

## Publications, Links and Research that use the MMA 900/910

### Impedance Spectroscopy of Arrays

K.R. Cooper, M. Casulli, M. Smith, and D. Johnson, "A High Measurement Channel Density Impedance Array Analyzer: Instrumentation and Implementation Approaches," in *Impedance Techniques: Diagnostics and Sensing Applications*, V. Lvovich, P. Vanysek, D. Hansen, M. Orazem, Eds., 216<sup>th</sup> ECS Meeting, 4-9 October 2009, Vienna, Austria, *ECS Transactions*, **25** (32), 35-48 (2010)

K.R. Cooper, M. Smith and D. Johnson, "Development and Demonstration of Measurement-Time Efficient Methods for Impedance Spectroscopy of Electrode and Sensor Arrays," *Sensors*, **8**, 1774-1796 (2008), download at <http://www.mdpi.org/sensors/list08.htm#issue3>

K.R. Cooper, M. Smith, J.R. Scully, N.D. Budiansky, "Development of A Multielectrode Array Impedance Analyzer for Corrosion Science and Sensors," *Corrosion 2006 Conference (National Association of Corrosion Engineers: Houston, TX)*, Paper No. 06674 (2006)

### Sensors and Sensor Arrays

W.A. Steen, C.L. Stork and F.D. Wall, "Monosacharide Sensing Based on Multivariate Analysis of Voltammetric Data Acquired from a Pt:Ru Electrode Array," *ECS Transactions*, **6**, 13-27 (2008)

W.A. Steen and C. Stork, "Multivariate Techniques for Identifying, Understanding and Predicting Complex Electrochemical Behavior from Electrode Arrays," *Sensor Arrays and Multi-Dimensional Sensor Systems*, 212<sup>th</sup> ECS Meeting, Washington, DC, 7-12 October 2007, Abstract #1559

### Corrosion Science and Corrosion Inhibitors

F.D. Wall, M.A. Martinez, C.M. Johnson, J.C. Barbour, N. Missert, R.G. Copeland, "Does anything pin the pitting behavior of aluminum?" *Symposium on Corrosion and Protection of Light Metal Alloys*, 204<sup>th</sup> Meeting of the Electrochemical Society, 12-16 October 2003, Orlando, FL, **PV2003-23**, 1-11 (2004)

F.D. Wall, M.A. Martinez, "A statistics-based approach to studying aluminum pit initiation. Intrinsic and defect-driven pit initiation phenomena," *Journal of the Electrochemical Society* **150** (4), B146-B157 (2003)

H. Ha, C. Taxén, H. Cong and J.R. Scully, "Effect of Applied Potential on Pit Propagation in Copper as Function of Water Chemistry," *Journal of the Electrochemical Society*, **159**, C59-C73 (2012)

H. Cong and J.R. Scully, "Use of Coupled Multielectrode Arrays to Elucidate the pH Dependence of Copper Pitting in Potable Water," *Journal of the Electrochemical Society*, **157**, C36-C46 (2010)

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H. Cong, N.D. Budiansky, H. Michels and J.R. Scully, "Use of Coupled Electrode Arrays to Elucidate Copper Pitting as a Function of Potable Water Chemistry," *ECS Transactions*, **3**, 531-544 (2007)

N.D. Budiansky, J.L. Hudson, and J.R. Scully, "Origins of Persistent Interaction among Localized Corrosion Sites on Stainless Steel," *Journal of the Electrochemical Society* **151** (4), B233-B243 (2004)

N.D. Budiansky, F. Bocher, H. Cong, M.F. Hurley, and J.R. Scully, "Use of Coupled Multi-Electrode Arrays to Advance the Understanding of Selected Corrosion Phenomena," *Corrosion 2006 Conference (National Association of Corrosion Engineers: Houston, TX)*, Paper No. 06677 (2006)

W. Zhang, B. Hurley, and R.G. Buchheit, "Characterization of Chromate Conversion Coating Formation and Breakdown Using Electrode Arrays," *Journal of the Electrochemical Society* **149** (8), B357-B365 (2002)

Y. Yoon and R.G. Buchheit, "The Formation and Breakdown of Chromate Conversion Coatings on Al-Zn-Mg-Cu Alloys using Electrode Arrays," *Symposium on Corrosion and Protection of Light Metal Alloys*, 204<sup>th</sup> Meeting of the Electrochemical Society, 12-16 October 2003, Orlando, FL, **PV2003-23**, 226-235 (2004)

