

# UNECA SCIENCE WITH AFRICA 2010 PAN AFRICA CHEMISTRY NETWORK WATER CHALLENGE WORKSHOP

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### ABSTRACTS





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Alejandra Palermo graduated as a chemical engineer and her undergraduate studies included a period at the Chemical Engineering Department of the University of Sao Paulo, Brazil. Her subsequent PhD research in Materials Science dealt with theoretical and experimental studies of diffusion of high molecular weight hydrocarbons in zeolites. She went on to become an Assistant Professor in Chemical Engineering (UNMDP, Argentina) before joining the Chemistry Department at Cambridge University under a Royal Society Visiting Fellowship. She was subsequently awarded the position of CONICET External Research Fellow and for the next 7 years she continued to work in Cambridge in the field of heterogeneous catalysis and surface science. She has over 50 publications in the area of diffusion, heterogeneous catalysis, solid state electrochemistry and surface science, including synchrotron radiation methods. In 2002 she joined the RSC as Project Manager for the *International Review of UK Chemistry* and after this worked on the follow-up action plan, particularly in science policy activities on sustainable chemistry, national security and the development of the chemistry/chemical engineering interface. Since 2006, her work is focused on the development of international research collaborations. In 2007 she was appointed RSC Manager for the Pan African Chemistry Network. She is a member of the IUPAC task in *International Research Funding in the Chemical Sciences*, a Fellow of the RSC and of IUPAC, and a member of the IChemE. She is member of the steering group that authored the PACN report on "Africa's Water Quality", launched on World Water Day in March 2010.



Dr Feleke Zewge obtained his undergraduate degree in Chemistry from the Addis Ababa University in 1988. He obtained MSc. and PhD Degrees in Environmental Engineering from Gunma University of Technology in 1998 and 2001, respectively. Currently, he is Associate professor of Environmental Chemistry/Engineering at Addis Ababa University, teaching advanced courses in Environmental Chemistry, Environmental Engineering, and Industrial Technology both at the Department of Chemistry and Environmental Science Program. He is also appointed as the Manager of the National Fluorosis Mitigation Project Office under the Ministry of Water Resources. He is conducting basic

<p>Dr. Feleke Zewge  Department of Chemistry,  Addis Ababa University &amp;  National Fluorosis Mitigation  Project, Ministry of Water  Resources  <a href="mailto:zewge@chem.aau.edu.et">zewge@chem.aau.edu.et</a></p>	<p>and applied research in areas related to water quality, wastewater, municipal solid waste management, health care and hazardous waste management, environmental monitoring, urban air quality and bioremediation in wetlands and authored a number of publications on reputable journals, book chapters and international conference proceedings dealing with environmental science and engineering. He has also served as senior consultant for various Governments and Private Organizations in activities pertaining to industrial quality control, water quality assessment, water and wastewater management, hazardous waste management, environmental management, environmental regulations and on the implementation Multilateral Environmental Agreements.</p>
 <p>Dr. Kevin McGuigan  Dept. of Physiology &amp; Medical  Physics  The Royal College of Surgeons in  Ireland, Ireland  <a href="mailto:kmcquigan@rcsi.ie">kmcquigan@rcsi.ie</a></p>	<p>Dr Kevin McGuigan obtained his undergraduate degree <i>Summa cum Laude</i> in Physics from the National University of Ireland – Maynooth, Ireland in 1985. He was awarded a PhD in Physics on semiconductor spectroscopy by Dublin City University in 1989. After 2 years on the postdoctoral research merry-go-round he was appointed as a lecturer in the Dept. of Physics in the Royal College of Surgeons in Ireland (the largest medical college on the island of Ireland) in 1991, where he has remained ever since. Since arriving at the RCSI Kevin has changed the focus of his research and is now the director of the Solar Disinfection Research Group at the RCSI. This group operates a specialized water research laboratory which develops new technologies of the inactivation of waterborne and/or medically relevant microbiological pathogens using both real and simulated sunlight. Working closely with the Depts. of Epidemiology and International Health, this group coordinates several multi-centre, international research programmes examining the health impact of appropriate technology interventions against waterborne disease in developing countries such as Uganda, Kenya, Zimbabwe, S. Africa and Cambodia funded by the EU and the Irish govt. Kevin is a Fellow of the Institute of Physics, has supervised to completion 6 PhD and 3 MSc projects, has published over 50 refereed articles in peer-reviewed journals.</p>
 <p>Dr. Ray Elliott  Strategic Projects Manager  Syngenta</p>	<p>Ray Elliott is Strategic Project Leader at Syngenta, Bracknell. During his 26 years in the agrochemical industry, Ray has held a wide variety of scientific and managerial positions within research and development including in synthetic and process chemistry, environmental sciences and latterly analytical sciences. He has also managed large multi-disciplinary and multi-national projects in R&amp;D. He has been an active member of a number of committees within BAA (British Agrochemical Association now known as the Crop Protection Association) and BBSRC (Biotechnology and Biological Sciences Research Council) and is currently a member of the Project Management Committee for the new LINK scheme on Renewable Materials, the Science Policy Board of the RSC, the Innovation, Science and Technology Committee of the CBI, and the Steering Committee of the Integrated Bio-refining Technologies Initiative</p>

