1. Record Nr. UNINA9910366599203321 Autore Saha Sujoy Kumar Titolo Two-Phase Heat Transfer Enhancement / / by Sujoy Kumar Saha, Hrishiraj Ranjan, Madhu Sruthi Emani, Anand Kumar Bharti Pubbl/distr/stampa Cham:,: Springer International Publishing:,: Imprint: Springer,, 2020 **ISBN** 3-030-20755-2 Edizione [1st ed. 2020.] Descrizione fisica 1 online resource (124 pages) Collana SpringerBriefs in Thermal Engineering and Applied Science, , 2193-2549 Disciplina 621.4022 Soggetti Thermodynamics Heat engineering Heat - Transmission Mass transfer Fluid mechanics Materials - Analysis Engineering Thermodynamics, Heat and Mass Transfer **Engineering Fluid Dynamics** Characterization and Analytical Technique Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Nota di contenuto Chapter 1. Introduction -- Chapter 2. Pool Boiling Enhancement Techniques -- Chapter 3. Flow Boiling -- Chapter 4. Condensation --Chapter 5. Convective Condensation -- Chapter 6. Conclusions. Sommario/riassunto This Brief concerns heat transfer and pressure drop in heat transfer enhancement for boiling and condensation. The authors divide their topic into six areas: abrasive treatment and coatings, combined structured and porous surfaces, basic principles of boiling mechanism, vapor space condensation, convective vaporization, and forced condensation inside tubes. Within this framework, the book examines range of specific phenomena including abrasive treatment, open grooves, 3D cavities, etched surfaces, electroplating, pierced 3D cover

sheets, attached wire and screen promoters, non-wetting coatings, oxide and ceramic coatings, porous surfaces, structured surfaces

(integral roughness), combined structured and porous surfaces, composite surfaces, single-tube pool boiling tests, theoretical fundamentals like liquid superheat, effect of cavity shape and contact angle on superheat, entrapment of vapor in cavities, nucleation at a surface cavity, effect of dissolved gases, bubble departure diameter, bubble dynamics, boiling hysteresis and orientation effects, basic principles of boiling mechanism, visualization and mechanism of boiling in subsurface tunnels, and Chien and Webb parametric boiling studies.