



*Pair O Docs* 

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**1990**  
**Celebrating 15 years**  
**2005**

### **Dr. William Stephen Tait**

Dr. Stephen Tait is the Chief Science Officer and Principal Consultant for Pair O Docs Professionals L.L.C. He has over 30 years of experience with all aspects of anti-corrosion technology, corrosion measurement and investigating failure of metal structures.

Dr. Tait is a Corrosion Specialist, certified by the National Association of Corrosion Engineers (NACE). He is one of only 18 specialists worldwide who are certified by that organization in chemical treatment of corrosion. He is a member of NACE; the Electrochemical Society; and ASM International.

He holds eight U.S. and foreign patents on **corrosion inhibitors**, corrosion measurement equipment, and a device for monitoring crevice corrosion. Some examples of the corrosion prevention programs he has developed are for food and aerosol containers, vacuum-deposited coatings on glass, consumer electrical appliances, chemical processing equipment and chemical reactors, gas refinery cooling towers, and coatings for both commercial and consumer transportation vehicles.

He is also an industry leader in electrochemical corrosion testing, and the application of reliability engineering to packaging for consumer products. He is the inventor of the *Tait Cell*, GEN3 and GEN4 Multi-cells for electrochemical testing.

His unique combination of education in metallurgy, chemical engineering and chemistry, plus his extensive experience and knowledge on all aspects of metal package construction, filling, corrosion, and modes of failure make him an ideal **expert witness** for commercial and personal injury litigation involving metal packaging.

Dr. Tait developed and managed a world-class corrosion research and testing laboratory while at S. C. Johnson. This laboratory included two satellite laboratories in Europe and China. Test results from these labs allowed low-risk rapid introduction of new products and prevention of both packaging and equipment

failure by corrosion. Earlier, with Petrolite Corporation (a specialty chemical manufacturer for the chemical and oil industries) he developed corrosion prevention and control programs for the petroleum and chemical industries.

Dr. Tait, an accomplished technical author, wrote the textbook on electrochemical corrosion testing. This book has been sold worldwide to industries and universities since its publication in 1994. He writes *Corrosion Corner*, a monthly column for *Spray Technology & Marketing* magazine, and has authored and presented over 80 technical papers and chapters in books. He also is a peer reviewer for many of the technical journals in his field.

He was an adjunct full professor at the University of Wisconsin-Milwaukee. His teaching experience spans over 30 years and includes traditional university classroom and continuing professional education courses in chemistry, chemical engineering, corrosion and materials engineering, corrosion science and engineering.

### **EDUCATION:**

Ph.D., Materials Engineering, University of Wisconsin-Milwaukee  
MS, Chemical Engineering, Washington University in St. Louis  
BA, Chemistry, University of Missouri-St. Louis

### **EXAMPLES OF PATENTS**

U. S. Patent 6,501,286: Multiple Reference Electrode Array for Measuring Open Circuit Potentials in Artificial Crevices

U. S. Patent 4,240,925: Pitting Corrosion Inhibitors

U. S. Patent 4,668,293: Phytate Corrosion Inhibitor System

U. S. Patent 4,668,507: Corrosion Resistant Insecticidal Composition

U. S. Patent 4,720,382: Inhibiting the Corrosion of Hair Conditioning Compositions

### **EXAMPLES OF PUBLICATIONS**

**An Introduction to Electrochemical Corrosion Testing for Practicing Engineers and Scientists**, Pair O Docs Professionals L.L.C., Madison WI (1994)

**Corrosion Corner**, a monthly column on aerosol container corrosion published in the *Spray Technology and Marketing* magazine.

W. S. Tait, **Corrosion Prevention and Control of Chemical Processing Equipment**, Chapter 27 in the Handbook of Environmental Degradation of Materials, William Andrew Publishing, Norwich, NY (2005)

W. S. Tait, Dielectric Properties, Chapter 24 in **Desk Reference of Polymer Characterization and Analysis**, Oxford University Press, Cary, NC (2003)

W. S. Tait, Using Electrochemical Measurements to Accurately and Quickly Estimate Coating and Polymer Film Durability, J. Coatings Technology, (Journal of Coatings Technology, **75** (924), (2003)

W. S. Tait, Make Your Corrosion Data More Reliable, Corrosion Engineering, (May 2002)

W. S. Tait, Increase Your Confidence in Corrosion Data, Materials Performance, March 2001

W. S. Tait, Reliability Engineering: The Commonality between Airplanes, Light Bulbs, and Coated Steel, **Service Life Prediction of Organic Coatings: A Systems Approach**, edited by D. R. Bauer and J. W. Martin, American Chemical Society Symposium Series 722, American Chemical Society, Washington, DC (1999).

W. S. Tait, Using Reliability Statistics to Estimate Metal Container Failure Levels from Censored Tests, **Organic Coatings for Corrosion Control**, edited by G. P. Bierwagen, Chapter 6, pp. 58-68, Symposium Series 689, American Chemical Society, Washington, DC (1998).

W. S. Tait, Aerosol Container Corrosion and Corrosion Testing: What is the State of the Art? Spray Technology, (September 1997).

R. S. Lillard, J. Kruger, W. S. Tait, and P. J. Moran, Using Local Electrochemical Impedance Spectroscopy to Examine Coating Failure, Corrosion, **51**(4), pp. 251-259 (1995)

W. S. Tait, Coping with Errors in Impedance Spectra from Coated Metals, Journal of Coatings Technology, **66**(834), pp. 59-61 (1994)

W. S. Tait and K. A. Handrich, Cation Enhancement of Internally Coated Metal Container Corrosion Failure, Corrosion, **50**(5), pp. 373-377 (1994)

W. S. Tait, K. A. Handrich, S. W. Tait, and J. W. Martin, Analyzing and Interpreting Electrochemical Impedance Spectroscopy Data from Internally Coated Steel Aerosol Containers, in ASTM **STP 1188**, pp. 428-437, American Society for Testing and Materials, Philadelphia, PA (1993)

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