MATERIALS RESEARCH SOCIETY SYMPOSIUM PROCEEDINGS VOLUME 1360

Synthesis and Processing of Organic and Polymeric Materials for Semiconductor Applications

April 25-29, 2011 San Francisco, California, USA

Printed from e-media with permission by:

Curran Associates, Inc. 57 Morehouse Lane Red Hook, NY 12571 www.proceedings.com

ISBN: 978-1-62748-201-1

Some format issues inherent in the e-media version may also appear in this print version.

©Materials Research Society 2011

This reprint is produced with the permission of the Materials Research Society and Cambridge University Press.

This publication is in copyright, subject to statutory exception and to the provisions of relevant collective licensing agreements. No reproduction of any part may take place without the written permission of Cambridge University Press.

Cambridge University Press Cambridge, New York, Melbourne, Madrid, Cape Town, Singapore, São Paulo, Delhi, Tokyo, Mexico City

Cambridge University Press 32 Avenue of the Americas, New York, NY 10013-2473, USA www.cambridge.org

Materials Research Society 506 Keystone Drive, Warrendale, PA 15086 www.mrs.org

CODEN: MRSPDH

ISBN: 978-1-62748-201-1

Cambridge University Press has no responsibility for the persistence or accuracy of URLs for external or third-part Internet Web sites referred to in this publication and does not guarantee that any content on such Web sites is, or will remain, accurate or appropriate.

Additional copies of this publication are available from:

Curran Associates, Inc. 57 Morehouse Lane Red Hook, NY 12571 USA Phone: 845-758-0400 Fax: 845-758-2634

Email: curran@proceedings.com Web: www.proceedings.com



TABLE OF CONTENTS

Zinc and Zinc Oxide Nanowires Grown on PEDOT:PSS/SiO ₂ Conductive Polymer Thin Films by Vapor Phase Transport Deposition Matthew P. Chamberlin, Costel Constantin	1
Materials for Deep Blue Organic Light Emitting Devices with Ultra High Thermal Stability and Charge Mobility	7
Temperature Dependence of HOMO-LUMO Levels and Open Circuit Voltage for P3HT:PCBM Organic Solar Cells	14
Charge Transport Enhancement Via Air-mediated Self-organization in Polymer Semiconductors	18
Effects of Substituted Side Chains on the Optical and Electrical Properties of D-A Conjugated Copolymers	24
Early-Effect like Behavior in Space Charge Regions of Organic Bulk- Heterojunction Photodiodes	30
Luminance Degradation and Recovery Studies in Alq ₃ Based Organic Light Emitting Diodes	36
Solid Surface Free Energy Analysis Using Inkjet Droplets	42
Creation of Face-to-Face π-π Stacking of Fused Acene Backbones by Aryl- perfluoroaryl Interactions and Induction of Charge Transport Properties Toshihiro Okamoto, Katsumasa Nakahara, Akinori Saeki, Shu Seki, Joon H. Oh, Hylke B. Akkerman, Zhenan Bao, Kazumoto Miwa, Junichi Takeya, Yutaka Matsuo	48
Author Index	