

Pan Africa Chemistry Network Congress 2024

29–31 October 2024 | Nairobi, Kenya



Tuesday, 29th October 2024

<u>Time</u>	<u>Activity</u>	<u>Location</u>
08:00	Registration	Chandaria Auditorium
09:00	<p><u>Opening Ceremony:</u></p> <ul style="list-style-type: none">National Anthems <p><u>Welcome remarks from:</u></p> <ul style="list-style-type: none">David Kariuki – Chair of Dept. of Chemistry, University of NairobiAle Palermo – Royal Society of Chemistry, Jacob Midwo – PACN Hub ChairLeonida Kerubo – Dean, University of NairobiFrancis J. Mulaa – Deputy Vice-Chancellor (Research, Innovation & Enterprise), University of NairobiRobert Mokaya OBE FRS FRSC – University of Sheffield, UK and President-Elect of Royal Society of ChemistryMargaret Hutchinson – Vice Chancellor, University of NairobiColin Sykes – Counsellor (Science, Innovation, Tech & Digital) at British High Commission NairobiAndrew M. Karanja – Cabinet Secretary, Ministry of Food & Agriculture <p>[Celebratory Cake-Cutting]</p>	Chandaria Auditorium

10:20	<p>Plenary Lecture: <i>Towards a Net Zero World: Developing and applying new tools to understand how batteries function and to mitigate degradation</i> Dame Clare Grey FRS FRSC, University of Cambridge, UK (PL01)</p> <p>Session Chair: Emmanuel Iwuoha HonFRSC, University of Western Cape, South Africa</p>	Chandaria Auditorium
10:50	BREAK	

Breakout Sessions

<u>Time</u>	<u>Chandaria Auditorium</u>	<u>Breakout Room 1</u>	<u>Breakout Room 2</u>
	<i>Theme: Energy</i>	<i>Theme: Environment</i>	<i>Theme: Water</i>
	Session Chair: Erick Masika, Kenyatta University, Kenya	Session Chair: Anthony Gachanja, Jomo Kenyatta University of Agriculture and Technology, Kenya	Session Chair: Ruth Odhiambo, University of Nairobi, Kenya
11:20	<p><i>Functional semiconductor materials for optimised photovoltaics and electro-energetics</i></p> <p>Emmanuel I Iwuoha HonFRSC, University of Western Cape, South Africa (I02)</p>	<p><i>Copper-loaded sustainable synthesized MOFs for photocatalysis degradation of textile wastewater</i></p> <p>Nejat Habib, Adama Science and Technology University, Ethiopia (O06)</p>	<p><i>Assessment of water quality and characterisation of suspended solids in Lilongwe River in Central Malawi</i></p> <p>Chikumbusho Kayira, Ministry of Water and Sanitation, Malawi (O16)</p>
11:40	<p><i>Evaluation of homogeneous metal complexes as catalysts for the hydrogenation of biodiesel: Improving the oxidative stability of biodiesel</i></p> <p>Fortunate Sejie, University of Botswana, Botswana (I01)</p>	<p><i>Addressing the global impact of plastics in the environment: The need for a sustainable approach</i></p> <p>Nathaniel Boadi, Kwame Nkrumah University of Science and Technology, Ghana (I05)</p>	<p><i>Modelling and optimization of As(III) removal from wastewater by activated carbon prepared from maize plant biomass: A multivariate experimental design approach</i></p> <p>Jonas Bayuo, C. K. Tadam University of Technology and Applied Sciences, Ghana (O17)</p>
11:55	<p><i>The role of sustainable bioenergy in the energy transition</i></p>	<p><i>Isolation and functionalization of carrageenan produces a composite with increased swelling capacity</i></p>	<p><i>Synergetic enhancement of the photocatalytic properties of boron nitride with nitrogen-reduced graphene oxide for PFAS degradation</i></p>

