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# PHYSICAL AND ANALYTICAL ELECTROCHEMISTRY DIVISION (PAED)

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May 2015

*Division Website: [www.electrochem.org/ecs/tia/paed/paed.htm](http://www.electrochem.org/ecs/tia/paed/paed.htm)*

## Division Officers (2013-2015)

**Chair:** Dr. Robert Mantz  
[Robert.a.mantz@us.army.mil](mailto:Robert.a.mantz@us.army.mil)

**Vice-Chair :** Dr. Pawel Kulesza  
[pkulesza@chem.uw.edu.pl](mailto:pkulesza@chem.uw.edu.pl)

**Secretary:** Dr. Andrew Hillier  
[hillier@iastate.edu](mailto:hillier@iastate.edu)

**Treasurer:** Dr. Alanah Fitch  
[afitch@luc.edu](mailto:afitch@luc.edu)

**Division Past Chair:** Dr. Shelley Minter  
[minter@chem.utah.edu](mailto:minter@chem.utah.edu)

**Members-at-Large:**

Dr. Plamen Atanasov	<a href="mailto:plamen@unm.edu">plamen@unm.edu</a>
Dr. Robert Calhoun	<a href="mailto:calhoun@usna.edu">calhoun@usna.edu</a>
Dr. David Cliffl	<a href="mailto:d.cliffel@vanderbilt.edu">d.cliffel@vanderbilt.edu</a>
Dr. Wesley Henderson	<a href="mailto:whender@ncsu.edu">whender@ncsu.edu</a>
Dr. Gregory Jerkiewicz	<a href="mailto:gregoryj@chem.queensu.ca">gregoryj@chem.queensu.ca</a>
Dr. Nicolas Mano	<a href="mailto:mano@crpp-bordeaux.cnrs.fr">mano@crpp-bordeaux.cnrs.fr</a>
Dr. Alice Suroviec	<a href="mailto:asuroviec@berry.edu">asuroviec@berry.edu</a>
Dr. Petr Vanysek	<a href="mailto:pvanysek@gmail.com">pvanysek@gmail.com</a>

*Newsletter Editor: Andrew Hillier*

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# *Symposium Planning Committee*

*Robert Mantz, PAED Chair*  
*([robert.a.mantz@us.army.mil](mailto:robert.a.mantz@us.army.mil))*

*Pawel Kulesza, PAED Vice-Chair*  
*([pkulesza@chem.uw.edu.pl](mailto:pkulesza@chem.uw.edu.pl))*

## Recent Activities (Symposia)

**PAED sponsored or co-sponsored following symposia at 226<sup>th</sup> ECS Meeting in Cancun (Oct. 27<sup>th</sup>–Nov 1<sup>st</sup>, 2014)**

- A04 - Electrochemical Interfaces in Energy Storage Systems, Battery / Energy Technology / Physical and Analytical Electrochemistry (Kristina Edstrom, Robert Kostecki, **Plamen Atanassov**, and Jean St-Pierre)
- A07 - Nature-inspired Electrochemical Systems, Energy Technology / New Technology Subcommittee (W. Mustain)
- A08 - Nature-inspired Electrochemical Systems, Energy Technology / New Technology Subcommittee, (W. Mustain)
- B02 - Microfabricated and Nanofabricated Systems for MEMS/NEMS 11 (Chemical and Biological Sensors), Sensor / Physical and Analytical Electrochemistry, (Peter J. Hesketh, **Petr Vanysek**, Nick Wu, Bryan Chin, Sushanta Mitra, Raluca Van Staden, and Ajit Khosla)
- G01 - Bioelectroanalysis and Bioelectrocatalysis 2, Physical and Analytical Electrochemistry / SMEQ, (Shelley Minteer, **Plamen Atanassov**, Linda V. González-Gutiérrez, and D. Fox)
- H01 - PAED General Session, Physical and Analytical Electrochemistry, (**Pawel J. Kulesza**)
- H02 - Chemically Modified Electrodes, Physical and Analytical Electrochemistry / Electrodeposition, (**Mark Anderson** and **Alanah Fitch**)
- H06 - Molten Salts and Ionic Liquids 19, Physical and Analytical Electrochemistry / Electrodeposition / Energy Technology, (**Hugh De Long**, **Paul Trulove**, **Robert A. Mantz**, **Sanjeev Mukerjee**, Andreas Bund, and Adriana Ispas)
- H07 - Oxygen Reduction Reactions, Physical and Analytical Electrochemistry / Battery / Energy Technology / High Temperature Materials, (**Pawel J. Kulesza**, **Robert Mantz**,

Vito Di Noto, Bill Mustain, Sanjeev Mukerjee, Paul Gannon, Xiao-Dong Zhou, Yang Shao-Horn, and Minhua Shao)

