

## ECS President Esther Takeuchi Inducted into The National Inventors Hall of Fame



ECS President **ESTHER TAKEUCHI** (center) was inducted into the National Inventors Hall of Fame (NIHF). At left is **DAVID KAPPOS**, Under Secretary of Commerce for Intellectual Property and Director of the USPTO. At right is **EDWARD GRAY**, Chair of the NIHF Board of Directors.

**ESTHER TAKEUCHI**, ECS President for 2011-2012, was recently inducted into The National Inventors Hall of Fame™. Takeuchi is responsible for having led efforts to invent and refine the lifesaving lithium/silver vanadium oxide battery (Li/SVO) technology, which is utilized in the majority of today's implantable cardiac defibrillators. The National Inventors Hall of Fame honors those who have created great technological advances that make human, social, and economic progress possible.

Dr. Takeuchi holds the rank of Greatbatch Professor of Advanced Power Sources, SUNY Distinguished Professor at the University at Buffalo SUNY, in the Departments of Chemical and Biological Engineering, Electrical Engineering, and Chemistry. In 2010 she was awarded the Chancellor Charles P. Norton Medal, the highest honor conferred by the University at Buffalo. She joined the University in 2007 after a 22-year career at Greatbatch, Inc., where she was involved in power source research and development.

Focusing her research on materials, electrochemical power sources, and medical devices, Dr. Takeuchi is the author of more than 60 publications, editor or author of five books or book chapters, has delivered over 100 presentations, and is inventor on more than 140 patents. Throughout her distinguished career, Dr. Takeuchi has received numerous awards and international recognition. In 2009, President Barack Obama personally presented Dr. Takeuchi with the prestigious National Medal of Technology and Innovation.

For more than 25 years, Dr. Takeuchi's service and contribution to ECS has been exemplary. Her activities have included Secretary, Treasurer, and Chair of the Battery Division, and Chair of the Battery Division Research Award Committee. She has organized several symposia and edited proceedings volumes. In addition, she has served on the Technical Affairs, Development, and Ways and Means Committees. Having recently participated in the 220<sup>th</sup> ECS meeting in Montréal, Canada, Dr. Takeuchi noted, "Electrochemistry and the concepts of electron transfer are key aspects of several forms of renewable and more sustainable ways of energy generation and storage and a very pertinent subject today. The technologies that electrochemical engineers are currently developing will inspire new possibilities for cleaner energy solutions for tomorrow. ECS members are applying their knowledge and vision to build a more promising future for our planet."

The National Inventors Hall of Fame (<http://invent.org/>) is the premier nonprofit organization in America dedicated to honoring living and legendary inventors whose innovations and entrepreneurial endeavors have changed the world. Founded in 1973 by the United States Patent and Trademark Office and the National Council of Intellectual Property Law Association, the Hall of Fame, with its 2011 induction, has 460 Inductees. ■

## In Memoriam



**John B. O'Sullivan**  
(1934-2011)

**J**OHAN B. O'SULLIVAN died peacefully on January 3, 2011 at age 76, having fought the presently incurable, slowly debilitating disease called Inclusion Body Myositis (IBM) for approximately 10 years. Dr. O'Sullivan graduated from the University of Notre Dame in 1955 with a BS in geology. After completing an MS degree in geology at Iowa State University (ISU) in 1958, he continued in the ISU Geology PhD program with main interests in soil engineering as well as the chemistry and physics of soils. A post-doctorate followed his 1961 graduation, dealing mainly on the ice flows in the vicinity of Point Barrow, Alaska, reportedly determining a suitable composition for long-lived asphalt roadways constructed on ice surfaces.

