

Evaluation of Advanced Architectures for Commercial Refrigeration Systems Using Low Global Warming Potential Refrigerants

Authors : Fabrizio Codella, Chris Parker, Samer Saab

Abstract : The Kigali Amendment is driving the adoption of low Global Warming Potential refrigerants in commercial refrigeration systems in over a hundred countries. Several refrigeration systems for the small and large retail stores at mild and hot ambient temperature climates have been compared for hydrofluorocarbons (HFC), hydrofluoroolefins (HFO), transcritical CO₂ and propane, in typical and advanced system architectures. The results of system performance, emissions and lifetime cost have been compared. The greatest benefits were found to be obtained by low global warming potential HFO advanced systems.

Keywords : commercial refrigeration, CO₂, emissions, HFO, lifetime cost, performance

Conference Title : ICHVACRS 2022 : International Conference on Heating, Ventilating, Air Conditioning and Refrigeration Systems

Conference Location : Auckland, New Zealand

Conference Dates : December 02-03, 2022