

MRS **Advances**

Electronics and Photonics

<https://doi.org/10.1557/adv.2020.340> Published online by Cambridge University Press

MRS Advances: Electronics and Photonics

Associate Editors:

John Stuart McCloy, *Washington State University, USA*
Jeremy Theil, *Mountain View Energy, USA*

Principal Editors:

Howard (Ho Wai) Lee, *Baylor University, USA*
Ryan M. O'Donnell, *U.S. Army Research Laboratory, USA*
Aaswath Raman, *University of California-Los Angeles, USA*
Ning Li, *IBM TJ Watson Research Center, USA*
Barbara Malič, *Jožef Stefan Institute, Slovenia*
Joon Hak Oh, *Seoul National University, South Korea*
Robert Nemanich, *Arizona State University, USA*

MRS Advances Editorial Board:

Editor-in-Chief: David F. Bahr, *Purdue University, USA*
Meenakshi Dutt, *Rutgers University, USA*
Norbert Huber, *HZG (Helmholtz-Zentrum Geesthacht Centre for Materials and Coastal Research), Germany*
Marian Kennedy, *Clemson University, USA*

Praveen Kumar, *Indian Institute of Science, India*
John Stuart McCloy, *Washington State University, USA*
Ruth Schwaiger, *Karlsruhe Institute of Technology, Germany*
Jeremy Theil, *Mountain View Energy, USA*

Materials Research Society Editorial Office, Warrendale, PA, USA:

Ellen W. Kracht, *Publications Manager, Materials Research Society, Warrendale, PA, USA*
Susan Dittrich, *Editorial Associate, Materials Research Society, Warrendale, PA, USA*

Kirby L. Morris, *Editorial and Production Associate, Materials Research Society, Warrendale, PA, USA*
Eileen M. Kiley, *Director of Communications, Materials Research Society, Warrendale, PA, USA*

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 © 2020, 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

ARTICLES

Graphene-based photonic synapse for multi wavelength neural networks 1909

Bicky A. Marquez, Hugh Morison, Zhimu Guo, Matthew Filipovich, Paul R. Prucnal and Bhavin J. Shastri

The Effect of Thermal Annealing on Cobalt Film Properties and Grain Structure 1919

Natalia V. Doubina, Tighe A. Spurlin, Edward C. Opocensky and Jonathan D. Reid

Thin Film Characterization on Cu/SnAg Solder Interface for 3D Packaging Technologies. 1929

Kimberly Beers, Andrew E. Hollowell and G. Bahar Basim

Effects of Very High Workfunction Metals or Metal Alloys (NiCr) on High Switching Speed, HV Schottky Diodes for Mixed Signal or RF ASIC. 1937

J. Pan, A. Gaibrois, M. Marrisply, J. Leung, S. Suko, M. Lee and T. Knight

Schwarzites to schwarzynes: A new class of superdeformable materials 1947

Eliezer Fernando Oliveira and Douglas Soares Galvao

Optical and SHG Measurements of Aminoacids doped ADP NLO crystals 1955

R. Ananda Kumari

Chromatic and Panchromatic Nonlinear Optoelectronic cmosfets for CMOS Image Sensors, Laser Multiplexing, Computing, and Communication 1965

James N. Pan

Phototransistors Based on A Lightly Doped P3HT 1975

Thomas H. Debesay and Sam-Shajing Sun

Nickel nano-dot arrays on silicon substrate fabrication and surface charge distribution 1983

Anupam K.C. and Garrett Merrion

**Solar-Blind Ultraviolet Photodetectors Based on Vertical
Graphene-Hexagonal Boron Nitride Heterostructures. 1993**
Jesse E. Thompson, Darian Smalley and Masahiro Ishigami

**High discharge capacities of Ti-based quasicrystal
electrodes synthesized by mechanical alloying —
RETRACTION. 2003**
Dedetemo Kimilita Patrick, Akito Takasaki and Alicja
Klimkowicz