

| | |
|-------------------------|--|
| 1. Record Nr. | UNINA9910789087703321 |
| Autore | Bormashenko Edward A |
| Titolo | Wetting of real surfaces [[electronic resource] /] / by Edward Yu. Bormashenko |
| Pubbl/distr/stampa | Berlin ; ; New York, : De Gruyter, 2013 |
| ISBN | 1-68015-206-8 3-11-025879-X |
| Descrizione fisica | 1 online resource (188 p.) |
| Collana | De Gruyter Studies in Mathematical Physics ; ; 19 |
| Disciplina | 530.4/27 |
| Soggetti | Surface tension Wetting Solid-liquid interfaces Hysteresis |
| 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. |
| Nota di contenuto | Front matter -- Preface -- Notation -- Contents -- Chapter 1: What is surface tension? -- Chapter 2: Wetting of ideal surfaces -- Chapter 3: Contact angle hysteresis -- Chapter 4: Dynamics of wetting -- Chapter 5: Wetting of rough and chemically heterogeneous surfaces: the Wenzel and Cassie models -- Chapter 6: Superhydrophobicity, superhydrophilicity, and the rose petal effect -- Chapter 7: Wetting transitions on rough surfaces -- Chapter 8: Electrowetting and wetting in the presence of external fields -- Chapter 9: Nonstick droplets -- Index |
| Sommario/riassunto | The revealing of the phenomenon of superhydrophobicity (the "lotus-effect") has stimulated an interest in wetting of real (rough and chemically heterogeneous) surfaces. In spite of the fact that wetting has been exposed to intensive research for more than 200 years, there still is a broad field open for theoretical and experimental research, including recently revealed superhydrophobic, superoleophobic and superhydrophilic surfaces, so-called liquid marbles, wetting transitions, etc. This book integrates all these aspects within a general framework of wetting of real surfaces, where physical and chemical heterogeneity is essential. Wetting of rough/heterogeneous surfaces is discussed |

through the use of the variational approach developed recently by the author. It allows natural and elegant grounding of main equations describing wetting of solid surfaces, i.e. Young, Wenzel and Cassie-Baxter equations. The problems of superhydrophobicity, wetting transitions and contact angle hysteresis are discussed in much detail, in view of novel models and new experimental data.
