



The Electrochemical Society – Detroit Section

Seminar Notice: Wednesday, Jan 14, 2009

Analytical Study of Implantable Cardiac Defibrillator Batteries

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Batteries for implantable cardiac defibrillators (ICDs) are based on the Lithium/Silver vanadium oxide (SVO, $\text{Ag}_2\text{V}_4\text{O}_{11}$) system. This system was first implanted in 1987 and over 20 years later remains the dominant system used in human implants. Hundreds of thousands of lives have been saved due to the ICDs powered by Li/SVO batteries. The success of SVO as a cathode in ICD batteries can be attributed to the following factors: high current pulsing capability, high volumetric energy content, and a sloping discharge voltage curve which provides for state of charge indication. The battery characteristics favorable to the ICD application are the result of the rich chemistry and electrochemistry of the SVO cathode which will be discussed.

Bio: Esther S. Takeuchi joined the University at Buffalo in September 2007 after a 22 year career in industry. Previously she was employed at Greatbatch, Inc. in a variety of roles including Chief Scientist and Executive Director of Battery R&D and Centers of Excellence at Greatbatch, Inc. Esther's work has been honored by numerous organizations. These include the Jacob F. Schoellkopf Award given by the WNY American Chemical Society, the Electrochemical Society Technology Award and the Community Advisory Council of the State University at Buffalo. Dr. Takeuchi was inducted into the WNY Women's Hall of Fame and is an inventor on over 140 patents. USA Today has credited her with having more patents than any other living woman. In 2004, Dr. Takeuchi was elected a member of the National Academy of Engineering. She was the inaugural recipient of a Life Time Achievement Award presented by The Technical Societies Council of the Niagara Frontier and The Niagara Frontier Intellectual Property Law Association and she was selected for the inaugural Astellas Foundation Award by the American Chemical Society.

Date: **Wednesday, Jan 14, 2009**

Location: Lawrence Technological University

21000 West Ten Mile Road, Southfield, MI 48075

Building #5 (Taubman Welcome Center), 4th Floor, Room 406

Use Parking Lot A, C or D (Lots C & D are accessed off NW Highway)

Time: 5:30 pm Reception / 6:30 pm Dinner / 7:30 pm Speaker

Price: \$20 Members / \$22 Guests / \$15 Students

Payment: Cash or Check

RSVP by: **Wednesday, Jan 7th, 2009 to Xia Wang**

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<http://www.electrochem.org/ecs/sections/detr/detr.htm>



