1. Record Nr. UNINA9910823354203321 Eco-efficient materials for mitigating building cooling needs: design, Titolo properties and applications // edited by F. Pacheco-Torgal [and three others]; contributors N. L. Alchapar [and thirty six others] Amsterdam, [Netherlands]:,: Woodhead Publishing,, 2015 Pubbl/distr/stampa ©2015 **ISBN** 1-78242-401-6 1-78242-380-X Descrizione fisica 1 online resource (552 p.) Collana Woodhead Publishing Series in Civil and Structural Engineering;; Number 56 Disciplina 691.0286 Soggetti Building materials - Environmental aspects Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Note generali Description based upon print version of record. Includes bibliographical references at the end of each chapters and Nota di bibliografia index. Nota di contenuto Front Cover: Eco-efficient Materials for Mitigating Building Cooling Needs: Design, Properties and Applications; Copyright; Contents; List of contributors; Woodhead Publishing Series in Civil and Structural Engineering: Foreword: Chapter 1: Introduction to eco-efficient materials to mitigate building cooling needs; 1.1. Climate change and urban heat islands (UHIs); 1.2. Adaptation to climate change and mitigation of UHI effects and of building cooling needs; 1.3. Outline of the book; References; Part One: Pavements for mitigating urban heat island effects Chapter 2: Coating materials to increase pavement surface reflectance2.1. Introduction; 2.2. Organic polymers used as coating overlay materials for pavements; 2.2.1. Epoxy resins; 2.2.2. Acrylic ester polymers; 2.2.3. Advantages and disadvantages of various polymers; 2.3. Inorganic materials used as polymer fillers to increase reflectance; 2.3.1. White color materials for increasing visible light reflectance; 2.3.2. Various color materials for increasing NIR reflectance; 2.4. Aggregate materials with high reflectance; 2.5. Future

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## Sommario/riassunto

Climate change is one of the most important environmental problems faced by Planet Earth. The majority of CO2 emissions come from burning fossil fuels for energy production and improvements in energy efficiency shows the greatest potential for any single strategy to abate global greenhouse gas (GHG) emissions from the energy sector. Energy related emissions account for almost 80% of the EU's total greenhouse gas emissions. The building sector is the largest energy user responsible for about 40% of the EU's total final energy consumption. In Europe the number of installed air conditioning sys