Nanomaterials



MRS Advances: Nanomaterials

Associate Editor:

Marilyn L. Minus, Northeastern University

Principal Editors:

Hannah Joyce, University of Cambridge Andrew Wee, National University of Singapore Ranjit Pati, Michigan Technological University Don Futaba, AIST

Gang Xiong, First Solar, Inc. Yongfeng Mei, Fudan University Georgios Sotiriou, ETH Zurich

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 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 © 2017, 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 gto 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 2017 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

nttps://doi.org/10.1557/adv.20

CONTENTS

•	Underlayer of MgO Single Crystal
*	High Aspect Ratio Machining of Nanocarbon Materials by Reactive Ion Etching
	Thermal Rectification Characteristics of Graphene Nanoribbons of Asymmetric Geometries
	Numerical and Experimental Investigation of Carbon Nanotube Sock Formation
	Polymer/Halloysite Nanotubes Composites: Mechanical Robustness and Optical Transmittance
	Graphenic Nanocomposite Barrier Films
	Deposition and Characterization of CNT-polyurethane Nanocomposite Films
	Hardness of Pillared-graphene Nanostructures via Indentation Simulation
	*Invited Paper

Extremely Uniform Epitaxial Growth of Graphene from
Sputtered SiC Films on SiC Substrates
Fuminori Mitsuhashi, Masaya Okada,
Yasunori Tateno, Takashi Nakabayashi,
Masaki Ueno, Hiroyuki Nagasawa,
Hirokazu Fukidome, and Maki Suemitsu
Few-layer Graphene Aqueous Suspensions for Polyurethane
Composite Coatings
Eunice Cunha, Fernando Duarte,
M. Fernanda Proença, and M. Conceição Paiva