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# BioMEMS: state-of-the-art in detection, opportunities and prospects

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### Abstract

In recent years, the biological and biomedical applications of micro- and nanotechnology (commonly referred to as Biomedical or Biological Micro-Electro-Mechanical Systems [BioMEMS]) have become increasingly prevalent and have found widespread use in a wide variety of applications such as diagnostics, therapeutics, and tissue engineering. While research and development activity in this field stays intense, some applications have also been commercialized. This article reviews the recent advances in this very exciting and important field and presents a summary of the state of the art in the area of BioMEMS focusing on diagnostics, sensing, and detection. The areas of therapeutics and hybrid bio/artificial devices will be presented in more detail elsewhere [Biomedical Nanotechnology, Vol. I, Maruo Ferrari (Ed.), Kluwer Academic Publishers, 2004, in press.] and here are discussed briefly in terms of future directions and prospects.



## Keywords

BioMEMS; Biochips; Lab-on-chip; Nanotechnology; Nanobiotechnology

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