

Title Performance of heat pump system with low-GWP refrigerants

Speaker Prof. Keumnam Cho
Professor, School of Mechanical Engineering,
Sungkyunkwan University
Korea



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Abstract

Performance of heat pump system using R-410A, R-32 and an HFO blend (R-446A) was tested. When compared to the optimal refrigerant charge of the R-410A system, that for the R-32 system was 20% lower and that for the R-446A system was 10% lower. The EER of the R-32 and R-446A systems at the same capacity under a full load were 104–110% and 97–98% that of the R-410A system, respectively. The compressor input powers in the SEER and SCOP conditions relative to those of the R-410A system were lower by a maximum of 9% and 7% for the R-32 system and higher by a maximum of 9% and 4% for the R-446A system. The overall SEER and SCOP values relative to those of the R-410A system were higher by 8% for the R-32 system and 1% for the R-446A system.

About the Speaker

Research field: refrigeration, heat exchanger, two phase flow
Education: PhD(SUNY, 1989), MS(SUNY, 1986), BS(SNU, 1980)
Professional career: 1993 – present Professor, SKKU(Sungkyunkwan Univ)
2007 – present Editor, IJR(Int. J. Refrigeration)
2008 – present Editor-in-chief, KRAIA
2002 – 2014 Director/Vice-President, SAREK
2003 – 2007 Director, SFARC
2008 – 2015 Vice-president, IIR E1 Commission

Host: Professor Bidyut Saha

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Contact: Research Support and International Affairs division
International Institute for Carbon-Neutral Energy Research
Tel:092-802-6934 Email:wpikenkyu@jimu.kyushu-u.ac.jp

