
Materials for Low Temperature Electrochemical Systems 9

Editors:

M. Shao

G. Wu

Sponsoring Division:

 Energy Technology



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

ECStransactions™

Vol. 111, No. 5

Copyright 2023 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
Web: www.electrochem.org

ISSN 1938-6737 (online)

ISBN 978-1-62332-679-1 (PDF)

Printed in the United States of America.

Table of Contents

<i>Preface</i>	<i>iii</i>
Insights into the Structure - Composition - Activity Relationship of PtCo Alloy Nanoparticles towards Oxygen Reduction Reaction (ORR) <i>M. Janssen, J. Klein, A. Dworzak, S. Blaseio, M. Oezaslan</i>	3
Ultra-Small Ceria Nanocrystals at Carbon Surface Synthesized by Ultrasound Sonication: A Study of Highly Active Platinum-Cerium Bifunctional Catalysts for Methanol Oxidation and Oxygen Reduction <i>H. Q. V. Nguyen, J. Nerut, H. Kasuk, T. Thomberg, T. Romann, J. Aruväli, E. Lust</i>	17
Fe and Zn Addition Effects of Ti Oxide-Based Electrocatalyst on Catalytic Activity for Oxygen Reduction Reaction <i>K. Matsuzawa, M. Obata, Y. Takeuchi, Y. Ohgi, T. Nagai, R. Monden, A. Ishihara</i>	29
Impact of Aluminum Modification on the Dielectric Properties of Graphene Oxide Membrane: Different Al Source <i>Y. Y. Stehle</i>	35
Developing Reversal-Tolerant Anode for PEFCs by Introducing Iridium-Based Layered Structure <i>L. Manjunatha, M. Nagayama, A. Hayashi, K. Sasaki</i>	41
Preparation of Membrane Electrode Assemblies Using Waste Tire Derived Carbon Supported Platinum Catalyst <i>A. Raudsepp, R. Jäger, J. Nerut, P. Valk, P. Teppor, M. Koppel, J. Aruväli, J. Laanemäe, W. Lobjakas, E. Lust</i>	51
Waste Tire Derived Carbon Support for Non-Platinum-Group Metal Catalyst Materials for Oxygen Reduction Reaction in Alkaline Medium <i>J. Laanemäe, R. Jäger, P. Teppor, O. Volobujeva, E. Lust</i>	63

Valorization of Naturally Abundant Low-Value Peat into Highly Active Non-Platinum Group Metal Oxygen Reduction Catalysts <i>P. Teppor, R. Jäger, J. Nerut, M. Koppel, J. Aruväli, O. Volobujeva, E. Lust</i>	73
Development of Carbon-Based Integrated Electrode (GDL + Catalyst Layer) Using the Electrospinning Deposition Method <i>R. Asif, S. Okuma, M. Nagayama, K. Sasaki, A. Hayashi</i>	81
The Utilization of Platinum Catalysts Deposited on Carbon Support Synthesized from Coffee Grounds in a Polymer Electrolyte Membrane Fuel Cell <i>S. Simson, J. Nerut, M. Härmas, P. Valk, P. Teppor, R. Palm, M. Koppel, J. Aruväli, O. Korjus, O. Volobujeva, M. Månsson, E. Lust</i>	93
Synthesis of Proton Exchange Membrane Fuel Cell Catalyst and Optimization of Membrane Electrode Assembly Preparation Parameters <i>A. M. Allikmäe, R. Telpt, J. Nerut, P. Teppor, P. Valk, M. Koppel, J. Aruväli, E. Lust</i>	105
Author Index	117