

**MATERIALS RESEARCH SOCIETY**  
**SYMPOSIUM PROCEEDINGS VOLUME 1345**

# **Nanoscale Electromechanics of Inorganic, Macromolecular and Biological Systems**

April 25-29, 2011  
San Francisco, California, USA

**Printed from e-media with permission by:**

Curran Associates, Inc.  
57 Morehouse Lane  
Red Hook, NY 12571  
[www.proceedings.com](http://www.proceedings.com)

**ISBN: 978-1-62748-199-1**

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

©Materials Research Society 2011

This reprint is produced with the permission of the Materials Research Society and Cambridge University Press.

This publication is in copyright, subject to statutory exception and to the provisions of relevant collective licensing agreements. No reproduction of any part may take place without the written permission of Cambridge University Press.

Cambridge University Press  
Cambridge, New York, Melbourne, Madrid, Cape Town,  
Singapore, São Paulo, Delhi, Tokyo, Mexico City

Cambridge University Press  
32 Avenue of the Americas, New York, NY 10013-2473, USA  
[www.cambridge.org](http://www.cambridge.org)

Materials Research Society  
506 Keystone Drive, Warrendale, PA 15086  
[www.mrs.org](http://www.mrs.org)

CODEN: MRSPDH

ISBN: 978-1-62748-199-1

Cambridge University Press has no responsibility for the persistence or accuracy of URLs for external or third-part Internet Web sites referred to in this publication and does not guarantee that any content on such Web sites is, or will remain, accurate or appropriate.

**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](mailto:curran@proceedings.com)  
Web: [www.proceedings.com](http://www.proceedings.com)

CURRAN ASSOCIATES INC.  
**proceedings**  
.com

## TABLE OF CONTENTS

<b>High-<math>\kappa</math> Insulator Thin Films and Retention Properties of MFIS Diodes .....</b>	<b>1</b>
<i>Yichun Zhou</i>	
<b>Mapping Nanomechanical Properties near Internal Interfaces in Biological Materials .....</b>	<b>8</b>
<i>Igor Zlotnikov, Haika Drezner, Doron Shilo, Barbara Aichmayer, Yannicke Dauphin, Emil Zolotoyabko, Peter Fratzl</i>	
<b>Multiphysics Modeling of Ionic Gel Actuators .....</b>	<b>18</b>
<i>Huibiao Li, Meie Li, Jinxiong Zhou</i>	
<b>Author Index</b>	