	Francis Kemausuor, Kwame Nkrumah University of Science and Technology, Ghana (I03)	Caroline Munyiri, Ministry of Education, Kenya (O07)	Mary Taiwo Akano, University of Kwazulu-Natal, South Africa (O18)
<u>Time</u>	<u>Activity</u>		<u>Location</u>
12:10	Move to Chandaria auditorium		
12:15	<p>Plenary Lecture: <i>The role of African phytochemistry towards utilization of natural products: recent examples</i> Abiy Yenesew, University of Nairobi, Kenya (PL02)</p> <p>Session Chair: Ruth Omole, Technical University of Kenya, Kenya</p>		Chandaria Auditorium
12:45	LUNCH		Dining Area
13:45	<p>Panel Discussion: Green Chemistry and Sustainability in Africa</p> <p><u>Panellists:</u></p> <ul style="list-style-type: none"> • Youseff Habibi FRSC, University Mohamed VI Polytechnic, Morocco • Vincent Nyamori, University of KwaZulu Natal, South Africa • Sandile Mtetwa, University of Cambridge, UK • Dame Clare Grey FRS FRSC, University of Cambridge, UK <p>Session Chair: Luigi Vaccaro, Università degli Studi di Perugia, Italy</p>		Chandaria Auditorium
14:45	<p>Plenary Lecture: <i>Water Security in Africa – What we need to know and what we need to do</i> Victor Kongo, Global Water Partnership, Tanzania (PL03)</p> <p>Session Chair: Jane Catherine Ngila, African Foundation for Women & Youth in Education & STI, Kenya</p>		Chandaria Auditorium
15:15	BREAK		

Breakout Sessions

Time	Chandaria Auditorium	Breakout Room 1	Breakout Room 2
	<i>Theme: Health</i>	<i>Theme: Environment</i>	<i>Theme: Water</i>
	Session Chair: Solomon Derese, University of Nairobi, Kenya	Session Chair: Anthony Gachanja FRSC, Jomo Kenyatta University of Agriculture and Technology, Kenya	Session Chair: Ruth Odhiambo, University of Nairobi, Kenya
15:35	FLASH PRESENTATIONS	FLASH PRESENTATIONS	FLASH PRESENTATIONS
16:10	<i>Exploring new cinnamoyl chloroquine hybrids on their photo-isomerism and anti-plasmodial activities</i> Mpelegeng Bvumbi, University of Venda, South Africa (O25)	<i>Towards a circular economy: Production and degradation of poly(lactides) using transition metal catalysts</i> Stephen Ojwach, University of KwaZulu-Natal, South Africa (O08)	<i>Solar disinfection (SODIS) of drinking water: A journey from the laboratory bench into the heart of the community</i> Kevin McGuigan – Royal College of Surgeons of Ireland, Ireland (I08)
16:30	<i>Undescribed oxygenated xanthenes from securidaca longipedunculata fresen (polygalaceae) as anti-cancer agents: Isolation, synthesis and biological study</i> Oladimeji, Abdulkabir, Olusegun Agagu University of Science and Technology, Nigeria (O26)	<i>Degradation of PCBs in oil transformers by microwaves catalysed by Fe⁰, glycerol, and NaOH</i> Raissa Kom Regonne, University of Ngaoundere, Cameroon (O09)	<i>Removal of heavy metals from acid mine drainage by low-cost biochar-ceramic filter composite</i> Abimbola Oluwalana, Sol Plaatje University, South Africa (O19)
16:45	<i>From waste to wound care: Biopolymer-based patch for treating cutaneous leishmaniasis</i> Marie Andrea Laetitia Huët, University of Mauritius, Mauritius (O27)	<i>Recovery of lead from lead laden cupels generated in precious metal extraction: an enhanced hybrid approach towards long term environmental pollution control</i> Stephen Nyoni, Chinhoyi University of Technology, Zimbabwe (O10)	<i>Evaluation of the effectiveness and affordability of the technologies available for water treatment in Nigeria and their impact on public health</i> Fatai Lawal, National Institute of Radiation Protection and Research, Nigeria (O20)
17:00	Poster Session and Welcome Reception		Exhibition Area

Wednesday 30th October 2024

<u>Time</u>	<u>Activity</u>	<u>Location</u>
09:00	Plenary Lecture: <i>Porous solids as sustainable energy materials</i> Robert Mokaya OBE FRS FRSC, University of Sheffield, UK (PL04) Session Chair: Vincent Nyamori, University of KwaZulu Natal, South Africa	Chandaria Auditorium
9:30	Move to breakout sessions	

