

International Committee for Ion Exchange

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Editor: Professor Michael Cox, University of Hertfordshire, Hatfield, AL10 9AB, U.K.
(m.cox@herts.ac.uk)

Since the last regular Newsletter in February we have held a very successful Ion Exchange Workshop in Turkey, a report of which is contained below. Also we have heard of the deaths of two eminent ion exchange scientists, Dr Tom Arden and Prof Z Matijka, and tributes to their life and work from colleagues and friends appear immediately below.

Finally included in this Newsletter are details of the web-sites announcing forthcoming International Ion Exchange Conferences in 2007 and 2008.

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Dr Thomas Victor Arden (11 November 1918 - 2 July 2005)

In the aftermath of the long summer drought of 1976, Tom Arden presented an invited lecture on the theme of water economy to the CBI in London and stated “water, unlike food, fuel and power was never consumed but simply borrowed from rivers, lakes and underground supplies and returned after use with some level of contamination to be purified and re-used repeatedly”. He spoke with great authority as one of the UK’s leading experts in water, waste-water and sewage treatment. His profound words are just as relevant today as this country faces yet another serious drought. He devoted his life to the study and exploitation of ion exchange technology and was eminent as an industrialist and scholar.

Thomas Victor Arden graduated with a first class honours degree in chemistry at Birkbeck College, University of London, in 1939 while a member of the research staff of manufacturing chemist Macleans. In 1941, he volunteered for flying duties in the Royal Air Force and was commissioned as a Flight Lieutenant Navigator (Radar) in 264 Squadron. He remained on active service throughout the entire Second World War. He joined the Chemical Research Laboratory (CRL), Teddington in 1946 as a research chemist to study the chemistry of uranium minerals, with special reference to the recovery and concentration of this strategic material from low-grade ore bodies. Although much of this work was subject to national security at the time, he ultimately published widely on the solution chemistry of uranium, the hydrolytic reactions of uranium with the many other metals associated with it in its naturally occurring state and its separation in solution by chemical and physical methods. The late 1940s and early 1950s marked a period of immense enthusiasm for the study of ion exchange resins derived from polymeric precursors. Arden and his co-workers at the CRL immediately identified the potential of anion exchange resins for the separation and recovery of uranium from acid and alkaline solution. Their pioneering work opened the field of ion exchange in uranium hydrometallurgy. In 1952, Tom Arden left the CRL to take up a position as head of applied ion exchange development at the Permutit Company in London. He was at the forefront of the development of ion exchange process technology in the uranium industry. For example, he led a team of chemists and engineers in the design of the ion exchange recovery plant at Rum Jungle Mine, near Darwin, Australia and was present at the grand opening ceremony of the project, by the then Prime Minister of Australia, Robert Menzies, in September 1954. He was also a representative on the USA/British Government Mission to South Africa in 1950 that opened up the gold mines for the large-scale production of uranium as a by-product. His pioneering experimental work in the field of uranium hydrometallurgy was recognised in 1952 by a Sir George Beilby Memorial Award. He was awarded a PhD in

1953 and a DSc degree in 1961 at the University of London for his research in uranium hydrometallurgy. In later years, his outstanding work and status in the field of ion exchange was further recognised by the Society of Chemical Industry with the Ion Exchange Award that was presented to him at the 1992 SCI International Ion Exchange Conference in Cambridge.

Arden's talents extended far beyond uranium hydrometallurgy and he published widely on all topics embracing ion exchange. His widely acclaimed book entitled *Water Purification by Ion Exchange* was published in 1968 and remains a seminal textbook to this day. His rise to senior industrial positions was relentless and during the period 1952-1977 he became technical director of the Permutit Company and later after this company was re-engineered he became managing director of Zerolit, a then a director of Portals Water Treatment. Arden retired from the board of Portals Water Treatment in 1978 and joined the Water Research Centre as head of the newly formed European Division. His role was to establish technical liaison with the European Community in water treatment and supply. He later became director of administration at the Water Research Centre, Medmenham Laboratory. In 1982, he set up a private consultancy specialising in ion exchange, water treatment and membrane processes.

In his spare time, Arden was extremely active in the show jumping community, organising events and acting as a judge at local and county shows and at the driving trials at The Equestrian Club in Windsor Park. He continued to pursue an active professional life until ill health finally slowed him down. Tom Arden was a formidable leader, a gifted teacher and researcher and will be remembered for his remarkable knowledge, thoroughness and commitment to detail.

Prof Michael Streat, Emeritus Professor Loughborough University, Visiting Professor Imperial College of Science, Technology and Medicine, London.

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Prof. Zdeněk Matijka (30th April 1937 – 2nd October 2006)

Professor Zdeněk Matijka died after a long illness on 2nd October 2006 in Prague, Czech Republic aged 69. He started his scientific career at the Institute of Chemical Technology (ICT), Prague in the Department of Water Technology where he received his master's degree in 1960. From 1960 -1972 he worked at the Water Research Institute of CKD Dukla Co, Prague as a technical, research, and scientific fellow. While working at the Institute he started an external doctor course at ICT in 1964. He defended his PhD thesis entitled: "Continuous production of ultra-pure water by electrodeionization" in 1967.

