

Biomimetic Microsensors Inspired by Marine Life

By Ajay Giri Prakash Kottapalli, Mohsen Asadnia, Jianmin Miao, Michael S. Triantafyllou



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This book narrates the development of various biomimetic microelectromechanical systems (MEMS) sensors, such as pressure, flow, acceleration, chemical, and tactile sensors, that are inspired by sensing phenomena that exist in marine life. The research described in this book is multifaceted and combines the expertise and understanding from diverse fields, including biomimetics, microfabrication, sensor engineering, MEMS design, nanotechnology, and material science. A series of chapters examine the design and fabrication of MEMS sensors that function on piezoresistive, piezoelectric, strain gauge, and chemical sensing principles. By translating nature-based engineering solutions to artificial man-made technology, we can find innovative solutions to critical problems.

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Editorial Review

From the Back Cover

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About the Author

Ajay Kottapalli is a postdoctoral associate at the Center for Environmental Sensing and Modeling (CENSAM) division of the Singapore-MIT Alliance for Research and Technology (SMART). His research interests include bioinspired and biomimetic MEMS, polymer MEMS flow sensors, and bio-MEMS. A graduate of Nanyang Technological University in Singapore and the Indian Institute of Technology, Madras, he has coauthored several articles on biomimetic sensors and related topics.

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