



6–8 November 2018, Nairobi, Kenya

Pan Africa Chemistry Network Congress 2018: Managing Resources Through Chemistry: Wealth not Waste

 #PanAfricaChem

Congress Report

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Managing Resources Through Chemistry: Wealth not Waste

University of Nairobi, Chiromo Campus, Nairobi, Kenya, 6th-8th November 2018

Tuesday 6th November 2018

10.30	<u>Opening Ceremony</u> <i>Chair: Jacob Midiwo, PACN Chair, Kenya</i> 10.30 - David Rees, Astex Pharmaceuticals and Royal Society of Chemistry, UK 10.40 - Susie Kitchens, British Deputy High Commissioner for Kenya 10.50 - Catherine Lukhoba, NAPRECA - Kenya 11.00 - Bernard Aduda, Principal, College of Biological and Physical Sciences, University of Nairobi, Kenya 11.10 - Leonard Gitu, Kenya Chemical Society, Kenya
11.20	Conference photograph for all delegates
	SESSION 1: <u>Green Chemistry: Environmentally Sustainable Practices</u> <i>Chair: Dulcie Mulholland University of Surrey, UK</i>
12.00	Green Chemistry and Sustainable Development Goals: Exploiting Unavoidable Food Supply Wastes for Re-nutrition <i>Avtar Mathuru, University of York, UK</i>
12.30	New Bioplastics from Iron Weed (<i>Vernonia Galamensis</i>): A supercritical approach <i>Yonas Chebude, Addis Ababa University, Ethiopia</i>
13.00	Biochemical catalyst in anaerobes: Untapped Novel energy conserving mechanisms for enhancing Biofuels and biogas productions in anaerobic reactors <i>Samuel Muturi, University of Eldoret, Kenya</i>
13.20	LUNCH
14.20	Transformation of waste biomass into platform chemicals and bio-fuels: The role of catalysts and green approaches to the chemicals transformations <i>Gershon Amenuvor, University of Johannesburg, South Africa</i>
14.40	Potential of Green Nanotechnology in Kenya <i>Naumih M. Noah, United States International University Africa, Kenya</i>
15.10	Cashew nut shell in the production of value-added eco-friendly products and sustainable energy applications <i>Sixberth Mlowe, University of Dar es Salaam, Tanzania</i>
15.30	COFFEE BREAK
16.00	Anthocyanins as green indicators of end points in acid – base titrations <i>Robert Byamukama, Makerere University, Uganda</i>
16.30	The Pan Africa Chemistry Network <i>Aneesha Ahmed, Royal Society of Chemistry, UK</i>

17.00	Flash Presentations: Greener approaches to remediation of food contamination <i>Alemayehu Washe, Hawassa University, Ethiopia</i>
	Environmentally Benign Extraction Processes in Analytical Separation of Essential Oils <i>John Kiratu, University of Embu, Kenya</i>
	Biosynthesis of gold and silver nanoparticles using Kenyan medicinal plants and their antibacterial activity <i>Jackson Kilonzo, Kenyatta University, Kenya</i>
17.30	PANEL DISCUSSION – all speakers from this session
18.00	Poster Session and Drinks Reception for all delegates
19.45	Speakers Dinner (for speakers and invited guests only)

