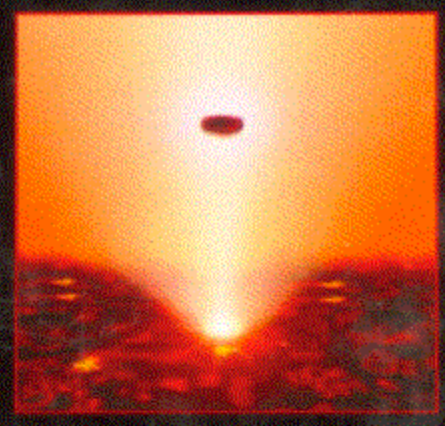
Laser Manipulation of Cells and Tissues



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A variety of laser manipulation tools have made it possible for researchers to perform subtle, subcellular manipulations of cells and tissues, greatly advancing the areas of cell and developmental biology. This book describes the different kinds of research and practical/analytical applications for which laser manipulation is currently being used by research scientists and clinicians. It also provides the basic information needed to build a customized laser micromanipulation system, and discusses how combining imaging and molecular probe technology with laser micromanipulation can greatly extend the use of this technology in molecular biology, cell and developmental biology, pathobiology, and medicine. As a part of the Methods in Cell Biology series, Laser Manipulation of Cells and Tissues provides the methods and protocols invaluable to researchers in the fields of cell and developmental biology, cell physiology, cancer biology, pathology, and stem cell biology, to name a few.

Key Features:

- Includes chapters on laser catapulting and capture of DNA and other cellular material for biochemical analysis – a major use of this technology that has been adapted for molecular pathology both in clinical medicine and research
- Also presents information of interest to cell biologists and drug discovery researchers on optoporation, uncaging of molecules, and the ability to collect and analyze nanomolar amounts of cell material by an array of biochemical/physical tools
- Presents the theory of laser tweezers (optical tweezers) and their application to novel problems in biology

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