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Nota di contenuto	CONTENTS; Chapter 1. Introduction; References; Chapter 2. Microchemical Systems; References; Chapter 3. Fundamental Technology: Nanofabrication Methods; 3.1. Top-Down Fabrication; 3.1.1. Introduction; 3.1.2. Bulk nanomachining techniques; 3.1.2.1. Combination of lithography and wet etching; 3.1.2.2. Combination of lithography and dry etching; 3.1.2.3. Other lithographic techniques; 3.1.2.4. Direct nanofabrication; 3.1.3. Surface machining techniques; 3.1.3.1. Utilization of polysilicon as a sacrificial material; 3.1.3.2. Utilization of metals and polymers as sacrificial materials 3.1.4. Imprinting and embossing nanofabrication techniques 3.1.5. New strategies of nanofabrication; 3.1.5.1. Non-lithographic techniques; 3.1.5.2. Hybrid-material techniques; 3.1.6. Combination of lift-off and lithography; 3.2. Local Surface Modification; 3.2.1. Modification using VUV; 3.2.2. Modification using an electron beam; 3.2.3. Modification using photochemical reaction; 3.3. Bonding; 3.3.1. Introduction; 3.3.2. Wafer bond characterization methods; 3.3.3. Wafer direct bonding; 3.3.4. Wafer direct bonding mechanism; 3.3.5. Surface requirements for wafer direct bonding 3.3.6. Low temperature direct bonding by surface plasma activation3.

3.7. Anodic bonding; References; Chapter 4. Fundamental Technology: Fluidic Control Methods; 4.1. Basic Theory; 4.2. Pressure-Driven Flow; 4.3. Shear-Driven Flow; 4.4. Electrokinetically-Driven Flow; 4.5. Conclusion and Outlook; References; Chapter 5. Fundamental Technology: Detection Methods; 5.1. Single Molecule Detection Methods; 5.1.1. Optical detection methods; 5.1.2. Electrochemical methods; 5.2. Measurement of Fluidic Properties; 5.2.1. Nonintrusive flow measurement techniques  
5.2.1.1. Streaming potential/current measurement in pressure-driven flows  
5.2.1.2. Current monitoring in electroosmotic flow; 5.2.2. Optical flow imaging techniques using a tracer; 5.2.2.1. Properties of flow tracers; 5.2.2.2. Scalar image velocimetry; 5.2.2.3. Nanoparticle image velocimetry; 5.2.2.4. Laser-induced fluorescence photobleaching anemometer with stimulated emission depletion; References; Chapter 6. Basic Nanoscience; 6.1. Liquid Properties; 6.1.1. Introduction; 6.1.2. Viscosities of liquids confined in extended nanospaces; 6.1.3. Electrical conductivity in extended nanospaces  
6.1.4. Streaming current/potential in extended nanospaces  
6.1.5. Ion transport in extended nanospaces; 6.1.6. Gas/liquid phase transition phenomena in extended nanospaces; 6.1.7. Structures and dynamics of liquids confined in extended nanospaces; 6.2. Chemical Reaction; 6.2.1. Enzymatic reaction; 6.2.2. Keto-enol tautomeric equilibrium; 6.2.3. Nanoparticle synthesis; 6.2.4. Nano DNA hybridization; 6.2.5. Nano redox reaction; 6.3. Liquid Properties in Intercellular Space; References; Chapter 7. Application to Chemistry and Biotechnology; 7.1. Separation; 7.1.1. Separation by electrophoresis  
7.1.2. Separation by pressure-driven flow or shear-driven flow

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## Sommario/riassunto

For the past decade, new research fields utilizing microfluidics have been formed. General micro-integration methods were proposed, and the supporting fundamental technologies were widely developed. These methodologies have made various applications in the fields of analytical and chemical synthesis, and their superior performances such as rapid, simple, and high efficient processing have been proved. Recently, the space is further downscaling to 10<sup>1</sup>-10<sup>3</sup>nm scale (we call the space extended-nano space). The extended-nano space located between the conventional nanotechnology (10<sup>0</sup>-10<sup>1</sup>nm) and micr

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