At the suggestion of an ISU alumni friend, in late 1962, Dr. O'Sullivan joined the Process Engineering group at the Allis-Chalmers (A-C) Research Division in West Allis, Wisconsin. A-C was then also involved in the rebirth of fuel cell R&D in the U.S., concentrating in the development of alkaline electrolyte cells and systems. After expanding basic R&D efforts in rotating kiln processing of lime as well as direct reduction of iron ore pellets,

his exposure to electrochemistry started with studies for the improvement of electrode separating, asbestos, electrolyte support vehicles. Dr. O'Sullivan was also involved in follow-up studies to that started in the earlier, ARPA funded, Mobile Energy Depot project, involving alternative processes for hydrogen (or ammonia) production using a nuclear reactor for electrical and/or thermal energy. During this timeframe, Dr. O'Sullivan's very wide ranging interests in "the Arts" as well as his ability to befriend a truly wide variety of people became quite evident.

As the A-C Corporation started its economic decline in the late '60s, Dr. O'Sullivan was recruited by the U.S. Army's Ft. Belvoir (Virginia) R&D Center management, joining them in 1969. In addition to continuing the more basic R&D efforts in phosphoric and "super acid" acid fuel cells, he became involved in a variety of contracted, as well as in-house, fuel cell development efforts. Recognizing his people skills, Dr. O'Sullivan was started into the Department of Defense (DOD) management track, serving as Acting Branch Head of the Energy and Water Resources Lab, the Petroleum and Environmental Technical Division, and then Chief of the Electrochemical Division.

The DOD's budget problems resulted in the Institute of Gas Technology (IGT) offering Dr. O'Sullivan a position in 1980, first as Director of the Energy Conversion and Storage section, later being promoted to an Assistant Vice-President and Head of the Engineering Division. The principal effort was an expansion of a Department of Energy (DOE) funded, Molten Carbonate Fuel Cell (MCFC) program which led to the initiation of M-C Power, Inc., a commercial technology spin-off from IGT proper. This was the second spin off of IGT MCFC technology, the first associated with Energy Research Corporation, founded and headed by Bernie Baker in 1970, and later renamed as FuelCell Energy (FEC). Dr. O'Sullivan also was involved with the increased interest and funding of the Solid Oxide Fuel Cell (SOFC).

In 1992, Dr. O'Sullivan was offered and accepted a Program Manager position in EPRI (the Electric Power Research Institute) which covered in part, the commercialization of large fuel cell systems aimed at utility sized (multi megawatt) applications including the increased EPRI increased interest in SOFCs. He also participated in EPRI's evaluation efforts in the in-progress testing of the PAFC and MCFC systems and the continuing research into the ion exchange (PEMFCs) and phosphoric acid (PAFCs) cells.

With hints regarding the start of the Dysphagia, a subset of the IBM, John retired from EPRI in May 2000, moving from the West Coast to the DC area to be geographically closer to his children and grandchildren. This, of course, was not an ordinary retirement. In addition to condensing and moving his truly large, 40+ year collections of art, musical recordings, literature, and furniture, along with technical and travel memorabilia, O'Sullivan worked as a consultant and continued to be influential in promoting, overseeing, and attending the various fuel cell meetings in the U.S. and abroad. Along with acquiring about a thousand new friends at the retirement community, he maintained, roughly monthly, phone, e-mail and letter contact with at least 100 "close" friends scattered throughout the world. In addition to a European cruise/tour, during the last 18 months, John had been involved in the preparation of a history of the Allis-Chalmers fuel cell efforts, intended to be part of an overall fuel cell history to be assembled by the Smithsonian Institution's Museum of American History.

John was a member of Sigma Xi, and a 30-year member of ECS, having served as Chair of the National Capital Section in 1976 and 1977. He was honored with the 2006 (National) Fuel Cell Seminar Award, having been involved with the annual Fuel Cell Seminar since its start in 1976. John is survived by his three children, Sherri Heile, Sean O'Sullivan, and Norene O'Sullivan (Simon); five grandchildren; his sister, Theresa; and his loving partner, Karen Pierson. ■

*This notice was submitted by John Murray.*

## In Memoriam

**GEORGE GILLOOLY** (1920-2010), member since 1959, Luminescence & Display Materials Division

**WALTER JUDA** (1916-2011), member since 1962, Battery Division