

The Antenna

NEWSLETTER FROM ANT INTERNATIONAL No.18 2011

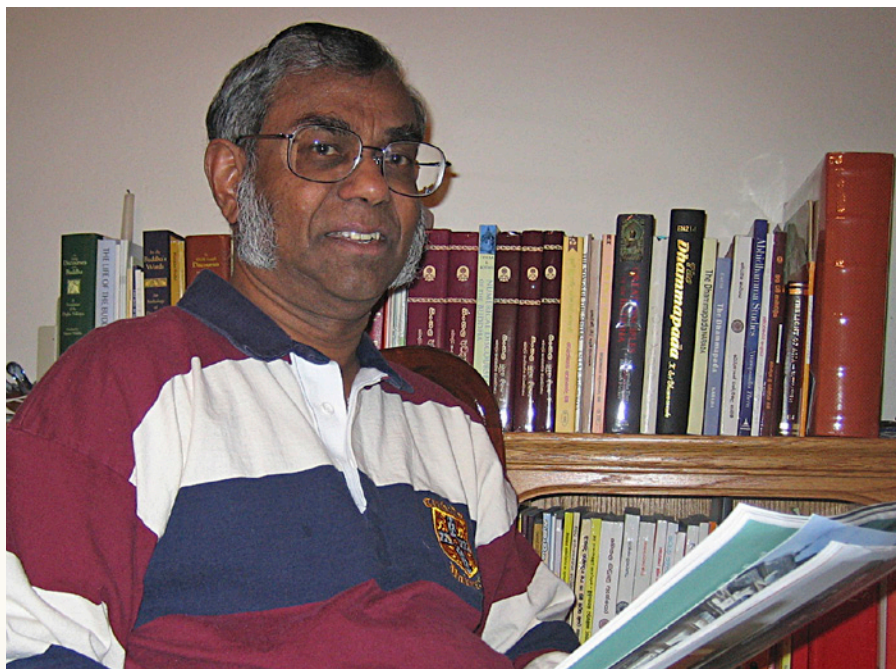
PLEASE NOTE – NEW INVOICE ADDRESS

From June 27th 2011, all invoices to ANT International in Sweden should please be sent to our new office and postal address:

ANT International, Analysvägen 5, 435 33 Mölnlycke, Sweden.

Have a wonderful summer!

NETWORK CLOSE UP



Samson Hettiarachchi

Your name, title, where you live

Samson Hettiarachchi (I prefer to be called Sam), BWR Technologist/Consultant, 19 Lorelei Lane, Menlo Park, CA 94025

How did you get started as an engineer?

I did an Honors degree (B.Sc) in Chemistry at the University of Colombo, Sri Lanka, and then completed my Ph.D. degree at the University of Cambridge, England in 1976. My post-graduate work was on the electrochemical corrosion of high nickel alloys.

Your career history?

After the Ph.D. degree, I served the

Chemistry Department of the University of Colombo as an Assistant Lecturer/Lecturer/Senior Lecturer in Physical Chemistry until 1983. When my sabbatical leave was due, I joined the Ohio State University where I developed zirconium based high temperature pH sensors for both nuclear and fossil power plant applications. Thereafter, I joined SRI International (formerly Stanford Research Institute) to work on a variety of electrochemical and corrosion research projects that included research on lithium batteries, oxygen separation from air, corrosion of concrete, corrosion of aircraft materials, corrosion of nuclear reactor structural materials and development of ECP

and pH sensors for BWR, PWR and fossil power plant applications.

In 1991, General Electric Company hired me primarily to develop and introduce zirconium based ECP sensors for BWR in-reactor applications. During my early career at GE, I also worked on the stress corrosion cracking of stainless steels and nickel alloys, and also on the corrosion of zirconium alloys. I invented both noble metal injection and on-line noble metal injection technologies that are widely used for SCC mitigation of BWR structural materials. I have worked at many BWR plants in the US, Japan and Europe conducting HWC tests, and led many noble metal/on-line noble metal applications in the US, Japan and Europe. In the nuclear division of the General Electric Company, I held the positions of Principal Engineer, Engineering Fellow, Chief Technologist/Chemistry and Chief Engineer/Physical Sciences, until I retired from GE in February 2011. I have also been actively involved in the mitigation committee meetings conducted by EPRI. My specialized experiences are in Chemistry, Electrochemistry, Corrosion and sensor development for nuclear power plant applications. I have authored or co-authored over 100 papers in Journals and International Conference Proceedings, and hold 27 US patents. After retirement, I am consulting for a few organizations in my areas of expertise.

