

JOURNAL OF Applied Polymer SCIENCE

EDITOR-IN-CHIEF

Stefan Spiegel

DEPUTY EDITOR

Hilary J. Crichton

ASSOCIATE EDITORS

Emily Hu

Jenny Mahoney

Mara Staffilani

Xin Su

ASSISTANT**MANAGING EDITORS**

Jenna Pope

Jessica Bradley

PRODUCTION EDITOR

Melissa Ekis

FOUNDING EDITOR

Herman F. Mark

CONSULTING EDITOR

Eric Baer

EXECUTIVE EDITORS**Subramanian Iyer**

Eastman Chemical Company
Advanced Polymer Engineer
100 Lincoln Street
Kingsport, TN 37660, USA

Brian Knapp

PROMERUS LLC
9921 Brecksville Road
Brecksville, OH 44141, USA

Sergei Nazarenko

The University of Southern
Mississippi, School of Polymers and
High Performance Materials
118 College Drive MB #10076
Hattiesburg, MS 39406-0001, USA

Mark A. Schubert

Sherwin-Williams Company
Breen Technology Center
601 Canal Road
Cleveland, OH 44113 USA

EDITORIAL BOARD**Rigoberto Advincula**

University of Houston
Houston, TX, USA

Ann-Christine Albertsson

KTH Royal Institute of Technology
Stockholm, Sweden

David Benko

The Goodyear Tire & Rubber Co.
Akron, OH, USA

Anil Bhowmick

Indian Institute of Technology
Kharagpur, India

Bryan Boudouris

Purdue University
West Lafayette, IN, USA

Neal Chung

National University of Singapore
Singapore

Robert E. Cohen

Massachusetts Institute of
Technology
Cambridge, MA, USA

Isabel C. Escobar

University of Toledo
Toledo, OH, USA

Antonio Facchetti

Northwestern University
Evanston, IL, USA

Lionel Flandin

Université de Savoie
Le Bourget-du-lac, France

Andrzej Galeski

Polish Academy of Sciences
Sienkiewicza, Poland

Julie M. Goddard

University of Massachusetts
Amherst, MA, USA

Sophie M. Guillaume

Université de Rennes
Rennes, France

Atsushi Hotta

Keio University
Yokohama, Japan

Yanbin Huang

Tsinghua University
Beijing, China

Avraam I. Isayev

The University of Akron
Akron, OH, USA

J. Karger-Kocsis

University of Technology
and Economics
Budapest, Hungary

Sangamesh Kumbar

University of Connecticut Health
Center
Farmington, CT, USA

J. M. Lagaron

Novel Materials and Nanotechnology,
IATA-CSIC
Valencia, Spain

Daeyeon Lee

University of Pennsylvania
Philadelphia, PA, USA

Alan J. Lesser

University of Massachusetts
Amherst, MA, USA

Yongfang Li

Chinese Academy of Sciences
Beijing, China

Michael Malkoch

KTH Royal Institute of Technology
Stockholm, Sweden

Jimmy W. Mays

University of Tennessee
Knoxville, TN, USA

Michael A. R. Meier

Karlsruhe Institute of Technology
Karlsruhe, Germany

Manjuri Misra

University of Guelph
Guelph, Ontario, Canada

Koon-Gee Neoh

National University of Singapore
Singapore

Roisin M. Owens

Ecole des Mines de St. Etienne
Gardanne, France

Roberto Pantani

University of Salerno
Salerno, Italy

Cheolmin Park

Yonsei University
Seoul, South Korea

Ho Bum Park

Hanyang University
Seoul, South Korea

Moon Jeong Park

POSTECH
Pohang, South Korea

Donald R. Paul

University of Texas
Austin, TX, USA

Nicholas A. Peppas

University of Texas at Austin
Austin, TX, USA

Luana Persano

National Research Council
Italy

Robert K. Prud'homme

Princeton University
Princeton, NJ, USA

David A. Putnam

Cornell University
Ithaca, NY, USA

Bluma G. Soares

Universidade Federal do
Rio de Janeiro
Rio de Janeiro, Brazil

S. C. Tjong

City University of Hong Kong
Kowloon, Hong Kong

Jadranka Travas-Sejdic

University of Auckland
Auckland, New Zealand

Christopher Tucker

The Dow Chemical Company
Midland, MI, USA

Bart Van der Bruggen

KU Leuven
Leuven, Belgium

Yu-Zhong Wang

Sichuan University
Chengdu, China

Christoph Weder

University of Freiburg
Freiburg, Germany

Robert A. Weiss

University of Connecticut
Storrs, CT, USA

Andrew K. Whittaker

University of Queensland
Brisbane, Australia

Paula Wood-Adams

Concordia University
Montreal, QC, Canada

Kenneth J. Wynne

Virginia Commonwealth University
Richmond, VA, USA

Lina Zhang

Wuhan University
Wuhan, China

Liquan Zhang

Beijing University of Chemical
Technology, Beijing, China

The JOURNAL OF APPLIED POLYMER SCIENCE (Print ISSN: 0021-8995; Online: 1097-4628) is published semi-monthly, by Wiley Subscription Services, Inc., a Wiley Company, 111 River St., Hoboken, NJ 07030-5774.

