1. Record Nr. UNINA9910983039603321 Autore Singh Abhay Kumar Titolo 2D Transition-Metal Dichalcogenides (TMDs): Fundamentals and Application / / by Abhay Kumar Singh Singapore:,: Springer Nature Singapore:,: Imprint: Springer,, 2025 Pubbl/distr/stampa 9789819602476 **ISBN** 9789819602469 Edizione [1st ed. 2025.] Descrizione fisica 1 online resource (862 pages) Collana Materials Horizons: From Nature to Nanomaterials, , 2524-5392 Disciplina 530.41 620.19 Soggetti Condensed matter Materials Materials - Analysis Optical materials **Building materials Biomaterials** Two-dimensional Materials Materials for Devices Materials Characterization Technique **Optical Materials** Structural Materials **Biomedical Materials** Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Nota di contenuto 1. Basics of TMDs -- 2. Fabrication approaches of TMDs -- 3. Structures and defects of TMDs -- 4. 2D TMDs properties -- 5. Spin-Valley coupling in TMDs -- 5. Heterostructures. This book offers to reader a sound understating of two-dimensional Sommario/riassunto Transition-Metal Dichalcogenides (2D TMDs) materials, detailing their physio-chemical mechanisms and technological applications in various areas such as nanoelectronics and optoelectronics. Moving from their

invention to their modern developments, including theoretical approaches, experimental interpretations and their technical

applications, the book explores the basic concepts of 2D TMDs. It will be of interest to undergraduate and postgraduate students, researchers and scientists working in the area of 2D TMDs. A key goal of this book provides a sound or clear idea about two-dimensional Transition-Metal Dichalcogenides (2D TMDs) materials by providing their sound background, fabrication approaches including interpretations of the inside physio-chemical mechanism including technological applications in various significant areas such as nanoelectronics, optoelectronics, topological insulators, biomedical.