

CONTENTS

- 139 Experimental investigation of free cooling using phase change material-filled air heat exchanger for energy efficiency in buildings
Thambidurai Muthuvelan, Karthik Panchabikesan, Rajagopal Munisamy, Krishna Mohan Nibhanupudi and Velraj Ramalingam
- 150 Thermal performance and structural cooling analysis of brick, cement block, and mud concrete block
Chameera Udawattha and Rangika Halwatura
- 164 Performance improvement of turbo ventilators with internal blades
P. M. Ghanegaonkar, Ganesh K. Jadhav and Sharad Garg
- 178 Performance study of building integrated photovoltaic modules
A. Karthick, K. Kalidasa Murugavel, L. Kalaivani and U. Saravana Babu
- 195 Co-simulation of fuzzy control in buildings and the HVAC system using BCVTB
Christina Anastasiadi and Anastasios I. Dounis
- 217 Improving office building energy-efficiency ratings using a smart-engineering-computer-simulation approach: an Australian case study
Steve Burroughs
- 235 Numerical research on the operation characteristics of marine variable air volume air conditioning system
Zhongchao Zhao, Jiaojiao Zhang, Hua Cheng and Rendong Shen
- 250 Indoor contaminant source identification by inverse zonal method: Levenberg-Marquardt and conjugate gradient methods
Aziz Azimi and Ehsan Daneshgar
- 274 Corridor lighting retrofit based on occupancy and daylight sensors: implementation and energy savings compared to LED lighting
Stavros Akrasakis and Antonios G. Tsikalakis
- 289 Analysis of the influence of different variables on the impacts related with the envelope of buildings for residential use, with estimation of the interaction of the user
Patricia Huedo, Belinda López-Mesa and Elena Mulet

1. Introduction

Efficient and economical technologies that can be used to store large amounts of heat or cold in a definite volume have been the subject of research for a long time. Thermal energy storage systems provide the potential to achieve energy savings, which in turn reduce the environmental impact related to energy use. Latent heat storage (LHS) is relatively a new area of study, receiving much attention during recent years for load levelling in power generation, building energy conservation and air-conditioning applications. The LHS system absorbs or releases the heat at a certain (almost constant) temperature with high transition of heat and makes it possible to store and release a large amount of