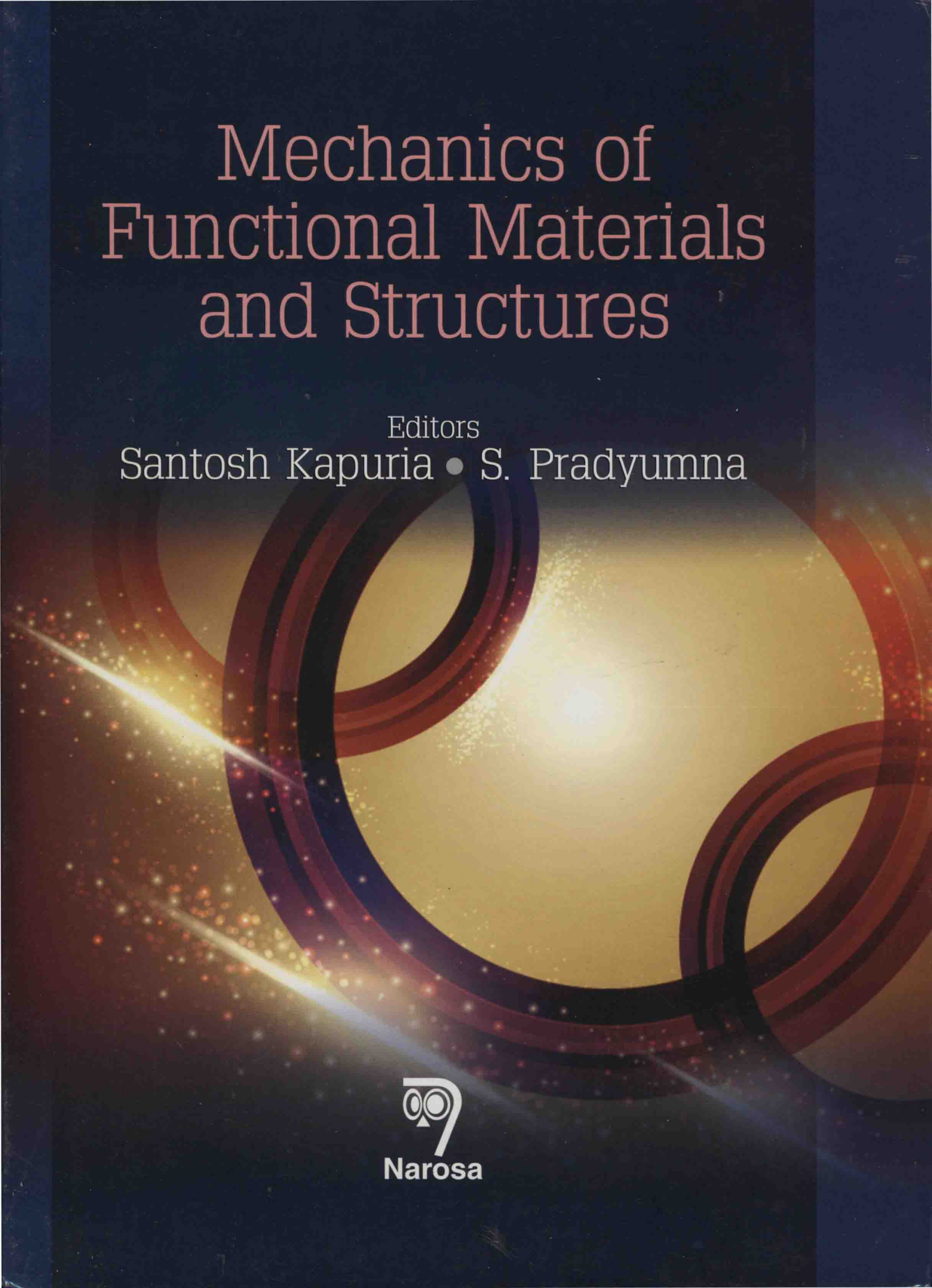
Mechanics of Functional Materials and Structures

Editors
Santosh Kapuria • S. Pradyumna



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Santosh Kapuria
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PREFACE

It is a great pleasure for us to welcome you, on behalf of the organizing committee, to the Third Asian Conference on Mechanics of Functional Materials and Structu : (ACMFMS 2012), organized by the Indian Institute of Technology Delhi in New Delhi.

The ACMFMS series began in 2008 with the aim of providing a forum for researchers and academics, particularly from East Asia and the neighboring region, to present their latest findings, exchange ideas, and establish relationships for future cooperation and subsequent promotion of research in the theoretical and applied mechanics of solids. Young faculty members and researchers from universities and industries are specially encouraged to participate and benefit from this conference. The first in the series was held in Matsue, Japan in October, 2008 and the second in Nanjing, China in October, 2010.

In recent years, solid mechanics has emerged as one of the key areas of engineering science, controlling technological developments in many areas ranging from nanotechnology to space technology. It offers fundamental understanding of materials, structures, and diverse complex systems such as those found in biology and nanotechnology, and many physical phenomena at multiple scales. The concept of multifunctional materials and structures has attracted multifaceted research activities in applications spanning over mechanical, aerospace, civil, materials, biomedical, nuclear, naval, arctic and electronics engineering. The papers contributed in this conference are a reflection of the diverse research activities in this area and represent the recent developments in the fundamental understanding of behavior of functional materials and structures, as well as its applications to modern technology.

We received 358 submissions from 18 countries, reflecting the growing interest in the conference. This proceedings contains 239 four-page papers covering mechanics of functional and smart structures, mechanics of functional materials, structural health monitoring, mechanics of composite and functionally graded materials and structures, biomechanics, nanomechanics, fatigue and fracture, impact, plasticity and contact, dynamics and stability and fluid structure interaction. The scientific program consists of seven keynote lectures, eight invited lectures and 231 contributed papers.

The organizing committee acknowledges the financial support received from the Indian Institute of Technology Delhi, Department of Science and Technology, Defence Research and Development Organization, Council of Scientific and Industrial Research and Indian Space Research Organization.

We would like to extend our sincere thanks to all authors for contributing papers to ACMFMS 2012, and all delegates for attending it and making ACMFMS series a success. Finally, we would like to wish you a very enjoyable stay in the capital of India, which has an effervescent history, captivating ancient monuments, fascinating museums, magnificent temples, and bustling markets.

Santosh Kapuria
S. Pradyumna

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