

PROCEEDINGS OF SPIE

Organic Field-Effect Transistors XI

Zhenan Bao
Iain McCulloch
Editors

13–15 August 2012
San Diego, California, United States

Sponsored and Published by
SPIE

Volume 8478

Proceedings of SPIE 0277-786X, V.8478

SPIE is an international society advancing an interdisciplinary approach to the science and application of light.

Organic Field-Effect Transistors XI, edited by Zhenan Bao, Iain McCulloch, Proc. of SPIE Vol. 8478
847801 · © 2012 SPIE · CCC code: 0277-7866/12/\$18 · doi: 10.1117/12.2011023

Proc. of SPIE Vol. 8478 847801-1

The papers included in this volume were part of the technical conference cited on the cover and title page. Papers were selected and subject to review by the editors and conference program committee. Some conference presentations may not be available for publication. The papers published in these proceedings reflect the work and thoughts of the authors and are published herein as submitted. The publisher is not responsible for the validity of the information or for any outcomes resulting from reliance thereon.

Please use the following format to cite material from this book:

Author(s), "Title of Paper," in *Organic Field-Effect Transistors XI*, edited by Zhenan Bao, Iain McCulloch, Proceedings of SPIE Vol. 8478 (SPIE, Bellingham, WA, 2012) Article CID Number.

ISSN: 0277-786X

ISBN: 9780819491954

Published by

SPIE

P.O. Box 10, Bellingham, Washington 98227-0010 USA

Telephone +1 360 676 3290 (Pacific Time) · Fax +1 360 647 1445

SPIE.org

Copyright © 2012, Society of Photo-Optical Instrumentation Engineers.

Copying of material in this book for internal or personal use, or for the internal or personal use of specific clients, beyond the fair use provisions granted by the U.S. Copyright Law is authorized by SPIE subject to payment of copying fees. The Transactional Reporting Service base fee for this volume is \$18.00 per article (or portion thereof), which should be paid directly to the Copyright Clearance Center (CCC), 222 Rosewood Drive, Danvers, MA 01923. Payment may also be made electronically through CCC Online at copyright.com. Other copying for republication, resale, advertising or promotion, or any form of systematic or multiple reproduction of any material in this book is prohibited except with permission in writing from the publisher. The CCC fee code is 0277-786X/12/\$18.00.

Printed in the United States of America.

Publication of record for individual papers is online in the SPIE Digital Library.



SPIDigitalLibrary.org

Paper Numbering: Proceedings of SPIE follow an e-First publication model, with papers published first online and then in print and on CD-ROM. Papers are published as they are submitted and meet publication criteria. A unique, consistent, permanent citation identifier (CID) number is assigned to each article at the time of the first publication. Utilization of CIDs allows articles to be fully citable as soon as they are published online, and connects the same identifier to all online, print, and electronic versions of the publication. SPIE uses a six-digit CID article numbering system in which:

- The first four digits correspond to the SPIE volume number.
- The last two digits indicate publication order within the volume using a Base 36 numbering system employing both numerals and letters. These two-number sets start with 00, 01, 02, 03, 04, 05, 06, 07, 08, 09, 0A, 0B ... 0Z, followed by 10-1Z, 20-2Z, etc.

The CID Number appears on each page of the manuscript. The complete citation is used on the first page, and an abbreviated version on subsequent pages. Numbers in the index correspond to the last two digits of the six-digit CID Number.

Contents

v *Conference Committee*

MATERIALS II

- 8478 07 **Recent advances in the reliability of OTFTs (Invited Paper)** [8478-6]
P. Too, H. Vandekerckhove, G. Fichet, M. J. Harding, M. J. Banach, Plastic Logic Ltd. (United Kingdom)
- 8478 08 **Development of TFT device stack for integration of organic semiconductors into flexible displays (Invited Paper)** [8478-7]
T. G. Bäcklund, R. Bhintade, P. Wierzchowiec, L.-W. Tan, I. Afonina, S. Bain, A. Malandraki, P. Brookes, G. Lloyd, S. Tierney, M. James, Merck Chemicals Ltd. (United Kingdom)
- 8478 09 **High-mobility ambipolar polymer transistors: properties and function** [8478-9]
A. J. Kronemeijer, E. Gili, Univ. of Cambridge (United Kingdom); M. Shahid, Imperial College London (United Kingdom); J. Rivnay, A. Salleo, Stanford Univ. (United States); M. Heeney, Imperial College London (United Kingdom); H. Sirringhaus, Univ. of Cambridge (United Kingdom)

MORPHOLOGY I

- 8478 0C **Solution-phase growth of organic single-crystal arrays** [8478-12]
O. Goto, S. Tomiya, Y. Murakami, A. Shinozaki, A. Toda, Sony Corp. (Japan); J. Kasahara, Hokkaido Univ. (Japan); D. Hobar, Sony Corp. (Japan)

MATERIALS AND DEVICES I

- 8478 0L **Transient analysis of electrolyte-gated organic field-effect transistors** [8478-22]
D. Tu, L. Kergoat, X. Crispin, M. Berggren, R. Forchheimer, Linköping Univ. (Sweden)

DEVICES II

- 8478 10 **Material properties and field-effect transistor characteristics of hybrid organic/graphene active layers** [8478-39]
T.-J. Ha, J. Lee, S. F. Chowdhury, D. Akinwande, A. Dodabalapur, The Univ. of Texas at Austin (United States)

8478 13

N-type self-assembled monolayer field-effect transistors [8478-19]

A. Ringk, Univ. of Bayreuth (Germany) and Dutch Polymer Institute (Netherlands); X. Li, Holst Ctr., TNO (Netherlands) and Eindhoven Univ. of Technology (Netherlands);
F. Gholamrezaie, Dutch Polymer Institute (Netherlands), Philips Research Nederland B.V. (Netherlands), and Univ. of Groningen (Netherlands); E. C. P. Smits, Holst Ctr., TNO (Netherlands); A. Neuhold, A. Moser, Graz Univ. of Technology (Austria); G. H. Gelinck, Holst Ctr., TNO (Netherlands); R. Resel, Graz Univ. of Technology (Austria); D. M. de Leeuw, Philips Research Nederland B.V. (Netherlands) and Univ. of Groningen (Netherlands); P. Strohrigl, Univ. of Bayreuth (Germany)

Author Index

Conference Committee

Symposium Chair

Zakya H. Kafafi, National Science Foundation (United States)

Conference Chairs

Zhenan Bao, Stanford University (United States)

Iain McCulloch, Imperial College London (United Kingdom)

Session Chairs

- 1 Materials I
Iain McCulloch, Imperial College London (United Kingdom)
- 2 Materials II
Zhenan Bao, Stanford University (United States)
- 3 Morphology I
Aram Amassian, King Abdullah University of Science and Technology (Saudi Arabia)
- 4 Devices I
Unyong Jeong, Yonsei University (Korea, Republic of)
- 5 Materials and Devices I
Chan Eon Park, Pohang University of Science and Technology (Korea, Republic of)
- 6 Morphology II
Stefan C. Mannsfeld, SLAC National Accelerator Laboratory (United States)
- 7 Morphology and Devices II
Hanying Li, Zhejiang University (China)

