

**MATERIALS RESEARCH SOCIETY**  
**SYMPOSIUM PROCEEDINGS VOLUME 1747**

# **Flame and High-Temperature Synthesis of Functional Nanomaterials—Fundamentals and Applications**

November 30 – December 5, 2014  
Boston, Massachusetts, USA

**Printed from e-media with permission by:**

Curran Associates, Inc.  
57 Morehouse Lane  
Red Hook, NY 12571  
[www.proceedings.com](http://www.proceedings.com)

**ISBN: 978-1-5108-0624-5**

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

©Materials Research Society 2015

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](http://www.cambridge.org)

Materials Research Society  
506 Keystone Drive, Warrendale, PA 15086  
[www.mrs.org](http://www.mrs.org)

CODEN: MRSPDH

ISBN: 978-1-5108-0624-5

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](mailto:curran@proceedings.com)  
Web: [www.proceedings.com](http://www.proceedings.com)

CURRAN ASSOCIATES INC.  
**proceedings**  
.com

## TABLE OF CONTENTS

<b>Carbon-TiO<sub>2</sub> Nanostructures: Flame Synthesis and Characterization</b> .....	1
<i>Gianluigi De Falco, Mario Commodo, Paola Pedata, Patrizia Minutolo, Andrea D'Anna</i>	
<b>New Perspectives in Monitoring the Flame Synthesis of Iron Oxide Nanoparticles: Addressing Solid and Gas-Phase Diagnostics Challenges</b> .....	7
<i>Igor Rahinov, Marina Poliak, Alexey Fomin, Vladimir Tsionsky, Sergey Cheskis</i>	
<b>Effects of CO<sub>2</sub> on Carbon Nanotube Formation from Thermal Decomposition Ethylene</b> .....	13
<i>Chuanwei Zhuo, Fariba Khanshan, Richard West, Henning Richter, Yiannis A. Levendis</i>	
<b>Indium Tin Oxide Conductive Nanowires Formed by Magnetron Sputtering</b> .....	19
<i>Naoki Yamamoto, Kirihiko Morisawa</i>	
<b>Flame Spray Pyrolysis of Electrode Materials for Energy Applications</b> .....	25
<i>Paul I. Dahl, Magnus S. Thomassen, Luis C. Colmenares, Alejandro O. Barnett, Scott Lomas, Per E. Vullum, Sidsel M. Hanetho, Tommy Mokkelbost</i>	
<b>Synthesis of Nanocarbons Using a Large Volume AC Plasma Reactor</b> .....	31
<i>M. Hamady, D. Sheppard, K. Seddighi, A. Sarawagi, B. Scott, K. Wilcox, A. Gerber, L. P. F. Chibante</i>	
<b>Roll-to-Roll Coating by Liquid Flame Spray Nanoparticle Deposition</b> .....	37
<i>Jyrki M. Mäkelä, Janne Haapanen, Mikko Aromaa, Hannu Teisala, Mikko Tuominen, Milena Stepien, Jarkko J. Saarinen, Martti Toivakka, Jurkka Kuusipalo</i>	
<b>Author Index</b>	