

MRS **Advances**

Biomaterials and Soft Materials

<https://doi.org/10.1557/adv.2018.395> Published online by Cambridge University Press

MRS Advances: Biomaterials and Soft Materials

Associate Editor:

Roger J. Narayan, *University of North Carolina/North Carolina State University*

Principal Editors:

Kalpana Katti, *North Dakota State University, USA*
Dinesh Katti, *North Dakota State University, USA*
Carlos Martinez, *Purdue University, USA*
Silvia Vignolini, *University of Cambridge, UK*
Matteo Moretti, *I.R.C.C.S. Istituto Ortopedico Galeazzi, Italy*
Marc in het Panhuis, *University of Wollongong, Australia*

Venkatesan Renugopalakrishnan, *Northeastern University, USA*
Ivan Minev, *Technische Universität Dresden, Germany*
Benedetto Marelli, *Massachusetts Institute of Technology, USA*
Alberto Saiani, *University of Manchester, UK*

MRS Advances Editorial Board:

Editor-in-Chief: David F. Bahr, *Purdue University*
Asa Barber, *University of Portsmouth, United Kingdom*
Meenakshi Dutt, *Rutgers University*
Elizabeth L. Fleischer, *Materials Research Society*
Marian Kennedy, *Clemson University*

Marilyn L. Minus, *Northeastern University*
Roger J. Narayan, *University of North Carolina/North Carolina State University*
Ruth Schwaiger, *Karlsruhe Institute of Technology, Germany*
Jeremy Theil, *Mountain View Energy*

Materials Research Society Editorial Office, Warrendale, PA:

Ellen W. Kracht, *Publications Manager*
Susan Dittrich, *Journals Editorial Assistant*

Kirby L. Morris, *Journals Production Assistant*
Eileen M. Kiley, *Director of Communications*

Disclaimer

Authors of each article appearing in this Journal are solely responsible for all contents in their article(s) including accuracy of the facts, statements, and citing resources. Facts and opinions are solely the personal statements of the respective authors and do not necessarily represent the views of the editors, the Materials Research Society, or Cambridge University Press.

MRS Advances (EISSN: 2059-8521) is published by Cambridge University Press, One Liberty Plaza, Floor 20, New York, NY 10006 for the Materials Research Society.

Copyright © 2018, Materials Research Society. All rights reserved. No part of this publication may be reproduced, in any form or by any means, electronic, photocopying, or otherwise, without permission in writing from Cambridge University Press. Policies, request forms and contacts are available at: <http://www.cambridge.org/rights/permissions/permission.htm>. Permission to copy (for users in the USA) is available from Copyright Clearance Center at: <http://www.copyright.com>, email: info@copyright.com.

Purchasing Options:

Premium Subscription- Premium Subscription includes current subscription and one year's lease access to the full MRS Online Proceedings Library Archive for \$7,219.00 / £4,888.00 / €6,647.00. **Subscription-** Subscription with perpetual access to the content subscribed to in a given year, including three years of back-file lease access to content from the MRS Online Proceedings Library Archive. The price for a 2018 subscription is \$3,019.00 / £1,948.00 / €2,625.00. **MRS Members-** Access to *MRS Advances* is available to all MRS members without charge.

Contact Details:

For all inquiries about pricing and access to *MRS Advances*, please get in touch via the following email addresses: online@cambridge.org (for the Americas); library.sales@cambridge.org (for UK, Europe, and rest of world).

cambridge.org/adv

CONTENTS

<i>In Vivo</i> Functionalization of Biosilica from <i>Thalassiosira weissflogii</i> with a Two-photon Red Emitting Fluorescent Tag	1611
Danilo Vona, Gabriella Leone, Marco Lo Presti, Roberta Ragni, Jonathan Daniel, Mireille Blanchard-Desce, Gianluca M. Farinola, and Stefania R. Cicco	
Fabrication of Ultrathin and Flexible Graphene-based Devices for <i>In Vivo</i> Neuroprosthetics	1621
Dmitry Kireev, Pegah Shokooohimehr, Mathis Ernst, Viviana Rincón Montes, Kagithiri Srikantharajah, Vanessa Maybeck, Bernhard Wolfrum, and Andreas Offenhäusser	
<i>In Vivo</i> Dopamine Detection and Single Unit Recordings Using Intracortical Glassy Carbon Microelectrode Arrays	1629
Elisa Castagnola, Nasim Winchester Vahidi, Surabhi Nimbalkar, Srihita Rudraraju, Marvin Thielk, Elena Zucchini, Claudia Cea, Stefano Carli, Timothy Q. Gentner, Davide Ricci, Luciano Fadiga, and Sam Kassegne	
Enhancing Coil Design for Micromagnetic Brain Stimulation	1635
Giorgio Bonmassar, Laleh Golestanirad, and Jiangdong Deng	
Self-cleaning and Controlled Adhesion of Gecko Feet and Their Bioinspired Micromanipulators	1641
Yiyang Wan and Zhenhai Xia	
Non-wetting Nickel-cerium Oxide Composite Coatings with Remarkable Wear Stability.	1647
Jason Tam, Uwe Erb, and Gisele Azimi	
A Carbohydrate-based Elastomer with Tunable Properties for Sensing Applications	1653
Haoran Liu, Jun Ge, Xiao Lin, Huilin Yang, and Lei Yang	

Preliminary Molecular Dynamics Studies of the Montmorillonite, Amylose, Fatty Acids and Water for Polymer-clay Nanocomposite Modeling. 1659
Felipe A.R. Silva, Maria J.A. Sales,
Leonardo G. Paterno, Mohamed Ghoul,
Latifa Chebil, and Elaine R. Maia