

1. Record Nr.	UNINA9910770263103321
Autore	Kong Biao
Titolo	Functional Mesoporous Carbon-Based Film Devices for Energy Systems // by Biao Kong, Hongbin Xu, Lei Xie, Shan Zhou
Pubbl/distr/stampa	Singapore : , : Springer Nature Singapore : , : Imprint : Springer, , 2024
ISBN	9789819974986 9819974984
Edizione	[1st ed. 2024.]
Descrizione fisica	1 online resource (296 pages)
Altri autori (Persone)	XuHongbin XieLei ZhouShan
Disciplina	620.11 621.31242
Soggetti	Electric batteries Materials Catalysis Force and energy Materials science Chemical engineering Mechanical engineering Batteries Materials for Energy and Catalysis Materials Science Chemical Engineering Mechanical Engineering
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Introduction of energy materials -- Mesoporous materials -- Synthesis methods of mesoporous carbon-based materials -- Film functional materials -- Interfacial Assemblies for film devices -- Applications for energy storage -- Applications for catalysis.
Sommario/riassunto	This book introduces the synthesis of functional mesoporous carbon-based films and their applications in energy systems. In the last

decades, the consumption of fossil fuels has led to many problems such as the energy crisis and climate change. The rapidly increasing energy demands and environmental issues have attracted lots of attention to develop new functional materials for sustainable energy technology. Mesoporous carbon-based films show unique properties and have been regarded as a promising material applied in highly efficient energy storage and conversion systems. Interfacial assembly strategies are usually employed to construct such film devices. In this book, recent developments in synthesis of mesoporous carbon-based film devices through interfacial assembly strategies are illustrated. Additionally, the applications of mesoporous carbon-based film devices for electrochemical energy systems including batteries and electrocatalysis are introduced to demonstrate their potential, as well as describing the mechanisms to enhance the performance of these systems. Finally, some challenges and future outlooks are presented to inspire better development and contributions to this field in coming years. Given its scope, this book appeals to undergraduate students, graduate students, engineers, and researchers involved in related fields.
