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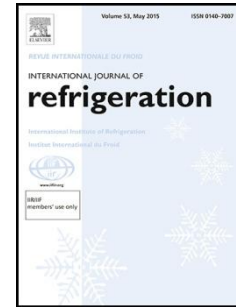
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A comparison of refrigerants in a two-stage ejector-expansion transcritical refrigeration cycle based on exergoeconomic and environmental analysis

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Highlights

- A comprehensive energy, exergy and exergoeconomic comparison is carried out.
- Carbon dioxide, ethane and nitrous oxide are selected as system refrigerants.
- The COP of system is maximized subject to the gas cooler and inter-stage pressures.
- Results **indicate** best refrigerant from thermodynamic and economic viewpoints.

Abstract

A comprehensive energy, exergy, exergoeconomic and environmental comparison between carbon dioxide, ethane and nitrous oxide as the refrigerants of a two-stage ejector-expansion transcritical refrigeration cycle is carried out. All of the obtained results are attained by

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