HVAC&R Research (2014) **20**, 721

ISSN: 1078-9669 print / 1938-5587 online
DOI: 10.1080/10789669.2014.954948

Taylor & Francis
Taylor & Francis Group

Editorial

First International Conference on Energy and Indoor Environment for Hot Climates

Passive cooling strategies, such as nighttime cooling or wind-driven ventilation, provide opportunities for building energy savings, if the mechanical system operation is appropriately integrated with the building architecture. The articles in this section provide successful examples of such integration in several different locations with hot climatic conditions. Additionally, the building-occupant-preferred thermal conditions allow for increased indoor temperature settings. When all of these strategies of mechanical and architectural design are combined with the understanding of occupant preferences, the buildings in hot climates can be much more energy efficient. This section also offers insights into a couple of technological advancements for the chillers, including fault detection/diagnostics and fin design. Finally, a group of articles addresses particle deposition, its sources, and its influence on aircraft cabin design. These studies address the risk reduction of a potential airborne microbe transmission that could promote the spread of communicable diseases. Overall, the integration of different indoor space layouts and mechanical system performance can be addressed as an optimization problem with specific objective functions for the desired system performance. This optimization can be done numerically or experimentally for specific case studies as presented in the articles of this section.

Jelena Srebric, PhD
Member ASHRAE
Professor
Mechanical Engineering Department
University of Maryland
College Park, MD, USA