In 1972 he moved to the department of power Engineering, ICT where he worked as a research associate and assistant professor. Soon after the 'velvet revolution' in 1990 he was promoted to associate professor for his work on application of ion exchange for environmental protection. He was promoted to full professor of Environmental Protection Technology at ICT in 2000. Apart from his teaching and research duties he served two consecutive terms as a Head of the Department of Power Engineering starting from 1997.

During his career at ICT he taught many courses in the field of industrial water treatment, ion exchange, and separation chemistry. He taught, inspired and supervised numerous students and established many scientific contacts world-wide, especially in Japan, but also in Germany, Turkey, USA, etc. He always tried to promote international exchange by encouraging his students and colleagues and helping them find a position abroad.

After his retirement at the mandatory age of 65 (in 2002) he remained at the Department of Power Engineering in a half-time contract position, still teaching students and offering advice and counsel to his younger colleagues. He continued to work in the Department until his last day.

His death is a great loss to his family, his colleagues, and all the numerous friends in the ion exchange community across the globe.

Prof. Václav Janda, Department of Power Engineering, Institute of Chemical Technology, Praha, Czech Republic (e-mail: Vaclav.Janda@vcht.cz)

Ion Exchange Workshop (IEW2006)

Advances on Frontiers and Interfaces of Ion Exchange, 11-15th June 2006 Antalya, Turkey

At IEX2004 it was agreed that a workshop devoted to advances in ion exchange should be held similar in format to the Gordon Conferences. Following these conference discussions started over possible venues in the USA and Turkey. The decision was taken to hold the meeting in Turkey because of possible visa problems for potential delegates travelling to the USA. Within Turkey a number of centres were inspected by Profs Kabay and SenGupta following which a hotel in Antalya was chosen. An important consideration was finance and sponsors were sought from international companies in the field of ion exchange and from the Turkish Technical Research Council, universities, and industry. An important decision was to employ a local tour agency to help with organisation thereby removing a considerable workload from the Organising Committee. This proved to be an excellent decision.

This was following by a call for papers, the preparation of a dedicated web-site and invitations to eminent speakers.

In the end 150 delegates attended the workshop from 22 countries with a significant percentage of students; of which 19 were invited speakers (11 countries) and in addition there were 98 poster papers (22 countries). One important feature of the Workshop were the Brain-storming Sessions led by two chairmen featuring the topics of: Ultra-pure Water, New Materials in Ion Exchange, and the final session: Ion Exchange can it ever be environmentally benign? These discussion sessions were very wide-ranging and investigated a lot of important topics.

Finally by a lot of good housekeeping and control the Workshop broke even financially. From reports I have received and my own experience of the meeting, everyone found the meeting to be a worthwhile experience giving the opportunity for extended discussion of both oral and poster papers over a wide range of topics. Also because all the delegates were in the same hotel it provided time to meet old friends and make new contacts.

Following the success of this first Workshop the International Committee have decided to repeat the experiment in 2009 in Barcelona. Details will be circulated when available.

Future Conferences/Meetings

2007, June 6-7, 2007 Workshop on Condensate Polishing

The organizers of this meeting sponsored by EPRI invite papers describing research, development, and operational issues associated with the condensate polishing system, and other auxiliary systems important in maintaining optimal plant chemistry. The meeting will be held at The Hotel Zoso, Palm Springs, California and further details can be obtained from: Linda Nelson (Lnelson@nycap.rr.com)

2007, June 10-14th ‘Ars Separatoria 2007’

The main objective of this international symposium organised by Wroclaw University of Technology and the Nicolaus Copernicus University is to present and discuss the latest trends and achievements in separation, isolation and purification including ion exchange, solvent extraction, membrane processes.

Details can be obtained from: Dr Andrzej Trochimczuk, Faculty of Chemistry, Wroclaw University of Technology, 27 Wyspainskiego, 50-370 Wroclaw, Poland. (andrzej.trochimczuk@pwr.wroc.pl)

Deadline for abstracts: 31st January 2007

2007, October 15-19th, 4th International Conference on Ion Exchange (ICIE'07)

The conference organised by the Japanese Association of Ion Exchange (JAIE) will be held at Chiba University, Japan from 15-19th October 2007. The Organising Committee under Professor Shogo Shimazu have distributed the call for papers and second circular details of which can be found on the web-site: <http://www.jaie.gr.jp>. Further information can be obtained either from the above web-site or by contacting Professor Shimazu: icie_chiba@faculty.chiba-u.jp.

The deadline for submission of abstracts is 31st January 2007.

2008, July 9-11th, IEX'2008

This is the latest in a series of ion exchange conferences organised by the SCI that started in 1954. The conference will be held in Fitzwilliam College Cambridge and will feature sessions on a wide range of topics with particular emphasis on those areas perceived there is the greatest future need such as potable water treatment; production and purification of products from bio-sources; requirements of power generation plant. An addition feature of this meeting will be an intensive technical training course in ion exchange water treatment. This will precede the conference on 6-8th July and will be linked to the conference by a special session on industrial case studies in water treatment on 9th July. The decision to hold such a course is a response to the major structural changes in industries over the past two decades that has led to a gradual loss of in-house skills and training facilities in this area. Further details of this course will be available later.

The first circular and call for papers has been distributed and is available from the Ms Jacqui Maguire (jacqui.macguire@soci.org) or via the SCI website (<http://www.soci.org/>)