

### DEPARTMENTAL SEMINARS 2020

S/N	DATE	TOPIC	SPEAKER	ABSTRACT	VENUE
1	7 <sup>th</sup> Feb 2020	Using Augmented Reality to Aid Neurodivergent Students Learn Better	Joan Waweru, 4 <sup>th</sup> year Student		R119 Department of Chemistry
2	13 <sup>th</sup> Feb 2020	E-resources and reference management tools	Dr. Derese		R119 Department of Chemistry
3	14 <sup>th</sup> Feb 2020	E-resources and reference management tools	Dr. Derese		R119 Department of Chemistry
4	21 <sup>st</sup> Feb 2020	Pioneering a new cash crop and business industry through croton megalocarpus value chain	Mr. Cosmas Ochieng MD, Eco Fuels , Kenya <b>(Guest Speaker)</b>		R119 Department of Chemistry 2 PM
5	21 <sup>st</sup> Feb 2020	Chemical communication between biting flies- pathogens-livestock hosts	Dr. Merid Getahun Scientist - <i>ICIPE</i> Head of Max Planck Partner Group <b>(Guest speaker)</b>	The research at <i>icipe</i> , is funded by European Union, aims to develop strategies for the control of camel trypanosomosis (also known as surra), which is spread by tsetse flies and other biting flies. The disease has devastating impact on camels: affected animals succumb to severe haemorrhaging and abort every foetus.	R119 Department of Chemistry 3 PM
6	23 <sup>rd</sup> July 2020	Assessment of Levels of Selected Heavy Metals in Borehole Water in Ongata Rongai, Kajiado County, Kenya	Nancy K. Ochiba	The study was carried out to evaluate the quality of groundwater sampled from ten selected boreholes in Ongata Rongai town. The parameters determined were pH $6.6\pm 0.1$ – $8.6\pm 0.1$ ; dissolved oxygen $22\pm 0.01$ - $4.83\pm 0.00$ (mg l <sup>-1</sup> ), electric conductance $233\pm 1.0$ - $312\pm 1.0$ (mScm <sup>-1</sup> ), total dissolved solids $630\pm 1.3$ - $980\pm 1.0$	Online at 2PM

				(mg <sup>l</sup> <sup>-1</sup> ); turbidity 0.04±0.01-0.7±0.01 (NTU); total suspended solids 60.9±0.1-2.6±0.0 30±1.3-980±1.0 (mg <sup>l</sup> <sup>-1</sup> ), while for heavy metals; zinc BDL- 0.73±0.01 (mg <sup>l</sup> <sup>-1</sup> ); lead 0.21±0.01- 0.33±0.01 (mg <sup>l</sup> <sup>-1</sup> ), mercury 0.0001- 0.0019±0.0001 (mg <sup>l</sup> <sup>-1</sup> ); 0.256±0.01 (mg <sup>l</sup> <sup>-1</sup> ); manganese 0.03±0.01-0.26±0.01 (mg <sup>l</sup> <sup>-1</sup> ).	
7	28 <sup>th</sup> Feb 2020	Marine Drug Discovery in Kenya - Foot prints and prospects".	Dr. Thomas Dzeha <b>Technical University of Mombasa</b> <b>(Guest speaker)</b>		R119 Department of Chemistry 2 PM
8	28 <sup>th</sup> Feb 2020	Bitumen chemistry and application in roads	Mr. Charles Langat <b>Asphalt Institute of East Africa</b> <b>(Guest speaker)</b>	Guest Speaker	R119 Department of Chemistry 2 PM
9	3 <sup>rd</sup> July 2020	Synthesis , Characterization and Application of Some Novel Complex Palladium	Wycliffe Odhiambo MSc Proposal	In this proposed research, Novel thiosemicarbazones of thiophene moiety will be synthesized via condensation of thiosemicarbazides and thiophene substituted aldehydes Pd <sup>2+</sup> complexes of thiosemicarbazones will be obtained by reacting the thiosemicarbazones with palladium salts. Optimization and efficient parameters will be adjusted for high synthetic yield. Both ligands and complexes will be characterized by various techniques like CHNS elemental analysis, spectroscopic techniques like <sup>1</sup> HNMR, <sup>13</sup> CNMR, FTIR, UV-VIS, and X-ray	Online 2 PM

				crystallography. Solubility of the ligands will be determined in water as well as other solvents. The stability will also determined by NMR. Anticancer activities of both ligands and complexes will be investigated in various cancer cells.	
10	3 <sup>rd</sup> July 2020	Synthesis, Characterization and Anticancer Screening of Novel Platinum (II)Thiosemicarbazone Complexes	Jasmine Nehema Aloise MSc Proposal	Thiosemicarbazones are a class of Schiff base ligands that have found necessary because of their adaptable donor properties, biological applications, and structural diversity. They are versatile as they exhibit high selectivity, improved coordination tendencies, and excellent stability towards an array of metal ions. Since they can coordinate in both neutral and anionic nature, they adopt several coordination modes with a variety of metal ions. Their chelating capacity can also be improved by inserting a donor atom with a motif that could make it polydentate. When thiosemicarbazones are coordinated to metal ions, the complexes have been found to have enhanced activity and fewer side effects when used for biological applications. This research proposal will investigate the possibility of synthesizing and characterizing new platinum (II) thiosemicarbazone complexes that can be tested for their anti-cancer properties. The ligands and complexes will be characterized by <sup>1</sup> HNMR, <sup>13</sup> CNMR, FTIR, UV-VIS, elemental, and XRD. The new compounds	Online 3 PM

				are expected to offer potential alternatives for various applications of coordination compounds such as anti-cancer.	
11	10 <sup>th</sup> July 2020	Concentration of Chlorothalonil and Lambda Cyhalothrin Pesticides Residue Levels in Vegetables Sold in Nairobi City Markets, their Removal and Degradation using Selected Standard Solutions	James Mungai MSC student	MSc Thesis	Online At 2 PM
12	24 <sup>th</sup> July 2020	Characterization and Application of Nano zeolitic Materials as Smart Delivery Systems for Selected Fertilizers and Pesticide	Gabriel Waswa PhD Student	PhD thesis	Online
13	14 <sup>th</sup> August 2020	Antiplasmodial and Anticancer Principles from <i>Millettia dura</i> , <i>Millettia leucantha</i> and <i>Millettia lasiantha</i> Species	Daniel Buyinza PhD Student	Despite all efforts in the fight against malaria and cancer, the number of infections per year is still high or even rising for cancer, making them the leading causes of fatality in the world. The <i>Plasmodium</i> resistance and varied side effects of the conventional cancer drugs is a major hitch in the treatment of malaria and cancer, hence posing a big challenge to the global health care. Phytochemicals from higher plants have produced safe antimalarials and anticancers and still offer hope for new drugs. The aim of this study therefore was to search for anticancer and antimalarial principles from <i>M. dura</i> , <i>M. leucantha</i> and <i>M. lasiantha</i> species from Kenya.	Online

14	21 <sup>st</sup> August 2020	'Synthesis, Structure Elucidation and Reactivity of Palladium (II) and Platinum (II) Complexes Bearing Aromatic Heterocycles for Anticancer Applications'	Simon Ngigi Mbugua PhD student	PhD thesis	Online At 2PM
15	21 <sup>st</sup> August 2020	Phytochemical Analysis of Selected <i>Tephrosia</i> Species for Anti-inflammatory Principles".	Owor Richard Oriko PhD student	PhD thesis	Online at 3 PM