

1. Record Nr.	UNINA9910373956803321
Autore	Durakovi Benjamin
Titolo	PCM-Based Building Envelope Systems : Innovative Energy Solutions for Passive Design // by Benjamin Durakovi
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2020
ISBN	3-030-38335-0
Edizione	[1st ed. 2020.]
Descrizione fisica	1 online resource (XVII, 190 p. 112 illus., 98 illus. in color.)
Collana	Green Energy and Technology, , 1865-3529
Disciplina	696
Soggetti	Sustainable architecture Thermodynamics Heat engineering Heat - Transmission Mass transfer Building construction Building materials Renewable energy resources Sustainable Architecture/Green Buildings Engineering Thermodynamics, Heat and Mass Transfer Building Physics, HVAC Building Materials Renewable and Green Energy
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Introduction -- Phase change materials for building envelope systems -- Passive solar heating/cooling strategies with PCM -- PCMs integrated into the building structure -- PCM-integrated glazing systems and components -- PCMs in separate heat and cold storage devices -- Heat storage and transfer mechanisms in PCM-based building envelope systems -- PCM-based building envelope system modeling and simulation -- Conclusion.
Sommario/riassunto	PCM Enhanced Building Envelopes presents the latest research in the field of thermal energy storage technologies that can be applied to

solar heating and cooling with the aim of shifting and reducing building energy demand. It discusses both practical and technical issues, as well as the advantages of using common phase change materials (PCMs) in buildings as a more efficient, novel solution for passive solar heating/cooling strategies. The book includes qualitative and quantitative descriptions of the science, technology and practices of PCM-based building envelopes, and reflects recent trends by placing emphasis on energy storage solutions within building walls, floors, ceilings, façades, windows, and shading devices. With the aim of assessing buildings' energy performance, the book provides advanced modeling and simulation tools as a theoretical basis for the analysis of PCM-based building envelopes in terms of heat storage and transfer. This book will be of interest to all those dealing with building energy analysis such as researchers, academics, students and professionals in the fields of mechanical and civil engineering and architectural design.

---