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Nota di contenuto	Frontmatter -- Preface -- Contents -- Symbol index -- 1. What is surface tension? -- 2. Wetting of surfaces: the contact angle -- 3. Surface tension-assisted floating of heavy and light objects and walking of water striders -- 4. Capillary interactions between particles. Particles placed on liquid surfaces. Elasticity of liquid surfaces, covered by colloidal particles -- 5. Capillary waves -- 6. Oscillation of droplets -- 7. Marangoni flow and surface instabilities -- 8. Evaporation of droplets. The Kelvin and the coffee-stain effects -- 9. Condensation, growth and coalescence of droplets and the breath-figure self-assembly -- 10. Dynamics of wetting: bouncing, spreading and rolling of droplets (water hammer effect - water entry and drag-out problems) -- 11. Superhydrophobicity and superoleophobicity: the Wenzel and Cassie wetting regimes -- 12. The Leidenfrost effect. Liquid marbles: self-propulsion -- 13. Physics, geometry, life and death of soap films and bubbles -- Index
Sommario/riassunto	Motivated by a plethora of phenomena from nature, this textbook introduces into the physics of wetting of surfaces. After a brief

discussion of the foundations of surface tension, its implementation for floating objects, capillary waves, bouncing droplets, walking of water striders, etc. is discussed. Furthermore, Marangoni flows, surface tension inspired instabilities, condensation and evaporation of droplets, liquid marbles, superhydrophobicity and superoleophobicity (lotus effect) are introduced. All relevant concepts are illustrated by the numerous qualitative and quantitative exercises. ContentsWhat is surface tension?Wetting of surfaces: the contact angleSurface tension-assisted floating of heavy and light objects and walking of water stridersCapillary interactions between particles. Particles placed on liquid surfaces. Elasticity of liquid surfaces, covered by colloidal particlesCapillary wavesOscillation of dropletsMarangoni flow and surface instabilitiesEvaporation of droplets. The Kelvin and the coffee-stain effectsCondensation, growth and coalescence of droplets and the breath-figure self-assemblyDynamics of wetting: bouncing, spreading and rolling of droplets (water hammer effect - water entry and drag-out problems)Superhydrophobicity and superoleophobicity: the Wenzel and Cassie wetting regimesThe Leidenfrost effect. Liquid marbles: self-propulsionPhysics, geometry, life and death of soap films and bubbles