

Exponent®
Engineering & Scientific Consulting

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Professional Profile

Dr. Ockert J. Van Der Schijff is a Principal Engineer in Exponent's Materials and Corrosion Engineering practice. He is a chemical and metallurgical engineer with more than 4 decades of experience in the materials engineering field.

Dr. Van Der Schijff specializes in aqueous corrosion of materials in industrial applications and materials failure analysis in utility, manufacturing, and chemical processing environments. He has managed and participated in a wide variety of failure analysis investigations and condition assessments on individual above ground and buried components such as piping, valves, pumps, tanks, presses, fire protection systems, reactors, bearings, medical devices, and manufacturing machinery to determine the root cause for in-service failures.

Dr. Van Der Schijf is a recognized industry-expert on corrosion and microbiologically influenced corrosion (MIC) of fire protection systems and the use of nitrogen as a supervisory gas in dry and preaction fire protection systems. He also provides consulting services in the fields of corrosion of metals, microbiologically influenced corrosion (MIC), medical device corrosion and failure, materials selection, alloy development, and AC and DC electrochemical techniques for investigation of corrosion mechanisms of metal alloys.

Since 2001, Dr. Van Der Schijff has served as an expert witness on a number of diverse litigation cases dealing with, among other things, corrosion of river going barges, corrosion failure of home heating furnaces, internal corrosion of wet, dry, and pre-action fire protection systems, corrosion of buried fuel and gas piping, corrosion resulting from defective drywall, caustic cracking of refinery components, stress corrosion cracking of dairy processing equipment, pinhole leaks in domestic copper piping, premature corrosion and/or failure of brass, copper, and stainless steel plumbing components, fracture of downhole oil well tubing, materials selection and corrosion of abattoir equipment, corrosion of combined cycle heat recovery steam generators (HRSG's), and the use of light metals and alloys (such as aluminum and magnesium) in automotive applications.

Prior to joining Exponent, Dr. Van Der Schijff founded CorrConsult, LLC, a consultancy providing consulting and litigation support services in the areas of corrosion engineering, metallurgy, forensic science, and failure analysis. Earlier, he was employed at Altran Corporation for a period of 9 years from 1995 through 2003. In his position as Principal Engineer, he was responsible for business development, project management, failure analysis, and contract research in the materials science disciplines.

From 1984 to 1996 Dr. Van Der Schijff was an Associate Professor in the Department of Metallurgical Engineering at the Potchefstroom University in South Africa. In addition to teaching undergraduate courses in materials science, corrosion, pyrometallurgy and thermodynamics, he conducted research in the field of corrosion. During this time, he also consulted widely to industry in the fields of chemical engineering, materials science, metallurgical engineering, corrosion, and wear.

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Previously, Dr. Van Der Schijff was employed by the Council for Mineral Technology (MINTEK) in South Africa as a contract researcher where he conducted research into the plasma smelting of directly reduced iron. This led to a master's degree in metallurgical engineering from The University of Pretoria in 1986. Dr. Van Der Schijff completed a Ph.D. in metallurgy at the University of Connecticut in 1990 where he worked in the Institute of Materials Science under the advisorship of Prof. Owen Devereux. In 2001, he was awarded an MBA from the Potchefstroom Business School at North-West University.

Dr. Van Der Schijff has been a registered Professional Engineer with the Engineering Council of South Africa since 1990. Since 2005, he has been a registered International Professional Engineer under the International Professional Engineering Alliance (IPEA) (Registration #: #200560006). Dr. Van Der Schijff is also a licensed Professional Engineer (License #: 121769) in the State of Texas. He is an AMPP (formerly NACE) Certified Materials Selection/Design Specialist and Certified Corrosion Specialist (AMPP Certification #: 10186).

Dr. Van Der Schijff has more than 35 papers and conference presentations to his credit. In addition, he has published more than 250 technical reports dealing with various aspects of materials, failures, and corrosion.

Academic Credentials & Professional Honors

M.B.A., Potchefstroom University, South Africa, 2001

Ph.D., Metallurgy, University of Connecticut, 1990

M.Eng., Metallurgical, University of Pretoria, South Africa, 1986

B.Eng. (Hons), Metallurgical, University of Pretoria, South Africa, 1984

B.Eng., Chemical Engineering, University of Pretoria, South Africa, 1982

B.Sc., Chemistry, Mathematics, University of Pretoria, South Africa, 1979

Licenses and Certifications

International Professional Engineer (Chemical), IPEA, , #200560006

Professional Engineer Metallurgical, South Africa, #900384

Professional Engineer Metallurgical, Texas, #121769

AMPP Certified Corrosion Specialist

AMPP Certified Materials Selection/Design Specialist

Prior Experience

President, CorrConsult, LLC, 2008

Sole Proprietor, CorrConsult, 2004-2007

Principal Engineer, Altran Corporation, Materials Engineering Division, 2003-2004

