

---

# **Physical and Analytical Electrochemistry, Electrocatalysis, and Photoelectrochemistry General Session**

---

**Editors:**

<b>A. Surovec</b>	<b>W.-Y. Lee</b>
<b>P. Kulesza</b>	<b>D. Cliffel</b>
<b>S. D. Minteer</b>	<b>T. Tatsuma</b>
<b>P. B. Atanassov</b>	<b>T. Torimoto</b>
<b>B. Chin</b>	<b>T. Ohno</b>

**Sponsoring Divisions:****Physical and Analytical Electrochemistry****Sensor**Published by  
**The Electrochemical Society**65 South Main Street, Building D  
Pennington, NJ 08534-2839, USA

tel 609 737 1902

fax 609 737 2743

www.electrochem.org

**ecs**transactions™**Vol. 75, No. 48**

---

Copyright 2017 by The Electrochemical Society.  
All rights reserved.

This book has been registered with Copyright Clearance Center.  
For further information, please contact the Copyright Clearance Center,  
Salem, Massachusetts.

Published by:

The Electrochemical Society  
65 South Main Street  
Pennington, New Jersey 08534-2839, USA

Telephone 609.737.1902  
Fax 609.737.2743  
e-mail: [ecs@electrochem.org](mailto:ecs@electrochem.org)  
Web: [www.electrochem.org](http://www.electrochem.org)

ISSN 1938-6737 (online)  
ISSN 1938-5862 (print)  
ISSN 2151-2051 (cd-rom)

ISBN 978-1-62332-439-1 (CD-ROM)  
ISBN 978-1-60768-797-9 (PDF)

Printed in the United States of America.

---

**ECS Transactions, Volume 75, Issue 48**

Physical and Analytical Electrochemistry, Electrocatalysis,  
and Photoelectrochemistry General Session

**Table of Contents**

Preface	iii
Electrocatalytic Reduction of CO <sub>2</sub> on Cu and Au/W Electrode Surfaces: Empirical (DEMS) Confirmation of Computational (DFT) Predictions <i>A. Javier, J. H. Baricuatro, Y. G. Kim, M. P. Soriaga</i>	1
Electrochemical Reduction of CO <sub>2</sub> on Copper Oxidized by Electrochemical Methods <i>S. D. Giri, A. Sarkar, S. Mahajani, A. K. Suresh</i>	19
Detection of Moisture Adsorption on Joining Surface Using Static Electricity Distribution <i>K. Kikunaga, N. Terasaki</i>	33
Validation of Mixed Potential Theory Using Formic Acid and Ferric Ion as a Redox Couple <i>N. L. Chauhan, V. A. Juvekar, S. M. Mahajani, A. K. Suresh, A. Sarkar</i>	39
Electrochemical Approach to Evaluate the Wettability of Rough Surfaces <i>B. Zahiri, P. K. Sow, C. Haow Kung, W. Mérida</i>	49
Multiscale Computational Study of Electronic Structure and Properties of Electrochemical Nano-Systems of Perovskites for Photovoltaic Application <i>S. Gusarov, K. Sapelnikova, O. Kobryn, K. Shankar</i>	59
Author Index	69