



# Labs on Chip: Principles, Design and Technology (Devices, Circuits, and Systems)

By Eugenio Iannone



**Labs on Chip: Principles, Design and Technology (Devices, Circuits, and Systems)** By Eugenio Iannone

**Labs on Chip: Principles, Design and Technology** provides a complete reference for the complex field of labs on chip in biotechnology. Merging three main areas? fluid dynamics, monolithic micro- and nanotechnology, and out-of-equilibrium biochemistry?this text integrates coverage of technology issues with strong theoretical explanations of design techniques. Analyzing each subject from basic principles to relevant applications, this book:

- Describes the biochemical elements required to work on labs on chip
- Discusses fabrication, microfluidic, and electronic and optical detection techniques
- Addresses planar technologies, polymer microfabrication, and process scalability to huge volumes
- Presents a global view of current lab-on-chip research and development
- Devotes an entire chapter to labs on chip for genetics

Summarizing in one source the different technical competencies required, **Labs on Chip: Principles, Design and Technology** offers valuable guidance for the lab-on-chip design decision-making process, while exploring essential elements of labs on chip useful both to the professional who wants to approach a new field and to the specialist who wants to gain a broader perspective.

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#### Review

"... a bright example of a truly interdisciplinary text. I was much impressed by its completeness. ... useful for a broad class of readers."

?Fabrizio Frezza, Sapienza – Università di Roma, Italy

#### About the Author

**Eugenio Iannone** is CEO and founder of Dianax S.R.L., a start-up company operating in the lab-on-chip field. He is an IEEE Engineering in Medicine and Biology Society and American Chemical Society member, as well as an author of three books and over 100 peer-reviewed journal papers. After receiving the Italian Laurea degree in engineering (classical version) from Sapienza – Università di Roma, he served as a researcher at Fondazione Ugo Bordoni, joined Pirelli s.p.a., and subsequently worked at Cisco. Since 2009, his research has focused on labs on chip. In 2011, he founded the Dianax Study Group, dedicated to lab-on-chip research.

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