

5th Workshop on Scanning Electrochemical Microscopy
Blue Mountain Lake, NY
August 24 – 28, 2008
Agenda

Sunday - August 24, 2008

6:00pm - **Welcome Reception** – Main Lodge

Monday - August 25, 2008

7:30am **Breakfast** – Main Lodge

8:15am-8:20am **Opening Remarks**

8:20am-9:00am **Allen J. Bard**, The University of Texas at Austin
The Application of SECM to Studies of Photocatalysts and Intermediates on Electrode Surfaces

9:05am-9:45am **Julie Macpherson**, The University of Warwick
High Resolution Electrochemical Imaging Reveals the Activity of Conducting Diamond

9:50am-10:30am **Cindy Zoski**, New Mexico State University
The Application of SECM to Studies of Oxygen Reduction Catalysts and Comparison with RDE Experiments

10:35am-11:15am **Wolfgang Schuhmann**, Ruhr-Universität Bochum
Frequency-Dependent Alternating-Current Scanning Electrochemical Microscopy (4D AC-SECM) for Local Visualisation of Corrosion Sites

11:20am-11:40am **Eric Mahe**, Université Pierre et Marie Curie
CV-SECM for the Characterization of Electrocatalytic Materials

11:40am-12:00pm **Joaquin Rodriguez Lopez**, The University of Texas at Austin
SECM Interrogation of Surfaces for the Quantification of Adsorbed Intermediaries on Electrodes

12:15pm **Lunch** – Main Lodge

3:00pm-3:40pm **Gunther Wittstock**, University of Oldenburg
Local Control of Redox States in Supramolecular Surface Architectures using SECM

3:45pm-4:25pm **Christine Kranz**, Georgia Institute of Technology
Combined Infrared Attenuated Total Reflection Spectroscopy - Scanning Electrochemical Microscopy (IR-ATR-SECM)

4:30pm-4:50pm **Alessandro Minguzzi**, University of Milan
Oxygen Evolution Electrocatalysts Characterization by Scanning Electrochemical Microscopy

4:55pm-5:15pm **Wojciech Nogala**, Polish Academy of Sciences
SECM Study of Laccase within a Sol-Gel Processed Silicate Film

- 5:20pm-5:40pm **Zack Qin**, University of Western Ontario
Applications of SECM to Investigation of Local Corrosion Behaviors of UO_{2+x}
- 5:45pm-6:05pm **Klaus Bauer-Espindola**, HEKA Elektronik
Analysis of Catalytic Surfaces with the Scanning Electrochemical Microscope Using the Shear Force Method for Constant Distance Mode
- 6:05pm-7:30pm **Dinner** – Main Lodge
- 7:30pm-9:00pm **Poster Session I**

Poster Session I

Yvone Ackermann, Ruhr-Universität Bochum

Monitoring Biocatalytic Activity of an Array of Enzyme-Redoxpolymer Spots by Redox Competition Scanning Electrochemical Microscopy (RC-SECM)

Achraf Ghorbal, Commissariat à l'Energie Atomique de Saclay

Localized Electrografting of Vinylic Monomers on Conducting Substrate using an Integrated Electrochemical AFM Probe

Sophie Griveau, Ecole Nationale Supérieure

Study of the Chemical and Electrochemical Functionalization of Conductive Surfaces by Diazonium Salts by Means of Scanning Electrochemical Microscopy

Dipankar Koley, University of Texas at Austin

Studies of Multidrug Resistance Pumps by SECM in Living Cells

Janine Mauzeroll, University of Quebec in Montreal

The Importance of Cell Substrates and Simultaneous Toxicological Studies during Biological Scanning Electrochemical Microscopy Measurements

Yasufumi Takahashi, Tohoku University

Transfected Single Cell Imaging by Scanning Electrochemical Optical Microscopy with Shear Force Feedback Regulation

Yuehong Tong, Albert Einstein College of Medicine

Development of a Biosensor for Tetracycline/Doxycycline

Andrew Wain, California State University, Los Angeles

Imaging of DNA Microarrays Using Scanning Electrochemical Microscopy

Tuesday - August 26, 2008

- 7:30am **Breakfast** – Main Lodge
- 8:15am-8:55am **Christian Amatore**, Ecole Normale Supérieure & CNRS
Neurovascular Coupling Between Neuronal Activity and Blood Delivery in Brain
- 9:00am-9:40am **Shigeru Amemiya**, University of Pittsburgh
Scanning Electrochemical Microscopy of Nanostructured Interfaces and Membranes

- 9:45am-10:25am **Katherine Holt**, University College London
Probing Respiratory Chain Structure and Function Using SECM
- 10:30am-11:10am **Miklos Gratzl**, Case Western Reserve University
New Picture of Electrolyte and Mucus Secretion from Epithelial Cells Derived from Dynamic Recordings at Cell Monolayers with Ion-Selective Electrodes
- 11:15am-11:55am **Hitoshi Shiku**, Tohoku University
Electrochemical Analysis of Yeast Cells Expressing Beta-Galactosidase within a Poly(dimethylsiloxane) Microwell Array
- 12:15pm **Lunch** – Main Lodge
- 3:00pm-3:40pm **David Wipf**, Mississippi State University
SECM - Beyond Amperometry
- 3:45pm-4:25pm **Michael Mirkin**, Queens College – City University of New York
New Tips, New Tricks, and New Systems for SECM Studies
- 4:30pm -5:10pm **Zhefing Ding**, University of Western Ontario
Development and Applications of Constant-Distance SECM Imaging
- 5:15pm -5:35pm **Fernando Cortez Salazar**, Ecole Polytechnique Fédérale de Lausanne
Soft Stylus Tips for SECM
- 5:40pm -6:00pm **Patrick Frederix**, University of Basel, Switzerland
AFM-SECM with Conductive Cantilevers for Structural Biology
- 6:00pm -7:15pm **Dinner** – Main Lodge
- 7:30pm-9:00pm **Poster Session II**

