

**FIRST ERNEST B. YEAGER FRONTIERS IN ELECTROCHEMICAL SCIENCE AND
ELECTROCHEMICAL TECHNOLOGY**

SCHEDULE

Wednesday, October 12, 2005

8:30 – 8:45 **D. A. Scherson**, E.B. Yeager Center for Electrochemical Sciences, Case Western Reserve University, Cleveland, OH
Opening Remarks

Morning Session, Presiding: R. Hillman

8:45 – 9:20 AM **J. Lipkowski**, University of Guelph, Guelph, Ontario, Canada.
Field driven transitions in thin organic films at electrode surfaces.

9:20 – 9:55 am **A. Wieckowski**, University of Illinois, Urbana-Champaign, IL, USA
An NMR Determination of CO Diffusion on Platinum Electrocatalysts at Room and Near Room Temperature.

9:55 – 10:30 am **N. M. Markovic**, Argonne National Laboratory, Argonne, IL USA.
Surface Science Studies of Fuel Cell Reactions: from Model System to Real Catalysts.

10:30 – 10:45 am **Break**

10:45 – 11:20 **M. Thackeray**, Argonne National Laboratory, Argonne, IL USA
The Structural Design of Lithium Battery Electrodes.

11:20 – 11:55 am **A. A. Gewirth**, University of Illinois, Urbana-Champaign, IL, USA
Structure of Water at the Electrified Metal-Liquid Interface.

11:55 - 1:30 pm **Lunch**

Afternoon Session, Presiding: A. Gewirth

1:30 – 2:05 pm **P.N. Bartlett**, University of Southampton, UK
Templated Electrodeposition of SERS Active Surfaces.

2:05 – 2:40 pm **J. Stickney**, University of Georgia, Athens, GA, USA
The Formation of Nanometer Thickness Films of Metals using Electrochemical Atomic Layer Epitaxy (EC-ALE).

2:40 – 3: 15 pm **U. Landau**, Case Western Reserve University, Cleveland, OH, USA
Copper Metallization of Submicron Features in Semiconductor Devices – Unraveling the Unique Plating Mechanism.

3:15 – 3:30 pm **Break**

3:30 – 4:05 pm **A. Anderson**, Case Western Reserve University, Cleveland, OH, USA
Toward the Understanding and Prediction of Mechanisms in Electrocatalysis.

4:05 – 4:40 pm **J. A. Switzer**, University of Missouri, Rolla, MO, USA
Chiral electrodeposition.

4:40 – 5: 15 pm **Z. Samec**, Institute of Physical Chemistry, Prague, Czech Republic.
Metal deposition at the polarized liquid-liquid interface.

5:15 – 5:30 pm **Break**

5:30 pm **Poster Session**

6:15 – 8:00 pm **Cocktail and Dinner (Buffet)**

Thursday, October 13, 2005

Morning Session, Presiding: K. Uosaki

8:30 – 9:05 am **J. M. Feliu**, Institute of Electrochemistry, University of Alicante, Spain.
Surface electrocatalysts characterization.

9:05 – 9:40 am **R. R. Adzic**, Brookhaven National Laboratory, Upton, NY, USA.
Platinum Monolayer Electrocatalysts for Oxygen Reduction.

9:40 – 10:15 am **P. Schmuki**, University of Erlangen, Germany.
Self-Organized Titanium Oxide Nanotube-Layers: Formation and Applications.

10:15 – 10:50 am **A. R. Hillman**, , University of Leicester, UK.
Viscoelastic properties of polythiophene-based electroactive polymer films as a function of effective timescale.

10:50 – 11:05 am **Break**

11:05 – 11:40 am **J. Lessard**, Université de Sherbrooke, Canada.
Electrocatalytic Hydrogenation of Organic Compounds: Scope, Limitations, and Mechanistic Aspects.

11:40 – 12:15 pm **W. Schmickler**, University of Ulm, Germany.
What drives electrochemical surface processes?