Breakout Sessions

<u>Time</u>	<u>Chandaria Auditorium</u>	<u>Breakout Room 1</u>	<u>Breakout Room 2</u>
	<i>Theme: Health</i>	<i>Theme: Sustainability and the SDGs</i>	<i>Theme: Food and Agriculture</i>
	Session Chair: Ruth Omole, Technical University of Kenya, Kenya	Session Chair: Jacob Midiwo, Maseno University, Kenya	Session Chair: Gloria Obuzor, University of Port Harcourt, Nigeria
09:35	<i>Nano-strips for Rapid and Sensitive Diagnosis of Bilharzia in Kenya</i> Naumih Noah – United States International University, Kenya (I09)	<i>Antibiofilm activities of phytochemicals from Zimbabwean medicinal plants</i> Stanley Mukanganyama - African Institute of Biomedical Science and Technology, Zimbabwe (I12)	<i>Enhancing food and agriculture for sustainability of life</i> Kaine Okorosaye-Orubite, University of Port Harcourt, Nigeria (I11)
09:55	<i>Bioactive metabolites from the Kenyan basidiomycota</i> Josphat Matasyoh – Egerton University, Kenya (I10)	<i>Moving towards sustainable analysis: instrumentation, applications and the analyst</i> Giles Edwards, University of Manchester, UK (I13)	<i>Toxicological evaluation of the liver and kidneys of rats exposed to Myrothamnus flabellifolius crude aqueous extract</i> Michael Bhebhe, Midlands State University, Zimbabwe (O34)
10:10	<i>Synthesis and biological evaluation of a potential antibody-drug conjugate (ADC) for cervical cancer treatment</i> Nosipho Msimango,	<i>The role of computational chemistry in the sustainable development goals</i> Lydia Rhyman, University of Mauritius, Mauritius (I14)	<i>Effect of variation in pH, temperature and duration of washing on the decontamination of endosulfan and lindane pesticides on vigna unguiculata (L.) walp</i>

	University of Cape Town, South Africa (O28)		Irene Oseghale, University of Benin, Nigeria (O35)
10:25	BREAK		

Breakout Sessions

<u>Time</u>	<u>Chandaria Auditorium</u>	<u>Breakout Room 1</u>	<u>Breakout Room 2</u>
	<i>Theme: Health</i>	<i>Theme: Energy</i>	<i>Theme: Food and Agriculture</i>
	Session Chair: Naumih Noah, United States International University, Kenya	Session Chair: Erick Masika, Kenyatta University, Kenya	Session Chair: Leonard Gitu, Chair of Kenya Chemical Society, Kenya
10:45	FLASH PRESENTATIONS	FLASH PRESENTATIONS	FLASH PRESENTATIONS
11:10	<i>Improving the versatility of polysucrose hydrogel through the integration of natural molecules/extracts for multi-phased wound healing</i> Itisha Chummun Phul, Centre for Biomedical and Biomaterials Research, Mauritius, Mauritius (O30)	<i>Synthesis and characterization of metal chalcogenide nanoparticles using different capping agents for photovoltaic applications</i> Mohamed Abderrahmane Sanhoury, Faculty of Sciences of Tunis, Tunisia (I04)	<i>Characterization of antiviral metabolites from the leaves and roothood of millettia oblata ssp. teitensis</i> Ivan Kiganda, University of Nairobi, Kenya (O36)
11:30	<i>Synthesis and applications of bioluminescent molecules in the development of diagnostic probes</i> Marwaan Rylands, University of Cape Town, South Africa (O29)	<i>Exploring the chemical space in metal-organic frameworks for catalysis</i> Gift Mehlana, Midlands State University, Zimbabwe (O01)	<i>Revitalizing deteriorated vegetable oil using urea-enhanced cobalt ferrite magnetic nanoparticles: Synthesis, application and preclinical toxicity evaluation</i> Adewale Adewuyi, Redeemer's University, Ethiopia (O37)

<u>Time</u>	<u>Activity</u>	<u>Location</u>
11:45	Move to Chandaria auditorium	
11:50	<p>Plenary Lecture: <i>Circular Food Systems - selected case studies before food becomes waste</i> Elke Nijman-Ross, African Leadership University, Rwanda (PL05)</p> <p>Session Chair: Gloria Obuzor, Port Harcourt University, Nigeria</p>	Chandaria Auditorium
12:20	<p>Panel Discussion: Gender Balance in the Chemical Sciences <u>Panellists:</u></p> <ul style="list-style-type: none"> • Ruth Odhiambo, University of Nairobi, Kenya • Paul Walton, University of York, UK • Gift Mehlana, Midlands State University, Zimbabwe <p>Session Chair: Ale Palermo FRSC, Royal Society of Chemistry, UK</p>	Chandaria Auditorium
13:00	LUNCH	Dining Area
14:00	<p>Plenary Lecture: <i>Chemistry, the SDGs and the burden of environmental stewardship</i> Rufus Sha’Ato, Joseph Sarwuan Tarka University, Nigeria (PL06)</p> <p>Session Chair: Kaine Orubite-Okorosaye, Port Harcourt University, Nigeria</p>	Chandaria Auditorium
14:30	<p>Panel Discussion: UN Intergovernmental Science-Policy Panel on Chemicals, Waste and Pollution Prevention <u>Panellists:</u></p> <ul style="list-style-type: none"> • Andrea Hinwood, UNEP • Tom Welton, Imperial College London, UK • Frank Adiga, Amentum, UK • Jane Catherine Ngila, African Foundation for Women & Youth in Education & STI, Kenya 	Chandaria Auditorium