Senior Engineering Consultant, Altran Corporation, Materials Engineering Division, 1998-2002

Engineering Manager, Altran Materials Engineering, Inc., 1996-1998

Senior Scientist, Altran Materials Engineering, Inc., 1995-1996

Associate Professor, Potchefstroom University, 1991-1996

Senior Lecturer, Potchefstroom University, 1988-1990

Research Assistant, University of Connecticut, 1987-1990

Research Assistant, University of Minnesota, 1986-1987

University Lecturer, Potchefstroom, 1984-1987

Contract Researcher, MINTEK, 1983-1984

Professional Affiliations

South African Institute of Mining and Metallurgy, 1986 (Fellow)

AMPP (Formerly NACE International) 1987 (Fellow)

ASM, 1987 (Life Member)

NFPA, 2001 (Member)

ASTM (Voting Member)

Languages

Afrikaans

Publications

Nirankari, V., James, B., Hudgins, A., Budiansky, N. and Van Der Schijff, O.J. "Grooving Corrosion: Features, Mechanisms, and Case Studies of Selective Seam Weld Corrosion," Journal of Failure Analysis and Prevention, May 2026. DOI: 10.1007/s11668-026-02438-1

Budiansky ND, Forman J, Van Der Schijff O. "The Role of Computed X-ray Tomography in a Metallurgical Failure Analysis," Microscopy and Microanalysis, 2015, 21(S3), 445-446. DOI: 10.1017/S1431927615003025

Van Der Schijff OJ, Bodemann SC. Corrosion of piping in dry and pre-action fire sprinkler systems interim results of long-term corrosion testing under compressed air and nitrogen supervision. Sprinkler Age 2013 Oct; 32(10):16-21.

Van Der Schijff OJ, Bodemann SC. Corrosion in dry and preaction systems - Part 2. Fire Protection Contractor Magazine 2012; 35(1).

Van Der Schijff OJ, Bodemann SC. Corrosion in dry and preaction systems - Part 1. Fire Protection Contractor Magazine 2011; 34(12).

Van Der Schijff OJ, Shenkiryk M, Farello L. Fire sprinkler systems—Corrosion related failures: Part II. Fire Protection Contractor Magazine 2003; 26(7).

Van Der Schijff OJ, Shenkiryk M, Farello L. Fire sprinkler systems—Corrosion related failures: Part I. Fire

Protection Contractor Magazine 2003; 26(6).

Smit JJ, Van Der Schijff OJ. Characterisation of membrane materials by means of electrochemical impedance spectroscopy. Water SA 1996; 22(3).

Van Der Schijff OJ. Case study: Failure of a reboiler. Corros Coat 1994; 11-12.

Van Der Schijff OJ, Devereux OF. AC induced pitting of tin-coated copper utility cables. Corrosion 1993; 49(4).

Van Der Schijff OJ, Devereux OF. The AC-induced corrosion of copper neutrals. Corros Sci 1993; 35(5-8):1279-1287.

Vorster SW, Van Der Schijff OJ. The oxidation of silicon-containing motor lamination steels. South African J Chem Eng 1993; 5(2).

Van Der Schijff OJ, Devereux OF. AC-induced localized corrosion of tin-coated copper conductors in simulated soil environments. Corrosion 1992; 48(2).

Smith DJ, Van Der Schijff OJ. Corrosion of galvanized steel and carbon steel in deaerated aqueous solutions of industrial fertilizer chemicals. Br Corros J 1989; 24(3).

Conference Presentations

Van Der Schijff OJ, Bodemann SC. Corrosion in dry and preaction systems: Preliminary results of long term corrosion testing under compressed air and nitrogen supervision. Technology Exchange Group 159X, NACE International, Corrosion 2012 Conference and Expo, Salt Lake City, UT, March 13-17, 2012.

Van Der Schijff OJ, Latanision RM. Pipeline condition assessment—Locating, diagnosing, and mitigating corrosion damage. NACE International, Corrosion 2011 Conference and Expo, Houston, TX, March 13-17, 2011.

Van Der Schijff OJ, O'Neill J.G. Mitigating internal corrosion in automatic sprinkler systems. SFPE Greater Atlanta Chapter, 2011 Fire Safety Conference, Session 2C, Atlanta, GA, March 14-16, 2011.

Van Der Schijff OJ. MIC in Fire Sprinkler Systems— Field Observations and Data. NACE International, Corrosion 2008 Conference and Expo, New Orleans, LA, March 16-20, 2008.