- H08 - Systems Electrochemistry, Physical and Analytical Electrochemistry, (I. Z. Kiss, Richard Hanke-Rauschenbach, Hamilton Varela, and Shuji Nakanishi)
  - M01 - Nanocarbon Fundamentals and Applications - from Fullerenes to Graphene, Fullerenes, Nanotubes, and Carbon Nanostructures / Physical and Analytical Electrochemistry / SMEQ, (R. Bruce Weisman and Marina E. Rincón-González)
  - Q02 - Fundamentals and Applications of Microfluidic and Nanofluidic Devices 2, Electronics and Photonics / Physical and Analytical Electrochemistry, (H. Baumgart, A. Beskok, J.-P. Hsu, S. W. Joo, A. Sharma, and S. Qian)
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## **PAED sponsored or co-sponsored by PAED during 227<sup>th</sup> ECS Meeting in Chicago**

- L01 - Physical and Analytical Electrochemistry, Electrocatalysis, and Photoelectrochemistry General Session Physical and Analytical Electrochemistry (*Pawel J. Kulesza and Alice Suroviec*)
- L03 - Computational Electrochemistry Physical and Analytical Electrochemistry / Energy Technology / Physical and Analytical Electrochemistry (*Stephen Paddison and Scott Calabrese Barton*)
- L04 - Electrocatalysis 7 Physical and Analytical Electrochemistry / Energy Technology (*Shelley Minter, Plamen Atanassov, and Minhua Shao*)
- L05 - Electrochemistry at Primarily Undergraduate Institutions Physical and Analytical Electrochemistry / Energy Technology / Industrial Electrochemistry and Electrochemical Engineering / Organic and Biological Electrochemistry / Sensor *Suroviec, D. Fox, R. Calhoun, Jim Burgess, Michael Carter, Scott Calabrese Barton, John Staser, and M. Anderson*)
- L06 - Electrochromic and Chromogenic Materials Physical and Analytical Electrochemistry (*Pawel J. Kulesza*)
- L08 - Spectroelectrochemistry III Physical and Analytical Electrochemistry (*Andy Hillier and Sanjeev Mukerjee*)
- L09 - Oxygen or Hydrogen Evolution Catalysts for Water Electrolysis Industrial Electrochemistry and Electrochemical Engineering / Energy Technology / Physical and Analytical Electrochemistry (*Hui Xu, Sanjeev Mukerjee, Vijay Ramani, Plamen Atanassov, and Pawel Kulesza*)
- L10 - Photocatalysts, Photoelectrochemical Cells, and Solar Fuels 5 Energy Technology / Physical and Analytical Electrochemistry / Sensor (*Nick Wu, Deryn Chu, Huyen Dinh, Eric Miller, Ravi Subramaniam, A. Manivannan, PJ Kulesza, Zhigang Zou, Heli Wang, and Jae-Joon Lee*)
- L11 - Structure and Relaxations in Soft Ion-conducting Materials Energy Technology / Battery / Physical and Analytical Electrochemistry (*Vito Di Noto, Gao Liu, and Kunal Karan*)
- B02 - Carbon Nanostructures in Medicine and Biology Nanocarbons / Organic and Biological Electrochemistry / Physical and Analytical Electrochemistry / Sensor (*Tatiana*

*DaRos, Hugh De Long, Raluca Van Staden, Lon Wilson, Daniel Heller, and Graham Cheek)*