Wednesday 7th November 2018

	SESSION 2: <u>Waste Reduction, Capturing and Recycling</u> <i>Chair: David Rees, Astex Pharmaceuticals and Royal Society of Chemistry</i>
9.00	Potential for Chitosan Recovery from Crustaceans Wastes in East African Coast <i>Agatha Wagutu, Mwenge Catholic University, Tanzania</i>
9.20	The challenges of managing plastic waste in Zambia <i>Kakoma Maseka, Copperbelt University, Zambia</i>
9.50	The three fates of air pollution: Tales of organic and black carbon <i>Delphine Farmer, Colorado State University, USA</i>
10.20	Synergising International Research Studies into the Environmental Fate and Behaviour of Toxic Organic Chemicals in the Waste Stream (INTERWASTE) <i>Stuart Harrad, University of Birmingham, UK</i>
10.50	COFFEE BREAK
11.20	Distribution of activity of carbonic anhydrase in typical basins and its significance in carbon sinks <i>Sila Onesmus Nzung'a, Technical University of Kenya, Kenya</i>
11.40	Electronic Waste Recycling in Ghana and Interventions to Reduce its Impact on Human Health and Environment <i>Kwadwo Ansong Asante, CSIR Water Research Institute, Ghana</i>
12.00	Towards a Cleaner Environment in Nigeria: An Assessment of the Status of Use, Regulation and Management of Chemicals and Waste in Nigeria <i>Chukwuemeka Isanbor, University of Lagos, Nigeria</i>

	<p><u>Flash Presentations:</u></p> <p>Application of microbial fuel cells in the degradation of 2,4,5,6-tetrachloroisophthalonitrile (Chlorothalonil) <i>James Kamau, University of Nairobi, Kenya</i></p>
12.20	<p>Electricity Generation From Septic Waste Water Using Septic Tank As Microbial Fuel Cell <i>Ihesinachi Kalagbor, Ken Saro-Wiwa Polytechnic, Nigeria</i></p> <p>Polyethylene and Polyvinylchloride Wastes as Adsorbents for the Sorption of Pb²⁺ from Aqueous solution <i>Ikechukwu Ejidike, Vaal University of Technology, South Africa</i></p>
12.50	PANEL DISCUSSION – all speakers from this session
13.20	LUNCH
	<p>SESSION 3: <u>Sustainable Management of Plastic Waste: The Case of Kenya</u> <i>Chair: Dr Leonard Gitu, Kenya Chemical Society</i></p>
14.20	<p>Management of plastic waste in urban Kenya – Niche innovations in production and recycling. <i>Leah Oyake-Ombis, University of Nairobi, Kenya</i></p>
15.10	<p>Catalytic conversion of post-consumer polyethene wastes and fractionation to substitute petrol and diesel fuels for automobile use in Kenya <i>Jane Mburu, Jomo Kenyatta University of Agriculture and Technology, Kenya</i></p>
15.30	<p>Managing Plastic Waste at the Kingtom dumpsite in Freetown and elsewhere in Sierra Leone <i>Ronnie Frazer-Williams, University of Sierra Leone, Sierra Leone</i></p>
15.50	COFFEE BREAK
16.20	<p>Sustainable recycling of waste plastics into Plastic Composite Materials for construction industry applications in developing countries <i>Alex Kumi-Larbi Jnr, Imperial College, UK</i></p>
16.50	<p>Africa's role in the Global 100 Plastic Rivers Network <i>Holly Nel, University of Birmingham, UK</i></p>
17.20	<p>Chemistry for Drug Discovery <i>David Rees, Astex Pharmaceuticals and Royal Society of Chemistry, UK</i></p>
17.50	<p>The Royal Society of Chemistry's Local Section in Nigeria <i>Chukwuemeka Isanbor, University of Lagos, Nigeria</i></p>
18.00	PANEL DISCUSSION – all speakers from this session and morning session.
19.00	Congress Dinner for delegates

