



PAN AFRICA
CHEMISTRY NETWORK



NMR Workshop - Hands on Training July 29th – 2nd August 2024

Department of Chemistry, University of Nairobi, Faculty of Science and
Technology, Chiromo Campus, Nairobi, Kenya

Programme

Day 1: Monday, July 29th 2024

Venue: Faculty of Science and Technology Board Room

Time	Activity	Facilitator
08:30 – 09:00	Arrival & Registration of Participants	Erick Awas / Alice Ndekei / Irene Nyakio

Opening Ceremony

Chair: Charles Mirikau

Time	Institution	Speaker
09:00 – 09:05	Kenya National NMR Centre (KNMRC)	Prof. Abiy Yenesew
09:05 – 09:10	PACN, Kenyan hub	Prof. Solomon Derese
09:10 – 09:20	Chairman, Department of Chemistry, UoN	Prof. D. Kariuki
09:20 – 09:25	Royal Society of Chemistry	Dr. Andrew Schore
09:30 – 09:35	Assoc. Dean, Faculty of Science and Technology, UoN	Prof. F. Mulaa
09:35 – 09:45	Dean, Faculty of Science and Technology, UoN	Prof. John Onyari
09:45 – 09:55	Introduction of delegates and resource persons	Charles Mirikau
09:55– 10:10	Discussion on the program and expectation of the delegates	Prof. Abiy Yenesew
10:10 – 10:20	Vote of Thanks & Photo session	Charles Mirikau
10:20 - 10:45	Tea break	

Training Session 1		
Venue: Room 119, Department of Chemistry		
10:45 - 13:00	Introduction to NMR Spectroscopy	Mirikau
	Theory of NMR Spectroscopy	
13:00 - 14:00		Lunch (Chiromo Campus Club)
Training Session 2		
14:00 -15:00	Factors affecting Chemical Shifts in ^1H NMR Spectroscopy	Abiy/Solomon
15:00 - 16:00	Spin-Spin Splitting in ^1H NMR Spectroscopy	Abiy/Solomon
16:00 - 17:00	Simple ^1H NMR problem solving	Abiy/Solomon/Mwaniki
17:00 - 17:30	Open discussion and close for the day Tea/Coffee Break	Abiy/ Wanjohi

Homework I: Simple ^1H NMR problems

Day 2: Tuesday, July 30th 2024

Training Session 3		
Venue: Room 119, Department of Chemistry		
09:00 - 09:30	Discussion of previous problems	Abiy/Solomon/Mwaniki/Ndakala
09:30 - 10:30	^{13}C NMR Spectroscopy - Chemical Shifts, DEPT, APT	Abiy/Solomon/ Mwaniki
10:30 - 11:00	Tea/Coffee Break	
11:00 -1 3:00	Problem solving session on ^{13}C NMR spectroscopy	Abiy/Solomon/Mwaniki
13:00 - 14:00	Lunch	
Training Session 4		
14:00 – 15:30	NMR Laboratory (sample preparation, running and processing)	IvanAlice/Mirikau
15:30 - 17:00	Running 1D NMR and processing	Ivan/Alice/Mirikau
17:00 - 17:30	Open discussion and close for the day (Tea/Coffee Break)	Abiy/ Wanjohi

Homework II: Combined ^1H NMR and ^{13}C NMR problems

Day 3: Wednesday, July 31st 2024

Training Session 5		
09:00 - 10:30	Introduction to 2D NMR Spectroscopy: H,H COSY, HSQC/HMQC, HMBC	Abiy/Solomon/Mwaniki/Ndakala
10:30 -11:00	Tea/Coffee Break	
11:00 -13:00	Special 1D NMR, NOEDIF, NOESY/ROESY	Abiy/Mwaniki/Solomon
13:00 - 14:00	Lunch	
Training Session 6		
14:00 - 15:30	Running and Processing of 2D NMR	Abiy/Ivan/Alice
15:30 - 17:00	Interpretation of Combined NMR Spectra	Abiy/Mwaniki/Solomon
17:00 – 17:30	Open Discussion and close for the day (Tea/Coffee Break)	Abiy/ Wanjohi

Homework III: Combined Spectroscopy Problems

Day 4: Thursday, 1st August 2024

Training Session 7		
09:00 - 10:30	Interpretation of Combined NMR Spectra (contd.)	Abiy/Mwaniki/Solomon
10:30-11:00	Tea/Coffee Break	
11:00-13:00	Running and Processing of 2D NMR	Abiy/Ivan/Alice
13:00 - 14:00	Lunch	
Training Session 8		
14:00 - 15:30	Determination of Relative Configuration and Position of Substituents using NMR based on Coupling Constants	Solomon/Ndakala
15:30 - 17:00	Determination of Relative Configuration and Position of Substituents using NMR based on Coupling Constants	Solomon/Ndakala
17:00 – 17:30	Open Discussion and close for the day (Tea/Coffee Break)	

Day 5: Friday, 2nd August 2024

Training Session 9		
Venue: Room 119, Department of Chemistry		
08:30 - 10:00	Application of NMR Spectroscopy in Inorganic Chemistry - Some Examples	Kariuki/Mirikau
10:00 - 10:30	Tea/Coffee Break	
10:30 - 12:00	NMR in Qualitative and Quantitative Analysis	Onyari
12:00 - 13:00	Closing Ceremony and Award of Certificates	Onyari/Kariuki/Mulaa/Wanjohi
13:00 - 14:00	Lunch and Departure	