1. Record Nr. UNINA9910616385303321

| | |
|---|---|
| Autore | Weston Astrid |
| Titolo | Atomic and electronic properties of 2D moire interfaces / / Astrid Weston |
| Pubbl/distr/stampa | Cham, Switzerland : , : Springer, , [2022]<br>©2022 |
| ISBN | 9783031120930<br>9783031120923 |
| Descrizione fisica | 1 online resource (148 pages) |
| Collana | Springer Theses |
| Disciplina | 181.07 |
| Soggetti | Atomic theory<br>Superlattices as materials |
| Lingua di pubblicazione | Inglese |
| Formato | Materiale a stampa |
| Livello bibliografico | Monografia |
| Nota di contenuto | Intro -- Supervisor's Foreword -- Abstract -- Acknowledgements -- Contents -- Abbreviations -- 1 Thesis Outline -- References -- 2 Introduction to 2-Dimensional Materials and Moiré Superlattices -- 2.1 2-Dimensional Materials -- 2.1.1 Graphene -- 2.1.2 Hexagonal Boron Nitride -- 2.1.3 Transition Metal Dichalcogenides -- 2.2 Moiré Superlattices -- 2.2.1 Graphene and Hexagonal Boron Nitride -- 2.2.2 Twisted Bilayer Graphene -- 2.2.3 Twisted Bilayer TMDs -- 2.3 Summary -- References -- 3 Fabrication Techniques -- 3.1 Introduction -- 3.2 Mechanical Exfoliation and Crystal Identification -- 3.3 PMMA Dry Transfer Technique -- 3.4 Fabrication of Twisted Bilayer Heterotructures -- 3.5 Contamination and Air-Sensitivity in vdWs Heterostructures -- 3.6 Fabrication of Electrical Contacts -- 3.6.1 Shadow Mask Contacts -- 3.6.2 Electron Beam Lithography Contacts -- 3.6.3 Electron Beam Metal Deposition -- 3.7 Summary -- References -- 4 Characterisation Techniques -- 4.1 Scanning Probe Microscopy -- 4.1.1 Contact Mode -- 4.1.2 Tapping Mode -- 4.1.3 Electrical SPM Modes -- 4.1.4 AFM Image Processing -- 4.2 Electron Microscopy -- 4.2.1 Principles of Electron-Matter Interaction -- 4.2.2 Scanning Electron Microscopy -- 4.2.3 SEM Image Processing -- 4.2.4 Scanning Transmission Electron Microscopy -- 4.2.5 Atomic Resolution STEM Image Processing -- 4.2.6 Electron Beam Induced Effects -- 4.3 |