12:15 - 1:30 pm **Lunch**

Afternoon Session, Presiding: M. Thackeray

1:30 – 2:05 pm **S. Gottesfeld**, MTI Microfuel Cells, Albany NY, USA.
Direct Methanol Fuel Cells: Prototypes, Early Products and Reaction Orders.

2:05 – 2:40 pm **M. W. Verbrugge**, General Motors Corporation, Warren, MI, USA.
Supercapacitors: analysis for high-power-density applications.

2:40 – 3: 15 pm **Y. Tolmachev**, Kent State University, Kent, OH, USA.
Could Ru(OH)₃ be the active species in PtRu electrocatalysts?

3:15 – 3:30 pm **Break**

3:30 – 4:05 pm **Y. Shao-Horn**, Massachusetts Institute of Technology, Cambridge, MA, USA.
Electrospun Electrodes for Proton Exchange Membrane Fuel Cells

4:05 – 4:40 pm **M. Gratzl**, Case Western Reserve University, Cleveland, OH, USA.
Micro-electrochemistry for Biomedical Applications.

4:40 – 5: 15 pm **H. B. Martin**, Case Western Reserve University, Cleveland, OH, USA.
Boron-Doped Diamond Neurosensors and Neural Stimulating Electrodes.

5:15 pm **Bus to Case Western Reserve Univeristy**

6:00 pm **Reception at Hovorka Atrium**

6:30 pm **Banquet**

8:00 pm **Back to Hotel**

Friday, October 14, 2005

Morning Session: Presiding: P. Bartlett

8:30 – 9:05 am **F. M. Hawkridge**, Virginia Commonwealth University, Richmond, VA, USA.

Sensor Applications of Oxidase Modified Electrodes.

9:05 – 9:40 am **N. Dudney**, Oak Ridge National Laboratory, Oak Ridge, TN, USA.

Controlling the composition of thin films for rechargeable lithium batteries.

9:40 – 10:15 am **E. S. Takeuchi**, SUNY at Buffalo, Buffalo, NY, USA.

Mechanistic Study of the Discharge of SVO and the Consequences on Electrical Conductivity.

10:15 – 10:50 am **K. Uosaki**, Hokkaido University, Sapporo, Japan.

Construction and (Photo-) Electrochemical Properties of Organic Monolayers on Metal and Semiconductor Substrates.

10:50 – 11:05 am **Break**

11:05 – 11:40 am **G. Swain**, Michigan State University, East Lansing, MI, USA.

Metal Adlayer Formation on Electrically Conducting Diamond Film Surfaces.

11:40 – 12:15 pm **P. Allongue**, CNRS - Ecole Polytechnique, Palaiseau, France.

Well defined chemically functionalized H-Si(111) surfaces.

12:15 - 1:30 pm **Lunch**

Afternoon Session, Presiding: J. Feliu

1:30 – 2:05 pm **J. Burgess**, Case Western Reserve University, Cleveland, OH, USA.

Electrode Structures for the Detection of Cholesterol at the Single Cell Level.

2:05 – 2:40 pm **E. R. Gonzalez**, Instituto de Química de São Carlos-USP, SP, Brazil.

The oxygen reduction reaction in low temperature fuel cells.

2:40 – 3:15 pm **K. Kanamura**, Tokyo Metropolitan University, Tokyo, Japan.

Fabrication of Micro Rechargeable Lithium Battery System by Using Micro-Array Electrode.

3:15 – 3:30 pm **Break**

3:30 – 4:05 pm **L. Dunsch**, Leibniz-Institute of Solid State and Materials Research, Dresden, Germany.

Spectroelectrochemistry of carbon nanostructures.

4:05 – 4:40 pm **P. J. Kulesza**, University of Warsaw, Warsaw, Poland.

Activation of Catalytic Metal Nanoparticles towards Oxygen Reduction through Modification with Polyoxometallate Monolayers.

4:40 – 5: 15 pm **M. Bayachou**, Cleveland State University, Cleveland, OH, USA.

Nitric Oxide Biosynthesis Electrochemically-Driven on NOS-Modified electrodes.

5:15 pm **Adjourn**