Thursday 8th November 2018

	SESSION 4: <u>Biomaterials and Natural Products</u> <i>Chair: Prof John Onyari, University of Nairobi, Kenya</i>
9.00	(2R,5S)-Theaspirane Identified from Banana Leaves and Palm wine Extract for Integrated Pest Management of Banana Weevil, <i>Cosmopolites s.</i> , on Smallholder farms <i>Samson Abagale, University for Development Studies, Ghana</i>
9.20	Rotenoids from East African Plants–Structure, Stereochemistry and Biological Activity <i>Abiy Yenesew, University of Nairobi, Kenya</i>
9.50	Compounds from Wild Mushrooms with Anti-tumor Potential <i>Alice Njue, Egerton University, Kenya</i>
10.10	COFFEE BREAK
10.40	Extraction & Characterisation of Volatile Compounds from the Essential Oils of <i>Sida acuta</i> Burm. f. Leaves & their Larvicidal Activity against Malaria Vectors <i>Isaac Njoku, University of Lagos, Nigeria</i>
11.00	Lead Compounds from African and European Plants: From Discovery to Commercialization <i>Dulcie Mulholland, University of Surrey, UK</i>
11.30	<u>Flash Presentations:</u> Anti-inflammatory and Cytotoxic Phytochemicals from <i>Lannea rivaie</i> and <i>Lannea Schweinfurthii</i> <i>Souaibou Yaouba, University of Nairobi, Kenya</i> A novel anthocyanidin with C-ring methoxylation from pink-mauve flowers of <i>Erlangea tomentosa</i> (Asteraceae) as a potential functional food and nutraceutical <i>Christopher Adaku, Mbarara University of Science and Technology, Uganda</i> From waste to wealth: Switenia mycophylla gum, a new gum, for commercial explorations (synthesis, purification, characterization and utilization) <i>Olusola Adeyanju, University of Jos, Nigeria</i>
12.00	Research4Life Training <i>Angeline Djampou, United Nations Environment Programme, Kenya</i>
12.30	PANEL DISCUSSION – all speakers from this session
13.00	Lunch
14.00	<u>Exhibitors:</u> Nesvax Innovations Limited Vision Scientific & Engineering Kenya Ltd Institute of Biotechnology Research
14.30	Closing Ceremony and Poster Prize Awards

Congress Report

Tuesday 6th November 2018

Opening session:

Chaired by Professor Jacob Midiwo from the University of Nairobi, Kenya.

David Rees, Council member for the Royal Society of Chemistry and Chief Scientific Officer at Astex Pharmaceuticals, welcomed the delegates and highlighted the ability of the Royal Society of Chemistry to connect chemists globally, with events such as the Congress. He said:

- The topic of the Congress was very relevant to the UN Sustainable Development Goals (SDGs), particularly Goal 12 of ensuring sustainable production and consumption.
- Chemical scientists have a key role to play in developing sustainable resources and specific topics will be covered during the meeting.
- The RSC and PACN play a key role in supporting chemical scientists in Africa and is achieving this through funding collaborations between the UK and Africa, giving grants for equipment, and providing free/low-cost access to the entire RSC journal portfolio through a partnership with Research4Life.
- The RSC is also focussed on developing skills through a partnership with GSK. This will train 400 African scientists in analytical skills by 2020 and those trained are already putting their skills to good use.

Susie Kitchens, the British Deputy High Commissioner for Kenya, said that the UK's Science and Innovation Programme, a sponsor of this Congress, has a clear interest in waste management. She stated that 31 million tonnes per year of waste shows that this is an important topic globally and is a real worldwide challenge. She pointed out that any exchange of ideas is a great step towards solving this challenge.

Catherine Lukhoba introduced the Natural Products Research in East and Central Africa (NAPRECA) network. She highlighted key workshops and their impacts, which were possible due to continued support from the RSC and PACN.

Bernard Aduda, Principal of College of Biological and Physical Sciences at the University of Nairobi, said that waste management is a fundamental human challenge and that scientists should look towards developing systems that solve problems created by scientific innovation as well as human activities. He concluded by saying that the effective utilization of resources would provide a solution to many challenges posed by waste management.

Leonard Gitu, from the Kenyan Chemical Society (KCS), provided a summary of key activities held by KCS. He thanked the continued support of the RSC and PACN, particularly for a recent event to raise awareness on the use of lead products.

SESSION 1: Green Chemistry: Environmentally Sustainable Practices

Chaired by Professor Dulcie Mullholland, University of Surrey, UK.

