Record Nr. UNINA9910298585403321 Autore Samantara Aneeya K Titolo Materials Development for Active/Passive Components of a Supercapacitor: Background, Present Status and Future Perspective // by Aneeya K. Samantara, Satyajit Ratha Singapore:,: Springer Singapore:,: Imprint: Springer,, 2018 Pubbl/distr/stampa **ISBN** 981-10-7263-9 Edizione [1st ed. 2018.] Descrizione fisica 1 online resource (XI, 48 p. 11 illus.) Collana SpringerBriefs in Materials, , 2192-1091 Disciplina 621.315 Soggetti Materials science Force and energy Electrochemistry Energy storage **Energy Materials Energy Storage** Characterization and Evaluation of Materials Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Nota di bibliografia Includes bibliographical references at the end of each chapters. Nota di contenuto Chapter 1. Introduction -- Chapter 2. Historical background and present status of the Supercapacitors -- Chapter 3. Components of Supercapacitor -- Chapter 4. Asymmetric and Hybrid Supercapacitor --Chapter 5. Trend and scope beyond traditional supercapacitors --Chapter 6. References. This brief deals with various forms of supercapacitors starting from Sommario/riassunto traditional carbon based supercapacitors to advanced next generation hybrid supercapacitors. The primary focus is to investigate the successive evolution in the core components of a typical supercapacitor which will bring significant observations regarding their feasibility and overall impact on the charge storage capacity so as to reach at par with the current battery technology. The authors present a critical review of the current collectors, electrode materials and electrolytic components

which have distinctive impact on both the power and energy density of

a supercapacitor. Emerging trends in the fabrication of hybrid supercapacitor technology bring together the exceptional power

density of a double layer capacitor and energy density of a rechargeable battery, which promises a brighter future for the electrical energy storage system.