

PHYSICAL REVIEW B_{TM}

CONDENSED MATTER AND MATERIALS PHYSICS

Editor

LAURENS W. MOLENKAMP

Managing Editor

ANTHONY M. BEGLEY

Associate Editors

MANOLIS ANTONOYIANNAKIS

HARI DAHAL

SARMA KANCHARLA

LUIGI LONGOBARDI

VICTOR VAKARYUK

ATHANASIOS CHANTIS

SUSAN H. FARRANT

ALEXIOS KLIRONOMOS

ASHOT MELIKYAN

JERRY ICBAN DADAP JR.

JASON T. HARALDSEN

ROBERT M. KONIK

BRADLEY RUBIN

Assistant Editor

YAN LI

Senior Editorial Assistant

MARIE RUPOLO

EDITORIAL BOARD

ANDREA ALU
CHE-TING CHAN
MANFRED FIEBIG
PAUL J. KELLY
JOCHEN MANNHART
FREDERIC MILA
JUKKA P. PEKOLA
ROSER VALENTI
QI-KUN XUE

F. ARYASETIWAN
ANDREY V. CHUBUKOV
AKIRA FURUSAKI
TSUYOSHI KIMURA
NADYA MASON
Y. MISHIN
PETER SCHIFFER
GERRIT VAN DER LAAN

R. BERNDT
TOMASZ DIETL
FRANCISCO GUINEA
KARYN LE HUR
I. I. MAZIN
JOEL E. MOORE
I.F. SILVERA
LIEVEN VANDERSYPEN

IMMANUEL FELIX BLOCH
KRISTEN A. FICHTHORN
MARK S. HYBERTSEN
A. I. LICHTENSTEIN
TYREL MCQUEEN
CHRIS PALMSTROM
YAROSLAV TSEKOVNYAK
MARTIN WEGENER

American Physical Society

President SAMUEL H. ARONSON
Speaker of Council NAN PHINNEY
Chief Executive Officer KATE P. KIRBY

One Physics Ellipse
College Park, MD 20740-3844

APS Editorial Office

Directors

Editorial DANIEL T. KULP
Journal Information Systems MARK D. DOYLE
Journal Operations CHRISTINE M. GIACCONE

1 Research Road
Ridge, NY 11961-2701
Phone: (631) 591-4020
Email: prb@aps.org

Web: <http://journals.aps.org/>

Submissions: <http://authors.aps.org/Submissions/>

Member Subscriptions:

APS Membership Department

One Physics Ellipse
College Park, MD 20740-3844
Phone: (301) 209-3280 Fax: (301) 209-0867
Email: membership@aps.org

Institutional Subscriptions:

APS Subscription Services

P.O. Box 41
Annapolis Junction, MD 20701
Toll free: (888) 339-9655
Phone: (301) 617-7809 Email: subs@aps.org

Manuscripts should be submitted electronically in acceptable format (see <http://authors.aps.org/Submissions/>). Submission is a representation that the manuscript has not been published previously and is not currently under consideration for publication elsewhere. An executed APS **copyright-transfer** form must be provided (effective only on acceptance for publication). Information for Contributors and a description of editorial Policies and Practices can be found at <http://journals.aps.org/prb/authors>.

To help defray editorial and production expenses, authors of manuscripts which are not submitted in acceptable electronic format are expected to pay a **publication charge** of \$1445/article, \$900/Rapid Communication, \$330/Comment or Reply. Acceptable formats are REV_TEX (preferred), L_AT_EX, plain T_EX; MS Word; PostScript figures (preferred). **Reprints** are offered for sale to authors.

For additional information regarding the online version of this journal, please visit: <http://journals.aps.org/prb>. Institutional subscribers requesting address changes, filing claims, or requesting additional information, please contact the APS Subscription Services at subs@aps.org. Member subscribers requiring changes, claims or additional information should contact the APS Membership Department at membership@aps.org.

Copyright © 2015 American Physical Society. All rights reserved.

Physical Review B_{TM} is a trademark of the American Physical Society.

Rights and Permissions: <http://journals.aps.org/copyrightFAQ.html>

Copying: No part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without the written permission of the publisher, except as stated below. Single copies of individual articles may be made for private use or research. Authorization is given to copy articles beyond the use permitted by Sections 107 and 108 of the U.S. Copyright Law, provided the copying fee of \$25.00 per copy per article is paid to the Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923, USA.

Reproduction of an entire article in a reprint collection, or for advertising or promotional purposes, or republication in any form requires permission from APS. Permission must be sought via Copyright Clearance Center (CCC) RightsLink system. To request permission to republish, refer to the Reuse and Permissions link that can be found on each APS article page and provide the requested information.

Other Use: Permission is granted to quote from the journal with the customary acknowledgment of the source. Permission must be sought using the Copyright Clearance Center (CCC) RightsLink system. To request permission to reproduce a figure, table, or excerpt of an article refer to the Reuse and Permissions link that can be found on each APS article page and provide the requested information. Authorization for private use or research does not extend to systematic or multiple reproduction, to copying for promotional purposes, to distribution in any format, or to republication in any form. In all such cases, specific permission from APS must be obtained.

Physical Review B_{TM} [ISSN: 1098-0121 (print), 1550-235X (online); CODEN PRBMDO; printed in USA] is published four times a month by the American Physical Society, 1 Research Road, Ridge, NY 11961-2701.

POSTMASTER: Send address changes to *Physical Review B_{TM}*, APS Subscription Services, P.O. Box 41, Annapolis Junction, MD 20701. The 2015 print + online base price is \$8195. Periodicals postage rates are paid at College Park, MD, and additional mailing offices.