Y. Kim and R.G. Buchheit, "Electrochemical Characterization of Passivity and Pitting in Al-Cu Solid Solutions," *Symposium on Corrosion and Protection of Light Metal Alloys*, 204<sup>th</sup> Meeting of the Electrochemical Society, 12-16 October 2003, Orlando, FL, **PV2003-23**, 19-28 (2004)

Y. Kim, R.G. Buchheit and P.G. Kotula, "Effect of alloyed Cu on localized corrosion susceptibility of Al-Cu solid solution alloys - Surface characterization by XPS and STEM," *Electrochimica Acta*, **55**, 7367-7375 (2010)

Y. Kim and R.G. Buchheit, "A characterization of the inhibiting effect of Cu on metastable pitting in dilute Al-Cu solid solution alloys," *Electrochimica Acta*, **52**, 2437-2446 (2007)

F. Wong, "The Effect of Alloy Composition on the Localized Corrosion Behavior of Ni-Cr-Mo Alloys," PhD dissertation, Ohio State University, 2009, download at [http://rave.ohiolink.edu/etdc/view?acc\\_num=osu1237842767](http://rave.ohiolink.edu/etdc/view?acc_num=osu1237842767)

B.D. Chambers, S.R. Taylor and M.W. Kendig, "Rapid Discovery of Corrosion Inhibitors and Synergistic Combinations Using High-Throughput Screening Methods," *Corrosion* **61** (5), 480-489 (2005)

B.D. Chambers and S.R. Taylor, "Multiple Electrode Methods to Massively Parallel Test Corrosion Inhibitors for AA2024-T3," *Corrosion 2006 Conference (National Association of Corrosion Engineers: Houston, TX)*, Paper No. 06678 (2006)

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F. Bocher, F.J. Presuel-Moreno, N.D. Budiansky and J. Scully, "Coupled Multi-Electrode Investigation of Crevice Corrosion of 316 Stainless Steel and NiCrMo Alloy 625," *ECS Transactions*, **3**, 105-123 (2007)

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F. Gui, J. James and N. Sridhar, "Corrosion Study of Carbon Steel in Biodiesel and Water Mixture Using Multielectrode Array," *Corrosion*, **68**, 827-834 (2012).

L. Yang, K.T. Chiang, P.K. Shukla and N. Shiratori, "Internal Current Effects on Localized Corrosion Rate Measurements Using Coupled Multielectrode Array Sensors," *Corrosion*, **66**, 115005-115012 (2010).

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T.E. Lister and P.J. Pinhero, "Microelectrode Array Microscopy: Investigation of Dynamic Behavior of Localized Corrosion at Type 304 Stainless Steel Surfaces," *Analytical Chemistry*, **77**, 2601-2607 (2005)

Idaho National Engineering and Environmental Laboratory, download at <http://www.inl.gov/materialscience/biocorrosion/meam.shtml>

## Publications, Links and Research that use the MMA 900/910

### Combinatorial Electrochemistry and Materials Science

Y. Zhang and P.J. McGinn, "Combinatorial screening for methanol oxidation catalysts in alloys of Pt, Cr, Co and V," *Journal of Power Sources*, **206**, 29-36 (2012)

M.K. Jeon, J.S. Cooper and P.J. McGinn, "Methanol electro-oxidation by a ternary Pt–Ru–Cu catalyst identified by a combinatorial approach," *Journal of Power Sources*, **185**, 913-916 (2008)

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J.S. Cooper, P.J. McGinn, "Combinatorial screening of thin film electrocatalysts for a direct methanol fuel cell anode," *Journal of Power Sources*, **163**, 330-338 (2006)

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Dalhousie University: Design and Testing of Sixty-four Channel Combinatorial Electrochemical Cell, download at <http://fizz.phys.dal.ca/~dahn/64combicell.html>

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M.D. Fleischauer, J.M. Topple and J.R. Dahn, "Combinatorial Investigations of Si-M (M = Cr + Ni, Fe, Mn) Thin Film Negative Electrode Materials," *Electrochemical and Solid-State Letters*, **8**, A137-A140 (2005)

T.D. Hatchard, J.R. Dahn, "Study of the Electrochemical Performance of Sputtered Si<sub>1-x</sub>Sn<sub>x</sub> Films," *Journal of the Electrochemical Society*, **151**, A1628-A1635 (2004)

M.D. Fleischauer, J.R. Dahn, "Combinatorial Investigations of the Si-Al-Mn System for Li-Ion Battery Applications," *Journal of the Electrochemical Society*, **151**, A1216-A1221 (2004)

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