Plenary presentations

Avtar Mathuru, from the University of York, talked about a vision to create a world-leading green chemistry research centre as a possible solution to sustainable development. He mentioned that there is a need for partnerships as global drivers for the 17 SDGs, and particularly for SDG 12 in order to achieve environmentally sound management of chemical and all waste. This is particularly important for unavoidable food waste, comprising approximately 30 – 40% of all food waste. He highlighted the potential to use this food waste as a source of biomaterials and chemicals, and said that new opportunities with food and drink materials were providing steps forwards. He concluded that turning waste into reusable materials is difficult but possible, and that the big challenge would be to penetrate a well-established industry.

Yonas Chebude, Addis Ababa University, gave a talk on new bioplastic materials from African Ironweed. He said that there are high proportions of natural oils in the plant, particularly vernonia oil. His study used a natural supercritical carbon dioxide extraction method to obtain vernonia oil and then converted it into environmentally friendly bioplastic materials with potential for use in industry and plastic production.

Oral presentations

Samuel Muturi, University of Eldoret, talked about the use of anaerobes for enhancing biofuels and biogas production. He said this was a great opportunity for turning organic waste materials into useful products, and indicated that this untapped opportunity could cut down on greenhouse gases coupled with the recycling of organic wastes.

Gershon Amenuvor, from the University of Johannesburg, talked about transforming waste biomass into chemicals and bio-fuels. He talked about generated carbon dioxide being turned into methanoic acid and methanol, which are useful solvents. He compared homogeneous and heterogeneous catalysis for the conversion of waste into useful materials, and pointed out that structure was a critical parameter.

Plenary presentation

Naumih Noah, from the USIU-A in Kenya, covered the importance of developing a curriculum that underpins green nanotechnology in the pursuit of green chemistry. She discussed the methods of synthesis and highlighted key applications, such as water purification systems, healthcare and food production. She highlighted current trends in Kenya in collaborative research on using waste materials to generate useful products, and discussed case studies including the use of watermelon rinds.

Oral presentation

Sixberth Mlowe, from the University of Dar es Salaam, gave a talk on the conversion of agricultural waste into useful products. He specifically discussed using cashew nut shell waste for polymer synthesis, amongst other uses.

Plenary presentations

Robert Byamukama, Makerere University, gave a presentation on the use of anthocyanins as green indicators of end-points in acid-base titrations, and as alternatives to widely-used synthetic indicators. His data showed how these indicators could be environmentally friendly and that titration results were comparable with the commercial synthetic indicators phenolphthalein, methyl orange and mixed indicator.

Aneesha Ahmed, from the Royal Society of Chemistry, gave a talk on the RSC's [Pan Africa Chemistry Network](#). She talked about enhancing African chemical science through partnership, and highlighted a number of ways this is being achieved:

- Enhancing skills and knowledge of chemical scientists – there is a GSK/RSC partnership to train 400 African scientists in analytical skills by 2020 and a Research4Life partnership allowing free/low-cost access to the entire RSC journal portfolio for developing countries.
- Advancing excellence in the chemical sciences – with events such as this Congress, sponsored by the UK's Science and Innovation Network, allowing delegates to engage in discussion about waste management.
- Integrating African chemistry into the global science community – with RSC funding opportunities, and a joint RSC-Royal Society International Exchange Award scheme.

Flash presentations

Flash presentations were then given. Alemayehu Washe (Hawassa University) talked about aflatoxin detoxification in terms of fungi fermentation of milk. John Kiratu (University of Embu) gave a talk on supercritical fluid extraction for the separation of essential oils, which are comprised of volatile compounds. Jackson Kilonzo (Kenyatta University) talked about the synthesis of gold and silver nanoparticles, and the advantages of green synthesis due to the stabilisation and capping of nanoparticles. He also highlighted the importance of these nanoparticles as potential antibacterial agents.

