

IUTAM Symposium on Mechanics of Soft Active Materials 2014

Procedia IUTAM Volume 12

**Haifa, Israel
12-15 May 2014**

Editors:

Konstantin Volokh

Mahmood Jabareen

ISBN: 978-1-5108-0305-3

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© by Elsevier B.V.
All rights reserved.

Printed by Curran Associates, Inc. (2015)

For permission requests, please contact Elsevier B.V.
at the address below.

Elsevier B.V.
Radarweg 29
Amsterdam 1043 NX
The Netherlands

Phone: +31 20 485 3911
Fax: +31 20 485 2457

<http://www.elsevierpublishingsolutions.com/contact.asp>

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2634
Email: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

Editorial.....	1
<i>Konstantin Volokh, Mahmood Jabareen</i>	
Ionic Control of Crack Propagation in Biopolymer Hydrogels	3
<i>Tristan Baumberger, Olivier Ronzin</i>	
Gel Mechanics: A Thermo-mechanically Coupled Theory for Fluid Permeation in Elastomeric Materials	10
<i>Shawn A. Chester</i>	
Viscoelastic Effects of Silicone Gels at the Micro- and Nanoscale	20
<i>Kenry, Man Chun Leong, Mui Hoon Nai, Fook Chiong Cheong, Chwee Teck Lim</i>	
Solid Flow Fields and Growth of Soft Solid Mass	31
<i>David Durban, Tal Cohen, Yannis Dafalias</i>	
Optimization of Load-driven Soft Dielectric Elastomer Generators.....	42
<i>Eliana Bortot, Roberta Springhetti, Gal deBotton, Massimiliano Gei</i>	
Computational Modeling of Myocardial Infarction.....	52
<i>Ezgi Berberoglu, Serdar Goktepe</i>	
Micromechanical Modelling of Cellular Ferroelectrets by Using Internal Variables.....	62
<i>Dietmar Gross, Bai-Xiang Xu</i>	
Modeling Breakdown-resistant Composite Dielectrics.....	73
<i>Wei Hong, Krishna Chaitanya Pitike</i>	
Shape Memory Effect in Polymeric Materials: Mechanisms and Optimization	83
<i>Ye Zhou, Wei Min Huang</i>	
2D Mixed Hybrid FEM of Lanir Model.....	93
<i>Cong Yu, Jacques M. Huyghe, Kamyar Malakpoor</i>	
On the Modeling of Electromechanical Coupling in Electroactive Polymers Using the Mixed Finite Element Formulation.....	105
<i>Mahmood Jabareen Neubauer</i>	
Deformation of a Solid Film with Surface Tension by a Liquid Drop.....	116
<i>Chung-Yuen Hui, Anand Jagota, Nichole Nadermann, Xuejuan Xu</i>	
Fully Coupled Cardiac Electromechanics with Orthotropic Viscoelastic Effects	124
<i>Baris Cansiz, Hüsnü Dal, Michael Kaliske</i>	
Modelling of Viscoelastic Dielectric Elastomers with Deformation Dependent Electric Properties.....	134
<i>Anna Ask, Andreas Menzel, Matti Ristinmaa</i>	
Mechanics of Bio-hybrid Systems.....	145
<i>P. Nardinocchi</i>	
Thermo-mechanics of Amorphous Shape-memory Polymers.....	154
<i>Rui Xiao, Thao D. Nguyen</i>	
Visco-hyperelasticity of Electro-active Soft Tissues.....	162
<i>Alessio Gizzi, Anna Pandolfi</i>	
Active Stress as a Local Regulator of Global Size in Morphogenesis.....	176
<i>V. Pettinati, D. Ambrosi, P. Ciarletta</i>	
Tension Dependent Growth and Retraction of Neurites	185
<i>Prashant K. Purohit</i>	
Controlled Sequential Shape Changing Components by 3D Printing of Shape Memory Polymer Multimaterials	193
<i>Kai Yu, Alexander Ritchie, Yiqi Mao, Martin L. Dunn, H. Jerry Qi</i>	
Modeling Aneurysm Growth and Failure.....	204
<i>Konstantin Volokh</i>	
Mechanical Interaction of Metastatic Cancer Cells with a Soft Gel.....	211
<i>Revital Kristal-Muscal, Liron Dvir, Ma'ayan Schwartzer, Daphne Weis</i>	
Author Index	