Periodical Postage Paid at Hoboken, NJ and additional offices.

Postmaster: Send all address changes to The JOURNAL OF APPLIED POLYMER SCIENCE, John Wiley & Sons Inc., C/O The Sheridan Press, PO Box 465, Hanover, PA 17331.

Copyright and Copying: Copyright © 2016 Wiley Periodicals, Inc., a Wiley Company. All rights reserved. No part of this publication may be reproduced, stored or transmitted in any form or by any means without the prior permission in writing from the copyright holder. Authorization to copy items for internal and personal use is granted by the copyright holder for libraries and other users registered with their local Reproduction Rights Organisation (RRO), e.g. Copyright Clearance Center (CCC), 222 Rosewood Drive, Danvers, MA 01923, USA (www.copyright.com), provided the appropriate fee is paid directly to the RRO. This consent does not extend to other kinds of copying such as copying for general distribution, for advertising or promotional purposes, for creating new collective works or for resale. Special requests should be addressed to: permissions@wiley.com

Information for Subscribers: The *Journal of Applied Polymer Science* is published in 48 issues per year. Institutional subscription prices for 2016 are: Print & Online: US\$38,297 (US), US\$38,938 (Rest of the World), €25,124 (Europe), £19,866 (UK). Prices are exclusive of tax. Asia-Pacific GST, Canadian GST/HST and European VAT will be applied at the appropriate rates. For more information on current tax rates, please go to www.wileyonlinelibrary.com/tax-vat. The price includes online access to the current and all online back files to January 1st 2012, where available. For other pricing options, including access information and terms and conditions, please visit www.wileyonlinelibrary.com/access

For submission instructions, subscription and all other information visit: wileyonlinelibrary.com/journal/APP

Delivery Terms and Legal Title: Where the subscription price includes print issues and delivery is to the recipient's address, delivery terms are Delivered at Place (DAP); the recipient is responsible for paying any import duty or taxes. Title to all issues transfers FOB our shipping point, freight prepaid. We will endeavour to fulfil claims for missing or damaged copies within six months of publication, within our reasonable discretion and subject to availability.

Journal Customer Services: For ordering information, claims and any enquiry concerning your journal subscription please go to www.wileycustomerhelp.com/ask or contact your nearest office.

Americas: Email: cs-journals@wiley.com; Tel: +1 781 388 8598 or +1 800 835 6770 (toll free in the USA & Canada).

Europe, Middle East and Africa: Email: cs-journals@wiley.com; Tel: +44 (0) 1865 778315.

Asia Pacific: Email: cs-journals@wiley.com; Tel: +65 6511 8000.

Japan: For Japanese speaking support, Email: cs-japan@wiley.com; Tel: +65 6511 8010 or Tel (toll-free): 005 316 50 480.

Visit our Online Customer Help available in 7 languages at www.wileycustomerhelp.com/ask

Production Editor: Melissa Ekis (email: APP@wiley.com)

View this journal online at wileyonlinelibrary.com/journal/APP

The JOURNAL OF APPLIED POLYMER SCIENCE accepts articles for Open Access publication. Please visit <http://olabout.wiley.com/WileyCDA/Section/id-406241.html> for further information about OnlineOpen.

Back issues: Single issues from current and recent volumes are available at the current single issue price from cs-journals@wiley.com. Earlier issues may be obtained from Periodicals Service Company, 351 Fairview Avenue — Ste 300, Hudson, NY 12534, USA. Tel: +1 518 822-9300, Fax: +1 518 822-9305, E-mail: psc@periodicals.com

Advertising/Sales: Inquiries concerning advertising should be forwarded to the Advertising Sales Manager, c/o John Wiley & Sons, Inc., 111 River Street, Hoboken, NJ 07030; (201) 748-8832. Advertising Sales, European Contact: Jackie Sibley, c/o John Wiley & Sons, Ltd., The Atrium, Southern Gate, Chichester, West Sussex PO19 8SQ, England. Tel: 44 1243 770 351; Fax: 44 1243 770 432; e-mail: adsales@wiley.co.uk.

Disclaimer: The Publisher and Editors cannot be held responsible for errors or any consequences arising from the use of information contained in this journal; the views and opinions expressed do not necessarily reflect those of the Publisher and Editors, neither does the publication of advertisements constitute any endorsement by the Publisher and Editors of the products advertised.

