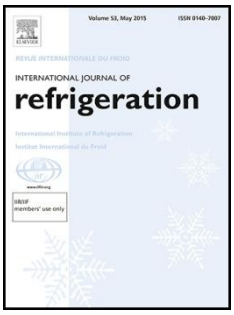

Title: Experimental investigation on the performance of a novel single-driving integrated pump and compressor system for electronic cooling

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Experimental investigation on the performance of a novel single-driving integrated pump and compressor system for electronic cooling

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Highlights

- A single-driving integrated pump and compressor electronic cooling system was proposed.
- Steady cooling performances of the two individual cooling modes were studied.
- Cooling results of the integrated system and the two individual modes were compared.
- Energy ratios of the two individual models under different air temperature were analysed.
- Dynamic cooling performances of the integrated cooling system were investigated.

Abstract: In this paper, a novel single-driving integrated pump and compressor system was developed to tackle the electronic cooling problem under a large range of ambient temperatures and heat loads. An experimental set-up was developed for this purpose. Experiments were conducted to evaluate the system performance under stable working conditions and investigate dynamic performance when the system was switched between liquid and vapor cooling modes. The results showed that liquid cooling mode had a large