Panel discussions

A panel discussion followed with all speakers from this session. There were questions ranging from plants to turning waste into useful products and, in particular, there was a discussion around the sustainability of the work/ideas presented.

Poster presentations

All delegates were invited to view the posters on display and discuss these with the presenters.

Wednesday 7th November 2018

SESSION 2: Waste Reduction, Capturing and Recycling

Chaired by Dr David Rees from Astex Pharmaceuticals, UK and the Royal Society of Chemistry.

Oral presentations

Agatha Wagutu, from Mwenge Catholic University, gave a presentation on the potential for chitosan recovery from crustacean wastes along the East African coast. She highlighted how “blue is the new

green” through marine biotechnology. A green environment encompasses the 3 Rs – reuse, recycle and reduce - and these can be achieved with crustacean waste. Analysis suggests that if waste was recycled appropriately, it would be possible to produce over 10 metric tonnes of chitosan, which has important applications in biomedicine and industry. She also pointed out that there is the potential to obtain seafood protein as well as chitosan from prawn shell waste.

Plenary presentations

Kakoma Maseka, from Copperbelt University, discussed how the management of solid waste e.g. plastics is a huge challenge in Zambia. He talked about how it is usually discarded, buried or incinerated, all of which cause environmental issues. Recycling is usually informal in Zambia and manufacturers are responsible for collecting their own waste for recycling. He concluded by saying that a systematic integrated approach is the way forward for managing plastic waste effectively – there are plans to research the use of green chemistry to manage solid waste.

Delphine Farmer, Colorado State University, highlighted the problem of air pollution and how Africa is under-represented in studies. She said that sources of air pollution in Africa differ from European countries but still need to be measured, and pointed out that air pollution affects more people in Africa than dirty water. Some sources include vehicle emissions and firewood smoke, and pollutants enter the atmosphere where they undergo oxidation chemistry changing their forms. These changes can result in more volatile and longer-lasting molecules that can drift further *e.g.* satellite data showed how pollution from the Sahara is drifting towards Brazil.

Stuart Harrad, University of Birmingham, talked about a collaborative project with the aim of understanding issues relating to environmental contamination from toxic chemicals. The INTERWASTE project involves 27 partners and 17 countries – including Nigeria and South Africa from the African continent. He discussed the trend of halogenated flame retardants being added to electronics, furniture, polystyrene insulation, etc. This is important because brominated flame retardants are neurological endocrine disrupting and found in children’s toys. He emphasised how an inexpensive analysis method needs to be available, as the current gold standard is very expensive (approximately 400 USD per sample).

Oral presentations

Sila Nzung’a, from the Technical University of Kenya, talked about the distribution of activity of carbonic anhydrase in river basins and its significance in carbon sinks. His talk focussed on how carbonic anhydrase brings about karst carbon sequestration by converting CO₂ in the atmosphere into other forms. He pointed out that climate is a factor that affects sequestration.

Kwadwo Asante, from the CSIR Water Research Institute, gave a talk on electronic waste recycling in Ghana. He highlighted toxins in electronic waste including lead, lithium, cadmium, mercury and chromium and the effects on humans *e.g.* various blood and respiratory diseases.

Chukwuemeka Isanbor, University of Lagos, talked about the management of chemicals and waste in Nigeria. There are management systems available but these are poorly managed. A study was presented that assessed the status of use, regulation and management of chemical waste, and was conducted to provide scientific data to influence policy.

Flash presentations

Flash presentations then followed. James Kamau (University of Nairobi) gave a presentation on the application of microbial fuel cells in the degradation on chlorothalonil. Ihesinachi Kalagbor (Ken Saro-Wiwa Polytechnic) talked about the generation of electricity from septic waste water. Ikechukwu Ejidike (Vaal University of Technology) gave a talk on the use of polyethylene and polyvinylchloride waste as adsorbents for the sorption of Pb^{2+} from aqueous solution.

