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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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