1. Record Nr. UNINA9910874658403321 Autore Crapnell Robert D Titolo The Handbook of Graphene Electrochemistry / / by Robert D. Crapnell, Craig E. Banks London:,: Springer London:,: Imprint: Springer,, 2024 Pubbl/distr/stampa **ISBN** 9781447175360 Edizione [2nd ed. 2024.] 1 online resource (221 pages) Descrizione fisica Altri autori (Persone) BanksCraig E Disciplina 541.37 Soggetti Electrochemistry Optical materials Energy storage **Electronics Optical Materials** Mechanical and Thermal Energy Storage Electronics and Microelectronics, Instrumentation Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia 1. Introduction to graphene -- 2. Interpreting electrochemistry -- 3 Nota di contenuto The electrochemistry of graphene -- 4 Graphene applications -- 5. Graphene Additive Manufacturing -- Appendix. This book charts the history of graphene, depicting how it has made an Sommario/riassunto impact in the field of electrochemistry and how scientists are trying to unravel its unique properties. Graphene has grasped the attention of academia and industry worldwide due its unique structure and reported advantageous properties. This was reflected via the 2010 Nobel Prize in Physics being awarded for groundbreaking experiments regarding the two-dimensional material graphene. One particular area in which graphene has been extensively explored is electrochemistry where it is potentially the world's thinnest electrode material. Graphene has been widely reported to perform beneficially over existing electrode materials when used within energy production or storage devices and when utilized to fabricate electrochemical sensors. A fundamental

introduction into Graphene Electrochemistry is given, through which readers can acquire the tools required to effectively explain and

interpret the vast array of graphene literature. The readers are provided with the appropriate insights required to be able to design and implement electrochemical experiments when utilizing graphene as an electrode material. This new, updated and extended second edition also explores other 2D materials and covers a chapter on the use of graphene in additive manufacturing.