Panel discussions

A panel discussion followed with speakers from this session. A range of questions were asked covering waste management in Nigeria, electronic waste, measurement of air pollution, and karstification.

SESSION 3: Sustainable Management of Plastic Waste: The Case of Kenya

Chaired by Dr Leonard Gitu, Kenyan Chemical Society, Kenya.

Plenary presentation

Leah Oyake-Ombis from the University of Nairobi, gave a presentation on the management of plastic waste in urban Kenya. She mentioned that Kenya banned plastic carrier bags last year and there has been an emergence of recycling. The project presented analysed innovation activities in the collection, prevention and recycling of plastic waste in urban centres in Kenya, targeting Nairobi, Mombasa, Nakuru and Kisumu.

Oral presentations

Jane Mburu, from JKUAT, talked about the need to sustainably use fossil fuel plastics as a potential replacement for petrol. A study was presented on converting waste plastics to fuel gas and oils, using a pyrolysis reactor. She highlighted how catalysts lowered the time taken for pyrolysis to occur, but resulted in low yields of fuel. In particular, she mentioned that manganese oxide was the best oxidizing agent for petrol formation.

Ronnie Frazer-Williams, from the University of Sierra Leone, gave a talk on managing plastic waste in Freetown and elsewhere in Sierra Leone. His study determined that 16 % of all waste received at a main dumpsite in Freetown over a six-week period was plastic waste. This included water plastic bottles, soft drinks bottles and water sachets. He highlighted how previously, most plastic waste was burnt – however, now increasingly plastic waste is being used to produce bags, tiles and other products and is being supported by skills-training from international organisations.

Plenary presentations

Alex Kumi-Larbi Junior, from Imperial College, talked about research conducted into recycling waste plastics to materials for construction industry applications. He started by stating that most plastics end up in water in Ghana. He gave an overview of a collaborative research project where waste low-density polyethylene (LDPE) water sachets were melted and mixed with sand to form sand blocks. These LDPE-bonded sand blocks were shown to be strong, tough materials.

Holly Nel, from the University of Birmingham, gave a talk on the global 100 Plastic Rivers Network and Africa's role in this. She mentioned that being able to assess the global risks of microplastics is limited by the lack of knowledge surrounding freshwater systems, as studies have mainly been conducted in marine ecosystems. She talked about the Global 100 Plastic Rivers Network, an initiative that aims to understand how microplastics are distributed in rivers globally, and how this is crucial as 70 – 80% of all microplastics reaching the oceans have been transported by rivers.

David Rees, from Astex Pharmaceuticals, gave a lecture on drug discovery and natural products. He emphasised how natural products are the most successful source of drugs and mentioned the AAS-SA call for drug discovery. He focussed on fragment based methods, such as X-ray crystallographic fragment screening, and how fragment optimisation can lead to strongly binding (nM) molecules from initial weakly binding (mM) fragments. He cited the example of Kisqali®, a CDK4/6 inhibitor, to show how this method can lead to new drugs.

Panel discussions

Panel discussions followed with all speakers from this session and the previous session. There was a lot of discussion around the practicalities of using plastic waste as building materials, including conversations around human safety and costs. In addition, there were questions around the scale of the issue of microplastics and potential solutions.

Thursday 8th November 2018

SESSION 4: Biomaterials and Natural Products

Chaired by Professor John Onyari, University of Nairobi, Kenya

Oral presentation

Samson Abagale, from the University for Development Studies, talked about how food security and food storage is a huge global challenge. His study focussed on investigating weevil management using banana leaves and palm wine extract, and found that (2*R*, 5*S*)-theaspirane in senesced banana leaf and palm wine extract resulted in significant attraction. He suggested that a system comprising these materials as traps in the field, could enhance the storage of bananas/plantains and change the declining trend in banana production.