Van Der Schijff OJ, O'Neill J.G. Mitigating internal corrosion in automatic sprinkler systems. NFPA World Safety Conference & Exposition, Session M56, Part 1, Boston, MA, June 4, 2007.

Roman MC, Macuch P, McKrell T, Van Der Schijff OJ. Assessment of microbiologically influenced corrosion potential in the International Space Station internal active thermal control system heat exchanger materials: A 6-month study. Proceedings, International Conference of Environmental Systems, Rome, Italy, July 2005.

Service TH, Latanision RM, Van Der Schijff OJ, Molina C, Mayrbaurl R, Paskova T. Strength degradation, cracking and corrosion of galvanized high strength suspension bridge cable wire. Proceedings, 3rd International Suspension Bridge Operators Conference, Kobe, Japan, May 2002.

Mittelman MW, Macuch P, Van Der Schijff OJ. Genesis and control of MIC in wet and dry type fire protection systems. Proceedings, Symposium on Microbiologically Influenced Corrosion, Corrosion/2002 International Conference, Denver, CO, April 2002.

Van Der Schijff OJ. Degradation of sprinkler piping: Recognition and mitigation. California Fire Prevention Institute 11th Annual Fire Prevention Workshop, Monterey, CA, February 4-8, 2002.

Roman MC, Van Der Schijff OJ, Macuch P, Mittelman MW. Preliminary assessment of microbial adhesion on the surface of materials from the ISS internal thermal control system: Results of an accelerated 6-d study. Proceedings, 31st International Conference on Environmental Systems (ICES), Orlando, FL, July 2001.

Vassallo TP Jr, Letourneau KJ, Van Der Schijff OJ. What caused the failures of the Westinghouse type AR relays. Proceedings of ICONE 8, 8th International Conference on Nuclear Engineering, Paper ICONE-8551, Baltimore, MD, April 2-6, 2000.

Esselman T, McBrine WJ, Van Der Schijff OJ, Mittelman MW, Latanision RM. Corrosion monitoring and mitigation to improve plant performance. PLIM/PLEX 99 Conference, 3rd International Conference on Pipeline Safety, Madrid, Spain, November 3-5, 1999.

Latanision RM, Leisk GG, McBrine WJ, Esselman T, Van Der Schijff OJ. Application of Practical aging management concepts to corrosion engineering. Plenary Lecture, 14th International Corrosion Congress, Cape Town, South Africa, September 27-October 1, 1999.

Van Der Schijff OJ, Latanision RM, Wronski PW. Corrosion phenomena in valve regulated, non-flooded, recombinant lead-acid cells. 14th International Corrosion Congress, Cape Town, South Africa, September 27-October 1, 1999.

Van Der Schijff OJ, Potgieter JH, Nana S. The corrosion behaviour of high manganese duplex stainless steels. 6th International Corrosion Conference "Cost Effective Corrosion Control into the 21st Century," Durban, South Africa, August 29-31, 1994.

Vorster SW, Van Der Schijff OJ. An EIS study of the corrosion of aluminum alloys by chlorinated hydrocarbons. 2nd International Symposium on Electrochemical Impedance Spectroscopy, Santa Barbara, CA, July 12-17, 1992.

Van Der Schijff OJ, Devereux OF. AC-Induced localized corrosion of tin-coated copper cables in simulated soil environments. Advances in Corrosion and Protection International Conference, UMIST, Manchester, UK, June 28-July 3, 1992.

Van Der Schijff OJ, Devereux OF. An investigation of localized corrosion of tin-coated copper neutrals. 6th National Conference of the South African Institute of Chemical Engineers, Durban, South Africa, August 7-9, 1991.

Vorster SW, Van Der Schijff OJ. The oxidation of silicon-containing motor lamination steels. 6th National Conference of the South African Institute of Chemical Engineers, Durban, South Africa, August 7-9, 1991.

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Van Der Schijff OJ. AC Effects in the localized corrosion of tin-coated copper neutrals. Corrosion/91 International Conference, Cincinnati, OH, 1991.

Van Der Schijff OJ. Aspects of copper concentric neutral corrosion in underground rural distribution systems. Corrosion/89 International Conference, New Orleans, LA, April 1989.

Van Der Schijff OJ. Corrosion of copper concentric neutral in underground rural distribution systems. Corrosion/88 International Conference, St. Louis, MO, March 1988.

Van Der Schijff OJ. Plasmamelting of directly-reduced iron. Poster session and demonstration-experiment - MINTEK/50 International Conference, Randburg, South Africa, March 1984.