
Intercalation Compounds for Rechargeable Batteries

Editor:

M. M. Doeff

Lawrence Berkeley National Laboratory
Berkeley, California, USA

Sponsoring Divisions:



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. 58, No. 14

Copyright 2014 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)
ISSN 1938-5862 (print)
ISSN 2151-2051 (cd-rom)

ISBN 978-1-62332-137-6 (Softcover)
ISBN 978-1-60768-492-3 (PDF)

Printed in the United States of America.

ECS Transactions, Volume 58, Issue 14
Intercalation Compounds for Rechargeable Batteries

Table of Contents

Preface iii

Chapter 1
Cathode Materials

Investigations into Structure and Chemistry of 1D, 2D and 3D Structured Vanadium Oxide Nanomaterials for Li-Ion Batteries 3
E. Armstrong, M. Osiak, C. Glynn, C. O'Dwyer

Chapter 2
Graphite/Graphene and Techniques

Study of the Electrochemical Behavior of Dual-Graphite Cells Using Ionic Liquid-Based Electrolytes 15
S. Rothermel, P. Meister, O. Fromm, J. Huesker, H. W. Meyer, M. Winter, T. Placke

On a New Room Temperature and Solvent Free Carbon Coating Process for Battery Electrode Materials: Application to Selected Compounds 27
A. Ponrouch, M. R. Palacin

Chapter 3
Poster Session

In Situ XRD Study of the Phase Evolution in $\text{Li}_x\text{Mn}_{1.5}\text{Ni}_{0.5}\text{O}_4$ as 4.7-Volt Positive Electrode Materials for Li-Ion Batteries 35
W. Zhu, D. Liu, J. Trottier, P. Hovington, C. Gagnon, A. Guerfi, K. Zaghib, A. Mauger, H. Groult, C. M. Julien

Reactivity of Electrolyte with the Surface of 5-Volts Positive Electrode Materials for Li-Ion Batteries <i>A. Guerfi, J. Trottier, C. Gagnon, D. Liu, P. Hovington, K. Zaghib, A. Mauger, H. Groult, C. M. Julien</i>	41
Bulk and Surface Modification of $\text{LiMn}_{1.5}\text{Ni}_{0.5}\text{O}_4$ as 4.7-Volt Positive Electrode Material for Li-Ion Batteries <i>D. Liu, J. Hamel-Paquet, J. Trottier, F. Barry, V. Gariépy, C. Gagnon, P. Hovington, A. Guerfi, K. Zaghib, A. Mauger, H. Groult, C. M. Julien</i>	47
Study of the Electrochemical Intercalation of Different Anions from Non-Aqueous Electrolytes into a Graphite-Based Cathode <i>O. Fromm, P. Meister, X. Qi, S. Rothermel, J. Huesker, H. W. Meyer, M. Winter, T. Placke</i>	55
Effect of the Stirring during the Hydrothermal Synthesis of C-LiFePO ₄ <i>K. Vediappan, A. Guerfi, V. Gariépy, G. P. Demopoulos, P. Hovington, J. Trottier, A. Mauger, K. Zaghib, C. M. Julien</i>	67
Effect of the Carbonization on the LiFePO ₄ Particles of Positive Electrode for Rechargeable Lithium Batteries <i>V. Gariépy, K. Vediappan, P. Hovington, J. Trottier, C. Gagnon, F. Barry, A. Guerfi, K. Zaghib, A. Mauger, H. Groult, C. M. Julien</i>	73
Structural Analysis and Electrochemical Studies of Carbon Coated $\text{Li}_4\text{Ti}_5\text{O}_{12}$ Particles Used as Anode for Lithium-Ion Battery <i>X. Sun, M. Hegde, J. Wang, Y. Zhang, J. Liao, P. V. Radovanovic, B. Cui</i>	79
Potential Step Study of Intercalation Processes <i>Y. Y. Gerasimenko, S. V. Kucherenko, S. M. Lipkin, M. S. Lipkin</i>	89
Author Index	95