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Bio

Miriam Solana Ciprés holds a PhD of Chemical Engineering from the University of Padua, authoring several technical publications about supercritical CO_2 technologies, with studies and research periods in different universities of Italy and Spain as well as in the USDA in United States.
Currently, she works in the HVAC/R Knowledge Center of CAREL headquarters, whose objective is to strengthen the specific technical competencies inside the Group through training programs and lobby activities among the most influencing associations worldwide.
During the last two years, she has focused her activities in the study of refrigerants and energy efficiency regulations, with diffusion of the information through seminars, conferences, white papers and the corporate blog.

Abstract

Energy Saving Technologies for Alternative Refrigerant-Based Systems

The transition to low global warming potential (GWP) refrigerants dictated by Kigali agreement along with the evolution of technology and new energy efficiency requirements are driving big changes in the market. The use of components such as electronic expansion valves and variable speed compressors together with efficient control and supervisory systems allow to achieve great results in terms of energy efficiency, through modulation according to the cooling or heating demand of the system, for any type of refrigerant. The case of R-744 (CO2) and the necessity of using specific designs and components such as ejector in warm climates, deserves special attention. This presentation will give an overview of the current scenario on refrigeration sector, with a focus on the technologies that allow to face the challenges dictated by the request of much lower GWP refrigerants with lower energy consumption. Eventually, some application examples with low GWP refrigerants and the use of energy saving technologies for commercial refrigeration will be presented.