

Materials for Catalysis in Energy

MATERIALS RESEARCH SOCIETY
SYMPOSIUM PROCEEDINGS VOLUME 1446

Materials for Catalysis in Energy

Symposium held April 9–13, 2012, San Francisco, California, U.S.A.

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Materials Research Society
Warrendale, Pennsylvania



CAMBRIDGE UNIVERSITY PRESS
Cambridge, New York, Melbourne, Madrid, Cape Town,
Singapore, São Paulo, Delhi, Mexico City

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

www.cambridge.org
Information on this title: www.cambridge.org/9781605114231

Materials Research Society
506 Keystone Drive, Warrendale, PA 15086, USA
<http://www.mrs.org>

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First published 2012

CODEN: MRSPDH

ISBN: 978-1-60511-423-1 Hardback

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*Invited Paper

PREFACE

Growing demand for energy and the need to reduce our society's carbon footprint calls for transformative measures to increase efficiency in energy consumption and sustainable methods of energy production and storage. Novel materials will be key to these transformative technologies by acting as catalysts and facilitating desired chemical transformations. It is becoming increasingly evident that the integration of materials science perspectives into catalyst discovery, synthesis, and characterization will provide new opportunities for novel catalytic materials in energy-related applications.

Symposium U of the 2012 MRS Spring Meeting in San Francisco, California, "Materials for Catalysis in Energy," was held April 10–13. The objective of the organizers was to bring together researchers from materials science, chemical synthesis, heterogeneous catalysis, electrocatalysis, and photocatalysis to highlight recent progress and discuss challenges and opportunities in the materials aspect of catalysis research and development for energy applications. This symposium was the second one in the recent history of MRS meetings with a particularly strong focus on the materials aspect of catalysis; the first one was pioneered and organized by Sheng Dai, Harold H. Kung, Jun Liu, and Chung-Yuan Mou at the 2009 MRS Fall Meeting in Boston, Massachusetts.

Close to 200 abstracts were received and about 150 papers were presented in Symposium U in Spring 2012, demonstrating the significant interest from the broader catalysis community in this topical area. This volume contains a cross section of papers presented in the symposium, and highlights the interdisciplinary nature of this research area. We thank the authors, the reviewers, and the MRS staff in making this volume possible and we hope you enjoy reading these outstanding contributions.

De-en Jiang
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Robert M. Rioux

July 2012

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