

# Fields, Forces, and Flows in Biological Systems

**ALAN J. GRODZINSKY**

*Fields, Forces, and Flows in Biological Systems* provides a common language for students in engineering and bioscience to understand how forces governing mass transport, electric current, and fluid flow affect the biology and biophysics of molecules, cells, tissues, and organs. Examples abound throughout the text and are grounded by end-of-chapter problems. Starting with first principles, basic mathematical and engineering tools are integrated within the context of biology and physiology.

In addition to advanced students in biological and biomedical engineering, this textbook will be a valuable resource for researchers in biophysics, physical chemistry, materials science, and chemical, electrical, and mechanical engineering.

Alan J. Grodzinsky is Professor of Biological, Electrical, and Mechanical Engineering and Director of the Center for Biomedical Engineering at the Massachusetts Institute of Technology. His research involves the synthesis of electrical, mechanical, and chemical processes in cells and molecular networks that help to elucidate tissue disease, remodeling and repair.

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