

---

# Mass Transport Phenomena in Localized Corrosion

---

## Editors:

### **S. Lillard**

The University of Akron  
Akron, Ohio, USA

### **R. Kelly**

University of Virginia  
Charlottesville, Virginia, USA

## Sponsoring Division:



**Corrosion**



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

**ecstransactions**™

**Vol. 58, No. 31**

---

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](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 978-1-62332-156-7 (Softcover)  
ISBN 978-1-60768-512-8 (PDF)

Printed in the United States of America.

---

*ECS Transactions, Volume 58, Issue 31*  
Mass Transport Phenomena in Localized Corrosion

**Table of Contents**

<i>Preface</i>	<i>iii</i>
Mass Transport and Electrochemical Phenomena Influencing the Pitting and Repassivation of Stainless Steels in Neutral Chloride Media <i>J. Srinivasan, M. J. McGrath, R. G. Kelly</i>	1
Effect of Applied Stress on Dissolution Morphology and Pit Initiation Behavior of MnS Inclusion in Stainless Steel <i>N. Shimahashi, I. Muto, Y. Sugawara, N. Hara</i>	13
Chloride Ion Concentration Effects on Passivity Breakdown in Magnesium <i>G. Williams, H. Dafydd, R. Subramanian</i>	23
Modeling the Influence of Microstructure on Corrosion Pit Growth and Resulting Stress Concentration <i>N. Kota, S. M. Qidwai, V. G. DeGiorgi</i>	35
Author Index	45