Plenary presentation

Abiy Yenesew, from the University of Nairobi, gave an overview on research into rotenoids from East African plants. Key results included the isolation of 100 compounds, 30 of which were novel compounds. NMR spectroscopy was used to characterize the compounds, isomers were isolated and biological activities reported.

Oral presentations

Alice Njue, of Egerton University, talked about the isolation of compounds with potential anti-tumour activity from wild mushrooms. In this study, twelve compounds were isolated and one compound was a novel structure. These compounds were fully characterized and screened for activity against human cancer cell lines. One compound displayed anti-proliferative activity and was investigated further.

Isaac Njoku, from the University of Lagos, talked about the WHO estimates of the increasing incidence of malaria, and how the ultimate goal of prevention would be better than treatment. He presented research into anti-malarials, which involved the use of essential oil natural products, and exposure of these to mosquito larvae. He reported that the essential oils extracted from the leaves of *Sida acuta* displayed the highest levels of larvae mortality, although the scale-up of this would be a critical factor for its impact.

Plenary presentation

Dulcie Mullholland from the University of Surrey, gave a talk on lead compounds from African and European plants. This collaborative project, funded by the European Commission, consisted of 9 partners, including from the African continent. Compounds were isolated and potent compounds with high selectivity were found. She highlighted a key milestone from this research project, the development of Larixyne® for the treatment of mildew on grapes.

Flash presentations

Flash presentations were given, firstly by Souaibou Yaouba (University of Nairobi) on anti-inflammatory and cytotoxic phytochemicals from *Lannea rivaie* and *Lannea schweinfurthii*. This was followed by Christopher Adaku (Mbarara University of Science and Technology) who reported the discovery of a novel anthocyanidin from *Erlangea tomentosa* as a potential nutraceutical. Finally, Olusola Adeyanju (University of Jos) who reported the proposed structure and physicochemical properties of *Swietenia mycrophylla* gum and its potential commercial use, particularly in drug release control.

Research4Life presentation

Angeline Djampou, from the UN Environment Programme, gave a talk on Research4Life that consists of 5 programmes: Hinari, AGORA, GOALI, OARE and ARDI. Access is divided into two levels: (1) country and (2) institutional. Country access is further divided into two groups based on GDP, Group A (free access) and Group B (low-cost access). Delegates were advised to go to <https://www.research4life.org/> for further information.

Panel discussions

Panel discussions followed with all speakers from this session, with a particular focus on the significance of partnership and collaboration for research.

Closing ceremony

The Poster Prizes were awarded as follows:

Prize	Winner	Poster title
PACN Prize	Bernadette Ratene <i>Kenyatta University, Kenya</i>	Microcapsules for Downstream Deployment of an Optimized 4-Component Tsetse-Repellent Blend
Analytical Science Prize	Christopher Adaku,	A novel anthocyanidin with C-ring methoxylation from pink-mauve flowers of <i>Erlangea tomentosa</i>

	<i>Mbarara University of Science and Technology, Uganda</i>	
Kenyan Chemical Society Prize	Florence Masese <i>University of Nairobi, Kenya</i>	Photocatalytic degradation of methylene blue using coupled titanium (IV) oxide nanocomposites under visible light irradiation

The session was closed with acknowledgement of the individuals who helped in the organization of the Congress: the Royal Society of Chemistry is grateful to the Local Organising Committee, the team of students who helped run the event and the support from the University of Nairobi and the Kenyan Chemical Society.

We are also very grateful to the UK's Science and Innovation Network for their support for this meeting.

Following the Congress, Angeline Djampou from the UN Environment Programme ran a Research4Life workshop, giving attendees practical experience in how to browse, search, download and save/print resources, as well as the eligibility criteria.

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The delegates of the PACN Congress 2018

Report written by: Dr Eric Masika and Dr Catherine Lukhoba, Kenya

Report edited by: Dr Aneesa Ahmed, Royal Society of Chemistry

December 2018

