

**DANIEL A. SCHERSON**  
**Biography**

Daniel Scherson was born in Santiago, Chile in 1951. He received his Licenciatura en Química (License in Chemistry) from the Faculty of Sciences, University of Chile in 1974, and later in 1979 a Ph.D. in Chemistry from the University of California, Davis, in the area the non-equilibrium nonlinear thermodynamics under the supervision of Prof. Joel Keizer. After completing his doctoral thesis, he held post-doctoral research appointments in the groups of Prof. John Newman at UC Berkeley, Dr. Phil Ross at the Lawrence Berkeley National Laboratory, Prof. Ernest B. Yeager at Case Western Reserve University and later at the Fritz Haber Institute with Profs. Dieter Kolb and Heinz Gerischer. In 1983, he joined the faculty of the Department of Chemistry at Case Western Reserve University, where he later became the Charles F. Mabery Professor of Research in Chemistry and, subsequently, the Frank Hovorka Professor of Chemistry. He has co-authored over 250 publications and 5 patents in experimental and theoretical areas of electrocatalysis, energy storage and energy conversion, and has advised 26 PhD students.

Over the years he has distinguished himself by combining theoretical principles with novel experimental strategies to develop and/or implement in situ spectroscopic methods covering a wide spectral range from infrared to synchrotron radiation to study, from a very fundamental viewpoint, problems of direct relevance to energy conversion and energy storage. Particularly noteworthy are his contributions in theoretical and experimental aspects of attenuated total reflection IR and UV vis spectroscopies in the presence of convective flow, and applications of synchrotron based techniques and Raman scattering to in situ studies of materials for batteries, fuel cells and supercapacitors, including actual operating devices. His interests also encompass the coupling of ultrahigh vacuum and electrochemical techniques, electrochemistry in ultrahigh vacuum, as well as the implementation of methods for the ultrafast monitoring of surface dynamics at solid electrode-liquid electrolyte interfaces. More recently, he has also become involved in the application of fundamental concepts of physical electrochemistry to the understanding of neural stimulation. Among his many contributions, Prof. Scherson applied in situ reflectance spectroscopy, X-ray absorption fine structure, atomic force microscopy and microgravimetric techniques to elucidate important aspects of the underlying physico-chemical basis of the operation of nickel oxide electrodes in alkaline environments. In addition, his coupling of forced convection techniques and spectroelectrochemistry enabled new insights to be gained into the reduction of sulfur dioxide in aqueous electrolytes. More recently, he pioneered the use of Fourier transform infrared spectroscopy to the study of the reactivity of Li in ultrahigh vacuum environments and, based on the systematic use of this approach, helped unveil the mechanistic pathway of decomposition of linear and cyclic carbonates commonly used as solvents in lithium battery applications. In recent years, Prof. Scherson's attention has been focused on the application of ultrafast techniques for studies of molecular events at electrochemical interfaces, which culminated in the first real time second harmonic generation monitoring of a surface reconstruction induced by the applied potential in the sub-microsecond regime.

He has been deeply involved in the activities of The Electrochemical Society (ECS), serving as Chair of its Physical and Analytical Electrochemistry and Battery Divisions. He was also Associate Editor and later Editor of the Journal of the Electrochemical Society. In recognition to his many scientific achievements he has received a number of prestigious awards including, the Vittorio de Nora-Diamond

Shamrock Postdoctoral Fellowship (1981), Max Planck Gesellschaft Fellowship (1982-83), IBM Faculty Development Award (1983-85), Japan Society for the Promotion of Science Fellowship (1993-94), David C. Grahame Award of the Physical Electrochemistry Division of ECS (2000), Humboldt Senior Fellowship (2002), Faraday Medal of the Electrochemistry Group of the Royal Chemical Society, UK (2004), Japan Society for the Promotion of Science Senior Travel Award (2007), and was made Fellow of the Electrochemical Society (2007).

Over the past few years he has organized a week long Workshop on Electrochemical Measurements sponsored by the Ernest B Yeager Center for Electrochemical Sciences to provide instruction to participants from academia, industry and National laboratories. As part of the Workshop participants have the opportunity to conduct actual experiments with the assistance of graduate students from Case. Lastly, Prof. Scherson is now serving in the Advisory Committees of the Joint Center for Energy Storage Research, (JCESR), led by G. Crabtree at Argonne National Laboratory, (ANL), and of three Energy Frontier Research Centers, (EFRC) led by D. Wesolowski, Oak Ridge National Laboratory, P. Fenter, Argonne National Laboratory, and S. Whittingham, Binghamton, NY.