	Session Chair: Chair: Jo Reynolds FRSC, Royal Society of Chemistry, UK	
15:30	BREAK	

Breakout Sessions

<u>Time</u>	<u>Chandaria Auditorium</u>	<u>Breakout Room 1</u>	<u>Breakout Room 2</u>
	<i>Theme: Energy</i>	<i>Theme: Environment</i>	<i>Theme: Water</i>
	Session Chair: Erick Masika, Kenyatta University, Kenya	Session Chair: Leonard Gitu, Chair of Kenya Chemical Society	Session Chair: Jane Catherine Ngila, African Foundation for Women & Youth in Education & STI, Kenya
15:50	<i>Green synthesis of Mn-doped CuInSe₂ quantum dots to boost the performance of quantum dot sensitized solar cells</i> Mulu Alemayehu Abate, Aksum University, Ethiopia (O02)	<i>Particulate and gaseous air pollution from industrial stationary sources in Kenya</i> Anthony Gachanja FRSC, Jomo Kenyatta University of Agriculture and Technology, Kenya (I06)	<i>Concentration of selected nutrients and heavy metals in soils and tea farms and water from Nyamasogota river, Kisii county Kenya</i> Priscilla Omwancha, Jomo Kenyatta University of Agriculture and Technology, Kenya (O21)
16:10	<i>A theoretical simulation and optimization of dye-sensitized solar cell with iridium counter electrode: Numerical simulation with SCAPS-1D</i> Bethuel Langa, University of Fort Hare, South Africa (O03)	<i>Exploring synthetic porphyrin-protein conjugates as new artificial metalloenzymes</i> Choonzo Chiyumba, University of Cambridge, UK (O11)	<i>Plasmon-based colorimetric assay using green synthesized gold nanoparticles for the detection of bisphenol A and antimony in bottled water</i> Deribachew Bekana Hirpa, Haramaya University, Ethiopia (O22)
16:25	<i>Concurrent sulfidation and cyanamide functionalization of non-noble metal doped carbon nitrides for flow photocatalysis</i>	<i>The chemist, his laboratory, and the environment</i> Ahile, Ungwanen John, Benue State University, Nigeria (O12)	<i>Chemical assessment in selected underground water wells in south region of Zanzibar Island</i> Abdul Mohamed, The State University of Zanzibar-Suza, Tanzania (O23)

	Papa Kwarteng, University of Cambridge, UK (O04)		
16:40	<i>Lithium extraction and beneficiation in Zimbabwe – a state-of-the-art perspective</i> Tavengwa Bunhu, Chinhoyi University of Technology, Zimbabwe (O05)	<i>Sustainable recycling and separation of yttrium and zirconium metal values through leaching and extraction insights</i> Botros Tawfik, Egyptian Atomic Energy Authority, Egypt (O13)	<i>Activated carbon-silver silica nano composite for removal of heavy metals and organic pollutants from water</i> James Nyirenda, The University of Zambia, Zambia (O24)

16:55 – Close of day

From 18:00	Travel to Gala Dinner – check with registration desk for times		
19:00 – 21:30	GALA DINNER		Bomas Cultural Centre

Thursday, 31st October 2024

<u>Time</u>	<u>Activity</u>	<u>Location</u>
09:00	<p>Plenary Lecture: <i>Catalyzing the green revolution: circular chemistry for a more sustainable future</i> Javier García-Martínez HonFRSC, University of Alicante, Spain (PL07)</p> <p>Session Chair: Yonas Chebude FRSC, Addis Ababa University, Ethiopia</p>	Chandaria Auditorium
9:30	Move to breakout sessions	

