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Nota di contenuto	Microsystem Engineering of Lab-on-a-chip Devices; Contents; Preface; 1 Introduction; 1.1 Learning from the Experiences of Microelectronics; 1.2 The Advantages of Miniaturizing Systems for Chemical Analysis; 1.3 From Concept to TAS; 1.4 References; 2 Clean Rooms; 3 Microfluidics - Theoretical Aspects; 3.1 Fluids and Flows; 3.2 Transport Processes; 3.2.1 Types of Transport; 3.2.1.1 Convection; 3.2.1.2 Migration; 3.2.1.3 Diffusion; 3.2.1.4 Dispersion; 3.3 System Design; 3.3.1 Laminar Flow and Diffusion in Action; 3.4 An Application: Biological Fluids; 3.5 References 4 Microfluidics - Components4.1 Valves and Pumps; 4.1.1 Moving Liquids by Electroosmosis; 4.1.2 Mixers; 4.2 Injecting, Dosing, and Metering; 4.3 Temperature Measurement in Microfluidic Systems; 4.3.1 Microreactors; 4.3.2 Temperature Sensors for Microsystems; 4.3.3 Resistance Temperature Detectors; 4.3.3.1 Metals; 4.3.3.2 Nonmetals;

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## Sommario/riassunto

Written on a non-specialist level by an interdisciplinary team of chemists, biologists and engineers from one of Europe's leading centres for microsystem research, the Danish Mikroelektronik Centret (MIC), this is a concise practical introduction to the subject. As such, the book is the first to focus on analytical applications, providing life and analytical scientists, biotechnologists and pharmacutists with an understanding of the principles behind the design and manufacture of chemical and biochemical microsystems. The text is backed by a chapter devoted to troubleshooting as well as a g