- B03 - Carbon Nanotubes - From Fundamentals to Devices Nanocarbons / Dielectric Science and Technology / Physical and Analytical Electrochemistry (*Slava V. Rotkin, Steven Doorn, Yury Gogotsi, R. Bruce Weisman, Ming Zheng, and Pawel Kulesza*)
  - B05 - Fullerenes - Chemical Functionalization, Electron Transfer, and Theory: In Honor of Professor Shunichi Fukuzumi Nanocarbons / Physical and Analytical Electrochemistry (*Francis D'Souza, Nazario Martin, Dirk Guldi, and David Cliffl*)
  - B06 - Graphene and Beyond: 2D Materials Nanocarbons / Dielectric Science and Technology / Physical and Analytical Electrochemistry (*Haim Grebel, Y. Obeng, Richard Martel, Andreas Hirsch, Michael Arnold, and Vito Di Noto*)
  - B07 - Inorganic/Organic Nanohybrids for Energy Conversion Nanocarbons / Battery / Energy Technology / Physical and Analytical Electrochemistry (*Hiroshi Imahori, Huyen Dinh, Shirley Meng, Pawel J. Kulesza, and Prashant Kamat*)
  - B08 - Porphyrins, Phthalocyanines, and Supramolecular Assemblies Nanocarbons / Physical and Analytical Electrochemistry (*Karl Kadish, Sanjeev Mukerjee, Nathalie Solladie, Roberto Paolesse, and Tomas Torres*)
  - E02 - Surfactant and Additive Effects on Thin Film Deposition, Dissolution and Particle Growth Electrodeposition / Battery / Physical and Analytical Electrochemistry (*Thomas P. Moffat, Rohan Akolkar, Qiang Huang, and Ji-Guang Zhang*)
  - G02 - Processes at the Semiconductor Solution Interface 6 Electronics and Photonics / Dielectric Science and Technology / Electrodeposition / Energy Technology / Physical and Analytical Electrochemistry (*Colm O'Dwyer, D. Noel Buckley, Arnaud Etcheberry, Andrew C. Hillier, Robert P. Lynch, Philippe Vereecken, Heli Wang, and Oana Leonte*)
  - I02 - Electrochemical Synthesis of Fuels 3 High Temperature Materials / Energy Technology / Industrial Electrochemistry and Electrochemical Engineering / Physical and Analytical Electrochemistry (*Xiao-Dong Zhou, G. Brisard, Mogens Mogensen, W. Mustain, M.C. Williams, J. Staser, and Turgut Gur*)
  - I05 - Solid-Gas Electrochemical Interfaces (SGEI 1) High Temperature Materials / Energy Technology / Physical and Analytical Electrochemistry (*Mogens Mogensen, Ellen Ivers-Tiffée, Tatsuya Kawada, Stuart Adler, Pawel J. Kulesza, and Sanjeev Mukerjee*)
  - I06 - State-of-the-Art Tutorial on Diagnostics in Low Temperature Fuel Cells Energy Technology / Industrial Electrochemistry and Electrochemical Engineering / Physical and Analytical Electrochemistry (*Adam Weber, Thomas Zawodzinski, Vijay Ramani, Felix Buchi, Deborah Myers, and Kazuhiko Shinohara*)
  - M01 - Nano/Biosensors and Actuators Sensor / Physical and Analytical Electrochemistry (*Aleksandr Simonian, Bryan Chin, Nick Wu, Sushanta Mitra, Larry Nagahara, David Cliffl, Zoraida Aguilar, and Jessica Koehne*)
  - Z01 - General Student Poster Session All Divisions (*Venkat Subramanian, Matt Foley, Vimal Chaitanya, Ajit Khosla, Pallavi Pharkaya, and Kalpathy Sundaram*)
  - Z04 - Nature-Inspired Electrochemical Systems Energy Technology / Energy Technology / Industrial Electrochemistry and Electrochemical Engineering / Organic and Biological Electrochemistry / Physical and Analytical Electrochemistry / Sensor / Interdisciplinary Science & Technology Subcommittee (*W. Mustain, Huyen Dinh, Hui Xu, Shelley Minteer, Aleksandr Simonian, Mekki Bayachou, and Gerardine Botte*)
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**Last PAED Luncheon was held during the 225<sup>th</sup> ECS Spring Meeting in Orlando, FL (May, 2014).**

**Present PAED Luncheon is held during the 227<sup>th</sup> ECS Spring Meeting in Chicago, IL (May, 2015).**

**Next PAED Luncheon will be held during the 229<sup>th</sup> ECS Spring Meeting in San Diego, CA (May, 2016).**

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***PAED 2015  
Treasurer's Report – 2014 Calendar Year***

**Total Income:** \$22,105

Dues = \$4,140, ECS Transactions = \$1,277, Meeting Abstracts = \$4230, Symposium Support = \$3,000, Journal Articles Published = \$458, Journal Focus Issues = \$5,000, Interest Earned = \$4,000

**Total Expenses:** \$30,139

Student Memberships = \$300, Registration Waivers = \$1,034, Special Events = \$4,260, Travel Grants = \$8,895, Symposium = \$15,650

**Balance (December 31, 2014):** \$97,803

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## Students and Young Faculty Awards

### **PAED Travel Award Winners for the 226<sup>th</sup> ECS Meeting in Cancun (October 2014)**

#### Faculty

- **Dr. Michael Workman** – University of New Mexico

#### Students

- **Rema Abdulaziz** – University College London
- **Eleanor Gilette** – University of Maryland
- **Anthony Stevenson** – University of Nottingham
- **Joseph Rheinhardt** – Arizona State University

### **PAED Travel Award Winners for the 227<sup>th</sup> ECS Meeting in Chicago (May 2015)**

#### Faculty

- **Dr. Edgar Goluch** – Northeastern University
- **Dr. Jin Suntivich** – Cornell

#### Students

- **Russell Reid** – University of Utah
- **Fathima Fasmin** – Indian Institute of Technology – Madras
- **Luping Li** – University of Florida
- **Nijdeka Okoye** – Tennessee Tech University
- **Jamie Shetzline** - Clemson

# The PAED Division Awards

## **David C. Grahame Award**

- The Award was established in 1981 through the sponsorship of General Electric and the Ford Foundation to encourage excellence in the physical electrochemistry research.
- The Award is given in the spring of odd-numbered years and consists of a scroll and prize of \$1,500.
- The Award shall be granted to a currently Active Member of the Society upon some recent outstanding scientific contribution to physical electrochemistry.

*The 2015 Grahame Award went to Hubert Gasteiger (presentation was at the ECS Meeting in Chicago, Illinois).*

## **Max Bredig Award in Molten Salt Chemistry**

- The Award was established in 1984 through the sponsorship of ARCO Metals Company and the Aluminum Company of America in order to recognize excellence in molten salt chemistry research.
- The Award will consist of a check for the sum of at least \$1,500.
- The Award lecture shall be given at the International Molten Salt Symposium sponsored by the PAED.

*The 2014 Bredig Award went to Charles Hussey (presentation was at the ECS Meeting in Orlando, Florida).*