	<p>(IBTI) set up by the Bioscience for Business Knowledge Transfer Network. Ray Elliot takes an active interest in education at all levels, having had links with Cambridge University Chemistry Department for many years and been a Junior School Governor for 10 years. He is currently a Governor of East Berkshire College of Further Education. Ray is married to Clare, who is also a chemist at Syngenta and they have five children, aged from 16 to 22.</p>
 <p>Dr. Simon Cook Basin Focal Projects, CGIAR Challenge Programme on Water and Food <a href="mailto:simonernest@gmail.com">simonernest@gmail.com</a></p>	<p>Simon Cook is a specialist in the analysis of food and water systems that underpin agricultural development in the tropics. He currently coordinates a program of research projects for the Challenge Program on Water and Food in ten river basins around the world: the Yellow, Volta, Sao Francisco, Nile, Niger, Mekong, Karkheh, Limpopo, Indo-Ganges, and Andean basins. These identify the water and food crisis as it affects specific areas in the developing world. These projects will clarify and explain opportunities or risks of change in the food and water system in relation to the dynamics of development.</p> <p>Prior to this he coordinated research projects for the International Center for Tropical Agriculture (CIAT) on the use of spatial information to support rural development. From 1991–2001 he was a senior research scientist with CSIRO in Australia, where he helped the development and adoption of precision agriculture in the grains, sugar and wine industries.</p> <p>He trained at universities in the UK (Swansea, Reading and Cambridge) and believes strongly in the role of science and technology to support equitable development. For some time he has wondered if agriculture should really be considered a ‘slow learner’, or if it is a system waiting for more rapid change.</p>
 <p>Professor Shem O. Wandiga Department of chemistry University of Nairobi, Kenya <a href="mailto:wandigas@uonbi.ac.ke">wandigas@uonbi.ac.ke</a> <a href="mailto:sowandiga@iconnect.co.ke">sowandiga@iconnect.co.ke</a></p>	<p>A professor of chemistry at the University of Nairobi, Dr Wandiga’s research interests include environmental contaminants, the sources and sinks of biogenic gases; and climate change and health. He is a former Chair of Kenya’s National Academy of Sciences and national committee of the International Geosphere-Biosphere Program, and has chaired the Pan-African Committee of START (the global change SysTem for Analysis, Research and Training) since 2001.</p> <p>Dr Wandiga has authored and lectured extensively. He has contributed to the development of science education by chairing several national committees on university education. He has served as a consultant on UNESCO, UNEP, and World Bank projects undertaken in Kenya and eastern Africa. In 2004, Dr Wandiga was cited by Kenya’s Ministry of Environment and Natural Resources for outstanding work on hazardous and toxic chemicals and pesticides. He is currently a member of the UNEP expert group on DDT.</p>
	<p>Steve Ntifo is currently a Director at TBN Management Ltd, leading on the development of water, sanitation and wastewater services, policy and strategy. His passion is to bring efficient and effective water and sanitation to all citizens of the world. He is a</p>



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Chartered Civil Engineer, a member of the Institution of Civil Engineers and a Fellow of the Royal Society of the Arts (RSA), UK. Steve has extensive experience in water and wastewater policy, science, regulation and engineering in the UK, Europe, Asia and Africa.

He is currently a Council Member of the Sustainable Organic Resources Partnership, an NGO. Steve was formerly a Board Member of EUREAU, the umbrella organisation for the water and wastewater service providers in the EU, based in Brussels, Belgium. He was also a member of the Executive Committee of EUREAU and the chairman of EUREAU Commission on wastewater.

Steve has chaired a number of UK national and water industry groups including the Water Framework Directive Steering Group, the Sustainable Organic Resources Partnership's Expert Advisory Group, Anaerobic Digestion Focus Group and Biosolids Focus Group. He also led Water UK policies on the Water Framework Directive, Sewerage, Marine and Bathing Waters, Chemicals, Biosolids and Waste. He also recently chaired the UK Government's Anaerobic Digestion Regulation workstream which supported the development of an implementation plan for England to enhance renewable energy generation as part of the UK Climate Change strategy. Steve previously worked for Atkins consultants, in asset management planning, water and wastewater engineering design, implementation, and project management for a number of water and wastewater projects in the UK and overseas. He also worked with the UK Drinking Water Inspectorate on drinking water quality related schemes including the national plumbosolvency programme.

Steve has written a number of papers and articles on water and wastewater. He has spoken at and chaired numerous conferences and events in the UK, US, Europe and Africa. He represented the UK water industry and gave evidence to UK All Party Parliamentary Water Group on the future of the water industry.

Steve contributed as a speaker and a panellist to the Pan African Chemistry Network's Sustainable Water Conference held in Nairobi in August 2009. He was a member of the Steering Group that authored the conference report on "Africa's Water Quality" which was launched on the World Water Day in March 2010.