Breakout Sessions

<u>Time</u>	<u>Chandaria Auditorium</u>	<u>Breakout Room 1</u>	<u>Breakout Room 2</u>
	<i>Theme: Health</i>	<i>Theme: Environment</i>	<i>Theme: Food and Agriculture</i>
	Session Chair: Ruth Omole, Technical University of Kenya, Kenya	Session Chair: Anthony Gachanja FRSC, Jomo Kenyatta University of Agriculture and Technology, Kenya	Session Chair: Kaine Orubite-Okorosaye, Port Harcourt University, Nigeria
09:35	<p><i>Natural neuroprotective agents against the indicators of Parkinson's disease</i></p> <p>Stephen Nyandpro, University of Dar es Salaam, Tanzania (O31)</p>	<p><i>Nanocellulose: from hype to reality</i></p> <p>Youseff Habibi FRSC, University Mohammed VI Polytechnic, Morocco (I07)</p>	<p><i>AI-optimized extraction-ultrasound-assisted recovery and depolymerization of lignin from biomass for sustainable production of biochemicals and biopesticides</i></p> <p>Obinna Ofoegbu, Joseph Sarwuan Tarka University, Nigeria (O38)</p>
09:55		<p><i>Heavy metals pollution among the sprawl villages of Kakamega town, Kenya: An environmental implication for suburbanization among the developing countries</i></p> <p>Enos Wambu, University of Eldoret, Kenya (O14)</p>	<p><i>Synthesis and characterization of cellulose phosphate-based superabsorbent hydrogels from rice husk under microwave heating for sustainable agriculture</i></p> <p>Adamu Abdulhameed, Bauchi State University, Nigeria (O39)</p>

10:10	<p>Synthesis and bioactivity of isoflavones from <i>Ficus carica</i> and some non-natural analogues</p> <p>Vaderament-Alexe Nchiozem-ngnitedem, University of Potsdam, Germany (O33)</p>	<p>Deep eutectic solvents based ferrofluid for liquid phase microextraction of ofloxacin and sparfloxacin in water samples</p> <p>Abdalla Elbashir, University of Khartoum, Sudan (O15)</p>	<p>Effect of the addition of salt NH_4Cl on the physicochemical properties of monoammonium phosphate fertilizer (MAP): ($NH_4H_2PO_4-NH_4Cl-H_2O$) at 298.15 K</p> <p>Wiam El Fadel, University of Mohammed V, Morocco (O40)</p>
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10:25	BREAK	
10:45	<p>Panel Discussion: Advancing Open Knowledge Dissemination in Africa: Towards a fully Open Access Future</p> <p><u>Panellists:</u></p> <ul style="list-style-type: none"> Vincent Nyamori, University of KwaZulu Natal, South Africa Harrison Weda, Head of Programs, Training Centre in Communication (TCC Africa), Kenya Peninah Musangi, Head of Open Access, Kenya Library Information Services Consortium, Kenya Joice Balidawa, Research4Life Country Connector, Kenya <p>Session Chair: Sara Bosshart, Royal Society of Chemistry, UK</p>	Chandaria Auditorium
11:45	<p>Plenary Lecture: <i>Flexible dynamic frameworks for sensing and storage</i></p> <p>Susan Bourne, University of Cape Town, South Africa (PL08)</p> <p>Session Chair: Nathaniel Boadi, Kwame Nkrumah University of Science and Technology, Ghana</p>	Chandaria Auditorium
12:15	<p>Closing Ceremony and Award of Certificates</p> <ul style="list-style-type: none"> David Kariuki, Chair of Dept. of Chemistry, University of Nairobi <p><u>Award of certificates and closing remarks from</u></p> <ul style="list-style-type: none"> Francis J. Mulaa, Deputy Vice-Chancellor (Research, Innovation & Enterprise), University of Nairobi 	

	<ul style="list-style-type: none"> • Shem Wandiga, Inaugural PACN Kenya Hub Chair <p><u>Closing remarks from:</u></p> <ul style="list-style-type: none"> • Robert Mokaya OBE FRS FRSC – University of Sheffield, UK and President-Elect of Royal Society of Chemistry • Jane Catherine Ngila, African Foundation for Women & Youth in Education & STI, Kenya • Leonida Kerubo, Dean, University of Nairobi 	Chandaria Auditorium
13:00	LUNCH	Dining Area
	END OF EVENT	