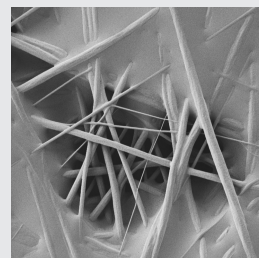
Other Correspondence: Address all other correspondence to: JOURNAL OF APPLIED POLYMER SCIENCE, Publisher, c/o John Wiley & Sons, Inc., 111 River Street, Hoboken, NJ 07030.

Wiley's Corporate Citizenship initiative seeks to address the environmental, social, economic, and ethical challenges faced in our business and which are important to our diverse stakeholder groups. Since launching the initiative, we have focused on sharing our content with those in need, enhancing community philanthropy, reducing our carbon impact, creating global guidelines and best practices for paper use, establishing a vendor code of ethics, and engaging our colleagues and other stakeholders in our efforts. Follow our progress at www.wiley.com/go/citizenship.

Abstracting and Indexing Services: The Journal is indexed by *Chemical Abstracts*, *Chemical Titles*, *Chemistry Citation Index*, *Compendex*, *Current Contents/Engineering, Computing, and Technology*, *Current Contents/Physical, Chemical and Earth Sciences*, *INSPEC*, *ISI Alerting Services (includes Research Alert)*, *Materials Science Citation Index*, *Polymer Blends, Alloys & Interpenetrating Polymer Networks Abstracts*, *Reaction Citation Index*, *Science Citation Index*, *SciSearch (also known as Science Citation Index-Expanded)*, *Urethane Abstracts*, *World Surface Coatings Abstracts*, and *World Textiles*.

Wiley's Corporate Citizenship initiative seeks to address the environmental, social, economic, and ethical challenges faced in our business and which are important to our diverse stakeholder groups. Since launching the initiative, we have focused on sharing our content with those in need, enhancing community philanthropy, reducing our carbon impact, creating global guidelines and best practices for paper use, establishing a vendor code of ethics, and engaging our colleagues and other stakeholders in our efforts. Follow our progress at www.wiley.com/go/citizenship
Printed in Singapore by Markono Print Media Pte Ltd.

Kaan Bilge, Ayça Ürkmez, Eren Şimşek and Melih Papila present a method for stabilizing the morphology of electrospun polymer nanofibers using high temperature, *in situ* crosslinking. The crosslinking agents phthalic anhydride and tributylamine were incorporated into the electrospinning styrene and glycidyl-methacrylate copolymer solution. The cover shows the crosslinked polymer fibers embedded in an epoxy matrix. The fibrous network and interfacial compatibility were fully maintained despite the high temperature curing. (DOI: 10.1002/app.44090)



Volume 133, Number 43 was mailed the week of August 22, 2016.

REVIEW

44080 Microstructural foundations of the strength and resilience of LLDPE artificial turf yarn

K. RAGAERT, L. DELVA, N. VAN DAMME, M. KUZMANOVIC, S. HUBO AND L. CARDON

Published online 21 July 2016

ARTICLES

44009 Curing of poly(furfuryl alcohol) resin catalyzed by a homologous series of dicarboxylic acid catalysts: Kinetics and pot life

R. M. SEYEDLAR, M. IMANI AND S. M. MIRABEDINI

Published online 26 July 2016

44090 Stabilized electrospinning of heat stimuli/*in situ* crosslinkable nanofibers and their self-same nanocomposites

K. BILGE, A. ÜRKMEZ, E. ŞİMŞEK AND M. PAPILA

Published online 21 July 2016

44102 Effect of using polymeric materials in ecological sand-fixing of Kerqin Sandy Land of China

W. GONG, Y. ZANG, B. LIU, H. CHEN, F. WU, R. HUANG AND S. WANG

Published online 21 July 2016

44112 Simplified modeling of the electrospinning process from the stable jet region to the unstable region for predicting the final nanofiber diameter

