

1. Record Nr.	UNINA9910299819103321
Autore	Xiong Guoping
Titolo	Thermal Effects in Supercapacitors // by Guoping Xiong, Arpan Kundu, Timothy S. Fisher
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2015
ISBN	3-319-20242-1
Edizione	[1st ed. 2015.]
Descrizione fisica	1 online resource (154 p.)
Collana	SpringerBriefs in Thermal Engineering and Applied Science, , 2193-2530
Disciplina	621.315
Soggetti	Energy storage Thermodynamics Heat engineering Heat transfer Mass transfer Electronic circuits Energy Storage Engineering Thermodynamics, Heat and Mass Transfer Circuits and Systems
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index at the end of each chapters.
Nota di contenuto	Thermal Management in Electrochemical Energy Storage Systems -- Thermal Considerations for Supercapacitors -- Influence of Temperature on Electrolytes -- Capacitance and ESR -- Thermal Modeling of Supercapacitors -- Summary and Outlook -- Appendix A: Definition of Selected Acronyms.
Sommario/riassunto	This Brief reviews contemporary research conducted in university and industry laboratories on thermal management in electrochemical energy storage systems (capacitors and batteries) that have been widely used as power sources in many practical applications, such as automobiles, hybrid transport, renewable energy installations, power backup and electronic devices. Placing a particular emphasis on supercapacitors, the authors discuss how supercapacitors, or ultra

capacitors, are complementing and replacing, batteries because of their faster power delivery, longer life cycle and higher coulombic efficiency, while providing higher energy density than conventional electrolytic capacitors. Recent advances in both macro- and micro capacitor technologies are covered. The work facilitates systematic understanding of thermal transport in such devices that can help develop better power management systems.