How did you get introduced to ANT International and the LCC Program?

I was introduced to ANT International ►

▶ simultaneously by both Bob Cowan and Francis Nordmann. My friend Peter Ford, whom I have known for almost four decades, also encouraged me to join ANT International.

How has the field of water chemistry issues changed during your career?

When I joined the BWR field, zinc injection has just begun for dose rate control, and the focus has shifted more towards IGSCC mitigation of reactor internals. When I came with the idea of injecting noble metals in to BWRs, it created a paradigm shift and there was a great deal of resistance to add chemicals in to BWRs that are meant to operate with pure water. Overcoming this resistance was a challenge that created a major water chemistry change to operating BWRs.

What do you foresee for the future in the nuclear industry and how does the LCC program fit in?

I think the nuclear industry will continue to be a part of the energy mix in developed countries.

The LCC program provides a platform for close technical interaction between plant operators and other BWR experts to make continuing improvements to operate plants safely and cost effectively. In addition, LCC program also provides a training ground for younger engineers.

How do you spend your leisure time?

I am an avid cricket fan and a keen tennis enthusiast. I watch and play both these sports whenever I get an opportunity. I also do gardening and meditation to relax and calm my mind. My wife Kanthi and I always look forward to traveling to Sri Lanka once a year.

More about ANT International Network Members [here](#)

“LCC Tailored Seminar of great value to new generation of engineers”

NUCLEAR POWER PLANT KRŠKO (Slovenia) has in the last few years hired several new employees who are trained to work directly or indirectly on the chemistry of water media. We used our membership in the LCC Program run by ANT International to implement a two-day tailored course, which was held in February 2011 at the Plant's Training Facility in Krško. The lectures were attended by app. 20 colleagues from various organizational units: Chemistry, Fuel, Radiological Protection, Production, QA and Maintenance (ISI Group). Two experts, Dr. Francis Nordmann and Dr. Hartmut Venz covered numerous theoretical and practical areas from chemistry of water media of primary and secondary side, corrosion and

other degradation mechanisms which influence the chemical program, conditions of materials, review of practice and experiences from other plants, and chemistry activities during startups and shutdowns.

Our younger colleagues, as well as everyone else present, were delighted with the high level of expertise and professionalism provided by the two conducting lecturers. Without a doubt it will present great support for their work, further qualifications and careers. Nuclear Power Plant Krško strongly recommends such training to other plants, especially the ones which are dealing with a new generation of nuclear workers.

What do other customers say about ANT International? [Read more](#)



Milan Simončič, Analytical & radiochemistry lead engineer and Željko Kovač, Chemistry superintendent at Krško NPP.

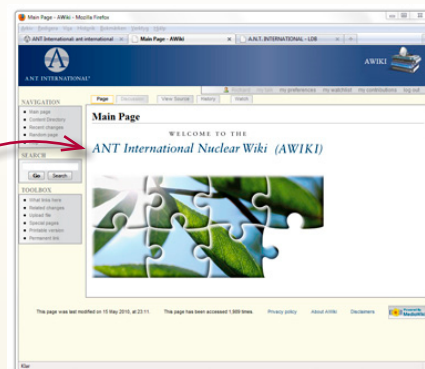
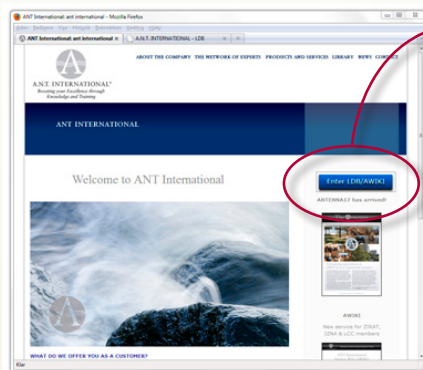
Sign up for the AWIKI!

All our ZIRAT, LCC and IZNA Members can sign up for the AWIKI. It's a powerful Nuclear Wikipedia which contains key results from all ZIRAT, IZNA and LCC reports. Through the AWIKI you can quickly retrieve the information you are looking for and get information on specific reports providing more information. You log on to the AWIKI from our website.

View a demo of the AWIKI [here](#).

Please contact Ida Balog for more information and an offer at ida.balog@antinternational.com

Here you log on to the AWIKI.
All log on details are given to you after your company has signed up.