N. ISMAIL, F. J. MAKSOUD, N. GHADDAR, K. GHALI AND A. TEHRANI-BAGHA

Published online 29 July 2016

44119 Morphology and mechanical properties of PVC/straw-fiber coated with liquid nitrile-butadiene rubber composites

H. LIU, J. WANG, C. GONG, F. CHENG, G. WANG, S. WEN AND G. ZHENG

Published online 1 August 2016

44123 A structural study of epoxidized natural rubber (ENR-50) ring opening under mild acidic condition

R. HAMZAH, M. A. BAKAR, O. S. DAHHAM, N. N. ZULKEPLI AND S. S. DAHHAM

Published online 21 July 2016

- 44125 Oxidation resistance and abrasive wear resistance of vitamin E stabilized radiation crosslinked ultra-high molecular weight polyethylene**
A. BELLARE, F. D'ANGELO, H. D. NGO AND T. S. THORNHILL
Published online 21 July 2016
- 44127 Crystallization behavior of hyperbranched polyethylenes with different degree of branching**
X. LUO, W. HUANG AND D. YAN
Published online 25 July 2016
- 44138 Characterization and properties of LDPE film with gallic-acid-based oxygen scavenging system useful as a functional packaging material**
B. J. AHN, K. K. GAIKWAD AND Y. S. LEE
Published online 22 July 2016
- 44139 Synthesis and application of hyperbranched poly(urethane-urea) finishing agent with amino groups**
L.-F. REN, J. GENG, T. CHEN, P.-Y. GUO AND T.-T. QIANG
Published online 21 July 2016
- 44140 Synthesis and application of sodium 2-acrylamido-2-methylpropane sulphonate/*N*-vinylcaprolactam/divinyl benzene as a high-performance viscosifier in water-based drilling fluid**
B. XIE, X. LIU, H. WANG AND L. ZHENG
Published online 15 July 2016
- 44141 Spray-dried microparticles composed of cinnamoyl poly(*N*-isopropylacrylamide-co-hydroxyethylacrylate) and gold nanoparticle**
H. ZHANG AND J.-C. KIM
Published online 22 July 2016
- 44142 Characteristics of murta bast fiber reinforced epoxy composites**
A. H. BARBHUIYA, S. U. CHOUDHURY AND K. ISMAIL
Published online 15 July 2016
- 44143 PFG-NMR measurement of self-diffusion coefficients of long-chain α -olefins and their mixtures in semi-crystalline polyethylene**
J. SUN, M. CHEN, H. WANG, B. JIANG, C. MATTEA, S. STAPP, J. WANG, Z. LIAO AND Y. YANG
Published online 20 July 2016
- 44145 Shape memory crosslinked polyurethanes containing thermoreversible Diels-Alder couplings**
C. LAKATOS, K. CZIFRÁK, J. KARGER-KOCSIS, L. DARÓCZI, M. ZSUGA AND S. KÉKI
Published online 21 July 2016
- 44147 Studies on the thermal and mechanical behavior of PLA-PET blends**
A. R. McLAUHLIN AND O. R. GHITA
Published online 20 July 2016
- 44153 Glycerol as high-permittivity liquid filler in dielectric silicone elastomers**
P. MAZUREK, L. YU, R. GERHARD, W. WIRGES AND A. L. SKOV
Published online 20 July 2016
- 44156 Light scattering materials with tunable optical properties by controlling refractive index of the dispersed phase**
X. LIU, X. DONG, Y. XIONG, P. YI, Y. REN AND S. GUO
Published online 22 July 2016
- 44157 Morphology and crystallization behavior of PCL/SAN blends containing nanosilica with different surface properties**
J. QIAN, Z. XIAO, L. DONG, D. TANG, M. LI, Q. YANG, Y. HUANG AND X. LIAO
Published online 20 July 2016
- 44158 Octakis(ethynyl dimethylsiloxy) silsesquioxane: Synthesis and application in poly(silicane arylacetylene) resin**
X. BU, Y. ZHOU, C. LI AND F. HUANG
Published online 20 July 2016

- 44159 Recycling of ultrahigh molecular weight polyethylene waste used for preparing high performance synthetic paper**
D. CHENG, Y. ZAN, J. DU AND Y. LUO
Published online 21 July 2016
- 44160 Epoxy composite reinforced with three-dimensional polyimide fiber felt: Fabrication and tribological properties investigation**
H. WANG, Y. ZHU, L. YAN, L. SUN AND Y. ZHU
Published online 21 July 2016
- 44161 Interaction of silylated superplasticizers with cementitious materials**
Z. LU, X. KONG, H. LIU, Z. WANG, Y. ZHANG, B. DONG AND F. XING
Published online 21 July 2016
- 44164 Acoustical, thermal, and morphological properties of zein reinforced oil palm empty fruit bunch fiber bio-composites**
E. JAYAMANI, S. HAMDAN, S. K. HENG, M. R. RAHMAN AND M. K. B. BAKRI
Published online 21 July 2016
- 44165 Replacement of conventional dedusting agents with green alternatives in production of rock mineral wool insulation products**
L. MIRNIK, S. KOVAČIČ, M. HUSKIĆ, D. PAHOVNIK AND E. ŽAGAR
Published online 21 July 2016
- 44166 Retarding hydrolytic degradation of polylactic acid: Effect of induced crystallinity and graphene addition**
A. FINNISS, S. AGARWAL AND R. GUPTA
Published online 22 July 2016