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Modelling and measurement of a moving coil oil-free linear compressor performance for refrigeration application using R134a

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## Highlights

- A novel oil-free linear compressor using Rulon material is developed.
- Moving coil linear compressor for refrigeration application with R134a is tested.
- Comparison of Mathematical model and experimental results shows close agreement.
- Evaporator temperature was -20 to 2°C for different piston strokes and pressure ratios.
- System COP with linear compressor is 18.6 % more than the reciprocating compressor.

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