Poster Session II

Dario Battistel, University of Venice

An Approach for Micropatterning and Imaging of Al₂O₃ Surfaces by Scanning Electrochemical Microscopy (SECM)

Fernando Cortés Salazar, Ecole Polytechnique Fédérale de Lausanne
Large Area SECM Imaging of Silver Nanoparticles Containing Samples

Tamar Danieli, Hebrew University of Jerusalem
Studying the Reactions of CdTe Nanostructures and Thin CdTe Films with Ag⁺ and AuCl₄⁻

Lorella Guadagnini, University of Bologna
Visualization of Local Electrocatalytic Activity of Metal Hexacyanoferrates by Means of Scanning Electrochemical Microscopy

Lisa Li, University of Nottingham
Monitoring the Quality of Anti-Corrosion Coatings based on Inconel 625 using Scanning Electrochemical Microscopy

Maike Pähler, Ruhr-Universität Bochum
Visualization of Local Release of Ni²⁺ Ions from NiTi Shape Memory Alloys by Means of Stripping-Mode SECM

Agnieszka Rutkowska, University of Warwick
Electrochemistry and Electrochemical Imaging of Aligned Single Walled Carbon Nanotubes

Stefanie Schwamborn, Ruhr-Universität Bochum
Locally Deposited Iron Catalyst for the Development of Tunable Microstructured CNT-Modified Surfaces as Novel Supporting Materials

Michele Tague, Cornell University
High Throughput Screening Methods for Fuel Cell Electrocatalysts

Wednesday, August 27, 2008

- 7:30am **Breakfast** – Main Lodge
- 8:15am-8:55am **Patrick Unwin**, University of Warwick
Putting SECM in the Spotlight
- 9:00am-9:40am **Dennis Tallman**, North Dakota State University
Probing Electron Transfer at Complex Aluminum Alloy Interfaces by Scanning Electrochemical Microscopy
- 9:45am-10:25am **Salvatore Daniele**, University of Venice
Characterization of Pt/Al₂O₃ Layers Synthesized by r.f. Magnetron Sputtering by SECM and Voltammetry
- 10:30am-11:10am **Frederic Kanoufi**, LECA - ESPCI – CNRS
Patterning Surfaces with Polymer Brushes of Controlled Density Grown by Atom Transfer Radical Polymerization
- 11:15am-11:35am **Federico Grisotto**, DSM DRECAM SPCSI
Direct SECM Localized Electrografting of Vinyllic Monomers onto Conducting Substrates
- 11:40am-12:00pm **Martin Edwards**, University of Warwick
Can Tip Position Modulation SECM be Made Quantitative?
- 12:15pm **Lunch** – Main Lodge
- 3:00pm-3:40pm **Philip Hapiot**, Université de Rennes 1
SECM investigations of redox active monolayers bound to silicon substrates
- 3:45pm-4:05pm **Renaud Cornut**, LEPMI / ENSEEG
Determination of Thin Film Permeability with SECM
- 4:10pm-4:30pm **Justyna Wiedemair**, Georgia Institute of Technology
Ion Beam Deposited Platinum Carbon Composite Material for AFM-SECM Tip-Integrated Biosensors
- 4:35pm-5:15pm **David Cliffel**, Vanderbilt University
Glucose and Lactate Biosensors for Scanning Electrochemical Microscopy Imaging of Single Live Cells
- 5:20pm-6:00pm **Shuping Bi**, Nanjing University

Some thoughts on the Existence of Ion and Water Channels in Highly Dense and Well-Ordered CH₃-Terminated Alkanethiol Self-Assembled Monolayers on Gold

6:00pm -7:15pm **Dinner** – Main Lodge

7:30pm-9:00pm **Poster Session III**

Poster Session III

Michaela Beckmann, Ruhr-Universität Bochum
4D Shearforce-Based Constant-Distance Mode SECM

Jessica Denayer, University of Manur
SECM Investigation of n-alkanethiol Mono and Bipode and n-alkaneselenol Self-Assembled Monolayers on Copper

Philippe Hapiot, Université de Rennes 1
Variations of Diffusion Coefficients in Ionic Liquids with the Redox State: Investigations by SECM in Feedback Mode

Fei Li, Ecole Polytechnique Fédérale de Lausanne
SECM as an In Situ Probe to Detect H₂O₂ Generated at a Microhole Supported Water/1,2-DCE Interface

Hollie Patten, University of Warwick
High Resolution Electrochemical Imaging with the Scanning Micropipette Contact Method (SMCM)

Jeyavel Velmurugan, Queens College-City University New York
Electron Transfer Kinetics at Gold Nanoelectrodes and Nanoscale SECM Imaging

Dongping Zhan, Queens College-City University New York
Scanning Electrochemistry Microscopy: Generation/Collection Mode on SECM Tip

Cheng-Lan Lin, University of Texas at Austin
Micropipet with Interface between Two Immiscible Electrolyte Solutions for the Delivery of Electroactive Species in Tip Generation-Substrate Collection Mode of the Scanning Electrochemical Microscopy

Thursday, August 28, 2008

7:30am **Breakfast** - Main Lodge

8:15am-12:15am **Free Time**

12:15pm-1:15pm **Lunch** – Main Lodge

1:30pm **Departure**