You are now logged on
– and can start to use the AWIKI.

FEEDBACK ON ANT INTERNATIONAL LCC SEMINARS AND REPORTS

“Valuable for the training of personnel in the fields of chemistry and materials”



Dewey Rochester, Corporate Chemistry Manager, Duke Energy (retired)

WHEN I BEGAN my career in 1974 at Duke Energy's Oconee Nuclear Station, there were only a few operating commercial nuclear power plants in the U.S. and in Europe. As with any relatively new enterprise the communications systems among the

utilities were not well established either in the U.S. units or with the European ones. At this time, the utilities relied on the large Nuclear Steam System Suppliers to provide them the information because there no other avenues for the exchange of operating experience.

As a consequence, information was slow to arrive and incomplete in details since it was largely biased toward successes rather than failures.

The situation now is much improved over the “old days” but, at least for U.S. utilities, European experience tends to be focused on specific subjects as opposed to general operating practices. Through both the ANT International LCC Seminars and the published LCC reports, there is a wealth of information available regarding European operating experience, in both the chemistry and materials areas. Also, contained in these reports and seminars is information that is valuable to anyone involved in the training of personnel in the fields of chemistry and materials. Chemistry and Materials personnel in the U.S. (and Europe) will benefit from these seminars and reports.

[Read more](#)

“Excellent intro to the world of Zirconium”

FOLLOWING THE HIGHLY successful workshop held at the Idaho National Laboratory in June 2010 titled “Environmentally-Assisted Degradation of Structural Alloys in Light Water Reactors”, ANT International was invited back to Idaho Falls to lead a seminar on “Zirconium-based Alloys in Nuclear Systems”. This second seminar, also covering a day-and-a-half was held on 10–11 May 2011. The goal of this seminar was to educate a number of INL staff and junior faculty from around the country on the key degradation issues experience by zirconium alloys used primarily as cladding in nuclear systems. And also to reinvigorate interest and help kick start a new generation of researchers targeting better fuel performance in nuclear systems.

Dr. Todd Allen, the Scientific Director of the Advanced Test Reactor National Scientific User Facility, organized the seminar, which was presented by Mr. Peter Rudling and Dr. Ron Adamson (Go Badgers) of ANT International. The topics covered included zirconium alloys used in nuclear systems, radiation damage, mechanical properties, response to accident conditions, corrosion,

dimensional stability, and performance limitations. The seminar finished with Mr. Rudling and Dr. Adamson presenting a list of key research challenges for the group to commence understanding and the participants vowed to get working.

The size of the audience was about double that of the 2010 seminar as positive word of mouth led to requests from many INL staff to join the seminar. The room size ultimately limited the final attendance numbers to 45 participants. The audience members, who engaged Mr. Rudling and Dr. Adamson with questions during the presentations, provided extremely positive feedback for the instructors and the material presented. The participants were quite pleased with the contents of the workshop.

“It was a great workshop. The teachers were excellent and very knowledgeable. I appreciated the basic introductions to the reactor concepts and materials issues. I was familiar with many of them but for those that I wasn’t, it was extremely helpful to be given the background. Thank you!”

“Excellent intro to the world of Zr, the passion/excitements of speakers

were great. I’m happy I was able to attend.”

The Idaho National Laboratory is planning a similar seminar in 2012 on uranium dioxide performance in nuclear systems. Participants from the May 2011 seminar have already asked for places in the 2012 course.

[Read more](#)

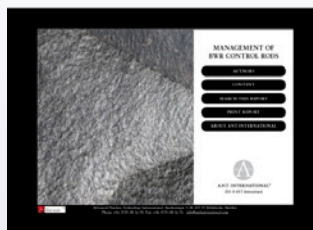


Biography: Todd Allen obtained his Ph.D. in nuclear engineering from the University of Michigan. His background is in radiation effects and corrosion in nuclear systems. He is the Scientific Director of the Advanced Test Reactor National Scientific User Facility at the Idaho National Laboratory, Director of the Center for Material Science of Nuclear Fuel at INL, and an Associate Professor at the University of Wisconsin.

NEW REPORT

Management of BWR Control Rods – MBCR

This Report will become available beginning of July 2011. Already now you can [read](#) part of the first chapter on our website, where you also can [download](#) product information. For more information and/or an offer please contact Ida Balog at ida.balog@antinternational.com



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