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“Corrosion: A Story without End”

DATE: Monday, October 15, 2012
TIME: 4:00 PM
PLACE: 100 Williamson (WM) Hall

REFRESHMENTS – CHEMICAL ENGINEERING DEPARTMENT AT 3:30 PM
Corrosion: a Story without End

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The cost of the corrosion is huge and corrosion problems exist in a large range of domains. Materials that do not corrode or have a very limited corrosion are too expensive to use; thus, industry must choose the best corrosion rate from an economical point of view. The choice corresponds to a material with the correct mechanical properties and with corrosion rates as low as possible. The work of the engineer is to limit or to control corrosion, and for that it is necessary to understand the phenomenon by taking into account that each material-solution couple represents a new problem.

The principle of the corrosion will be given, and from it, galvanic corrosion, cathodic protection, and inhibition will be presented. A few methods for studying corrosion will be described with possible application to the field.

Bernard Tribollet

Bernard Tribollet received his Diplôme d'Ingénieur de l'Ecole Supérieure d'Electricité in 1973 and his Doctorat d'Etat under Israel Epelboin in 1978. He joined the Centre National de la Recherche Scientifique (CNRS) in 1977 in the laboratory directed by Epelboin. In 1981-82 he held a post-doctoral research position at University of California (Berkeley) where he worked with Professor John Newman.

Tribollet is the Associate Director of the Laboratoire Interfaces et Systemes Electrochimique, one of the premier groups in the development and application of impedance techniques. In 1989, their group organized the First International Symposium on Electrochemical Impedance Spectroscopy. Tribollet is an instructor of an annual short course of Université Pierre et Marie Curie on impedance spectroscopy that both covers theoretical aspects of the topic and provides hands-on training with instrumentation. In collaboration with other members of his laboratory, Tribollet has promoted the extension of impedance spectroscopy to other transfer-function techniques, most notably electrohydrodynamic, electromagnetic, and thermoelectric impedance spectroscopies. When used in conjunction with the usual impedance measurements, these extensions allow better definition of the physical properties and phenomena governing a system of interest. Tribollet is a Fellow of The Electrochemical Society. He is Treasurer of the International Society of Electrochemistry and organized the 61st Annual Meeting of the International Society of Electrochemistry, held in September 2010 in Nice, France. With Professor Mark Orazem, he has co-authored a textbook on impedance spectroscopy which was published in 2008 by Wiley.