



Mr. Peter Rudling
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Areas of Expertise

- Fuel performance during normal and accident conditions as well as during wet and dry storage
- Impact of water chemistry on fuel performance
- Fuel reliability
- Zr alloy material development. I hold 5 worldwide patents on new alloys.
- Fuel assembly manufacturing. During my carrier, I have audited WES, AREVA and GNF Fuel Fabrication.
- Lecturing in the areas mentioned above
- Chairing and organizing international conferences/seminars

Professional Experience

- Since 2001 president and owner of ANT International.

The company is specialized in providing expert training and knowledge in the areas of nuclear fuel, reactor materials and water chemistry. About 20 International Experts in structural material integrity, corrosion/plant chemistry and nuclear fuel areas with more than 600 years of experience are included in a network managed by ANT International. The products and services we provide are annual training programmes, handbooks & reports on current issues and tailored seminars on site by these International Experts.

World-wide 74 organisations in 21 countries are customers to ANT International.

The customers include;

- utilities with more than 230 nuclear units,
 - fuel vendors,
 - engineering companies,
 - research laboratories,
 - research reactors and regulators.
- 1998–2001 Vattenfall Fuel – as fuel senior specialist (is a consulting company providing services to the Vattenfall owned Forsmark and Ringhals nuclear reactors)
 - 1990–1998 Westinghouse Sweden – specialist on fuel cladding development
 - 1988–1990 Electric Power Research Institute (EPRI), CA, USA – Project Manager for various fuel performance related projects sponsored by EPRI
 - 1981–1990 ABB Atom (now Westinghouse Sweden) – Specialist on fuel manufacturing development related to Zr alloy

Education

- Master Degree in Metallurgy and Materials Technology, 1981

Publications

Mr. Peter Rudling has authored/co-authored more than 150 publications. Below are some examples:

Rudling P. et al, Corrosion performance of Zircaloy-2 and Zircaloy-4 PWR fuel cladding,

Proc 8th International Conference on Zirconium in the Nuclear Industry, San Diego, USA, 1988.

Rudling P. et al, Corrosion performance ranking of Zircaloy-2 for BWR applications,

Proc 8th International Conference on Zirconium in the Nuclear Industry, San Diego, USA, 1988.

Rudling P. et al, Corrosion and hydriding performance of ABB Atom BWR fuel cladding, Proc 12th Scandinavian Corrosion Confress & Eurocorr '92.

Rudling P. et al, Corrosion performance of new Zr-2 base alloys, Proc 10th International Conference on Zirconium in the Nuclear Industry, Baltimore, USA, juni-1993.

Boel Wadman, Hans-Olof Andrén, Anna-Lena Nyström, Peter Rudling, Håkan Pettersson, Microstructural influence on uniform corrosion of Zircaloy nuclear fuel claddings, Journal of Nuclear Materials, Vol 200, Issue 2, pages 207-21, April 1993.

Boel Wadman, Zonghe Lai, Hans-Olof Andrén, Anna-Lena Nyström, Peter Rudling, Håkan Pettersson, Microstructure of Oxide Layers Formed During Autoclave Testing of Zirconium Alloys, Proc 10th International Symposium on Zirconium in the Nuclear Industry, Baltimore 1993.

Gunnar Wikmark, Peter Rudling, Börje Lehtinen, Bevis Hutchinson, Anders Oscarsson, Elisabet Ahlberg, The Importance of Oxide Morphology for the Oxidation Rate of Zirconium Alloys, Proc 11th International Symposium on Zirconium in the Nuclear Industry Garmisch, 1995.

Rudling P. et al, PCI performance of PWR rods with excessive oxide spalling and large hydrogen content, Proc IAEA Technical Committee Meeting on "High Burn-up Fuel Specially Oriented to Fuel Chemistry and Pellet Clad Interaction", Nyköping, Sweden, 7-11 September 1998.

Rudling P. et al, Impact of second phase particles on BWR Zr-2 Corrosion and Hydriding Performance, Proc 12th International Symposium on Zirconium in the Nuclear Industry, Toronto, Canada, 1998.

Rudling P., Gunnar Wikmark, A unified model of Zircaloy BWR corrosion and hydriding mechanisms, Journal of Nuclear Materials 265 pp 44-59, 1999.

Rudling P. et al, Requirements of the fuel of the future – vattenfall perspective, Report, 1999.

Rudling P., Accelerated shadow corrosion in BWRs, Presentation at the 30th IUNEPC Conference, Seattle, 2000.

Rudling P. and Tore Ingemansson, Assessment of fuel washout in PWRs based upon Rb-88 and Rb-89 coolant activities-a new PWR degradation methodology, Presentation at 33rd IUNEPC, San Diego, 2003.

Lars Olof Jernkvist, Ali R. Massih, Peter Rudling, A Strain-based Clad Failure Criterion for Reactivity Initiated Accidents in Light Water Reactors, Report, TR 03-008, December 2003.

Lars Olof Jernkvist, Ali R. Massih, Peter Rudling, A Strain-based Clad Failure Criterion for Reactivity Initiated Accidents in Light Water Reactors, SKI Report 2004:32, August 2004.

Rudling P., A summary of European fuel performance, Presentation at the 34th IUNFPC Conference Birmingham, 2004.

Tore Ingemansson, Peter Rudling, and Klas Lundgren, Assesment of fuel washout in LWRs – new methodologies, Paper 1002, Proc International Meeting on LWR Fuel Performance, Orlando, Florida, September 19-22, 2004.

Tore Ingemansson, Peter Rudling, and Klas Lundgren, Assessment of Fuel Washout in BWRs and PWRs based upon Sr-92 and Rb-88/89 Coolant Activities, respectively, KTG conference on "Improvements in Reliability for Nuclear Fuel Elements" Karlsruhe 30-31 March, 2004.

Alfred Strasser, Kenny Epperson, Jerry Holm, Peter Rudling, Design Reviews for Reliable Fuel Performance, Paper 10, Top Fuel WRFPM Orlando USA 2010.

Friedrich Garzarolli, Ron Adamson, Peter Rudling, Optimization of BWR fuel rod cladding condition for high burnups, Paper 004, Top Fuel WRFPM Orlando USA 2010.

Author and coauthor to more than 50 A.N.T. International Reports during 2000-2020.

Honorary Assignments and Rewards

- Editorial Chairman of the 13th International Zirconium in the Nuclear Industry Symposium
– proceedings published by ASTM in STP 1423, Dec. 2002 (ISBN: 0-8031-2895-9)
- Symposium Chairman of the 14th International Zirconium in the Nuclear Industry Symposium
– proceedings published by ASTM in STP 1467, Feb. 2006 (ISBN: 0-8031-3493-2)
- Scientific editor of the Guide in the IAEA Nuclear Energy Series entitled: Guide on Fuel Engineering for Water-Cooled Nuclear Power Reactors.
- Recipient of the Kroll Award¹ in 2016.

¹ The William J. Kroll Zirconium Medal has been established to recognize outstanding achievement in the scientific, technological or commercial aspects of zirconium production and utilization, and to encourage future efforts, studies and research. The award is given to one person per year.