Report on 106th DAE-BRNS-IANCAS National Workshop on
"*Radiochemistry and Applications of Radioisotopes*"
at
Department of Physics
S. V. National Institute of Technology Surat 395007, Gujarat
January 8-12, 2024

The 106th DAE-BRNS-IANCAS National Workshop on "Radiochemistry and Applications of Radioisotopes" was organized at Department of Physics, S.V. National Institute of Technology, Surat during January 8-12, 2024. Dr. Suparna Sodaye and Dr. Chhavi Agarwal served as the Workshop coordinator and practical coordinator, respectively. Dr. Dipika Patel, Dept. of Physics, S.V. NIT, Surat was the Convenor of this workshop. Dr. Smitha Manohar, Director, NRG, BARC inaugurated the workshop and Dr. Usha Pandey, GM, BRIT was the Chief Guest in the valedictory function. The entire team of resource persons from BARC and the local coordinator being "women contributing to science" made this workshop a special one.

A total of 48 registered participants attended of the Workshop, which included the faculties and research scholars of SVNIT and 15 participants from different parts of the country like Rajiv Gandhi University-Itanagar, Osmania University-Hyderabad, IISER-Bangalore, TMC- Varanasi, MSU-Vadodara and other Universities of nearby Surat. All the participants were given Workshop Participation Certificate.

In the inauguration session, Dr. Smitha Manohar, Director, NFG, BARC, Dr. Pramod Mathur, Registrar, SVNIT, Dr. Suparna Sodaye, Workshop Coordinator, Dr. Dipika Patel, Local Coordinator, Dr. K.N. Pathak, Dr. D.R. Roy and A.K Rai from Dept. of Physics, SVNIT occupied the dice. Dr. Smitha Manohar, Chief Guest of the function, gave an overview of the Department of Atomic Energy emphasising the importance of Radiochemistry and Radioisotopes in peaceful uses. Later on, she also delivered a Keynote address on the topic "Nuclear Fuel Cycle – Indian Perspectives". Dr. Suparna Sodaye briefed about the theme of the workshop.

The technical program of the Workshop (*Enclosed*) comprised of 14 lectures and 4 practical. A total of 7 resource persons conducted the workshop (*List enclosed*). The lectures were held during the morning sessions and the afternoon sessions were reserved for the practicals. Experiments with G.M. counter, NaI(Tl)

scintillation gamma ray spectrometer and radioimmunoassay were conducted. Each experimental session involved discussion and interaction with the participants. Participants found the lectures and practicals very interesting and had long productive discussions with the resource persons.

Valedictory function was held in the afternoon of January 12, 2024. Dr. Usha Pandey, General Manager, BRIT, was the Chief Guest. Prof. S.N. Sharma, Head, Dept of Phys, SVNIT, Dr. D.R. Roy and Dr. K.N. Pathak, Dept of Phys, SVNIT, were also present in the function. A few participants, including students shared their impressions about the workshop. Dr. Usha Pandey responded to the feedbacks and emphasized the participants to apply radioisotopes in their research work. She appealed the participants to inform the people about the societal benefits of nuclear energy and radioisotopes. On behalf of IANCAS, Dr. Usha Pandey donated a GM counter and a NaI(Tl) detector to the Department of Physics, SVNIT, Surat. All the participants were given IANCAS participation certificates. The Workshop was concluded with a vote of thanks by Dr. Vikas Ojha. Thus, the 106th DAE-BRNS-IANCAS “All women” Workshop was concluded successfully. The workshop was well covered by local media, covering the prominent places in Hindi and Gujarati News Papers.

Technical Program

Time	Lecture/Title	Speaker
Jan 08,2024-Monday		
10:00–10:30	Inauguration Session	
10:30–11:00	Tea break	
11:00–12:00	**Key note**: Nuclear fuel cycle- a few perspectives	Dr. Smitha Manohar
12:00–13:00	**L1**:Introduction to Radioactivity and Decay	Dr. Suparna Sodaye
13:00–14:00	Lunch	
14:00–14:30	**L2**:Introduction to Practicals	Dr. Chhavi Agarwal
14:30–16:00	Hands on Experiments	
Jan 09, 2024-Tuesday		
09:30–10:30	**L3**:NuclearStructure,Nuclear Stability and Introduction to Nuclear Reactions	Dr. Suparna Sodaye
10:30-10:45	Tea break	
10:45:11:45	**L4**:Interaction of Radiation with Matter	Dr. Aishwarya Kar
11:45-12:45	**L5**: Radiation Detection and Measurements	Dr. Chhavi Agarwal
12:45-13:00	**Interaction session**	
13:00–14:00	Lunch	
14:00–16:00	Hands on Experiments with Nuclear Detectors	
Jan 10, 2024-Wednesday		
09:30–10:30	**L6**: Introduction to Nuclear Reactors	Dr. Ruma Gupta
10:30-10:45	Tea break	
10:45:11:45	**L7**: Isotope production	Dr. Aishwarya Kar
11:45-12:45	**L8**: Radiation Processing Applications	Dr. Jayshree Biswal
12:45-13:00	**Interaction session**	
13:00–14:00	Lunch	
14:00–16:00	Hands on Experiments with Nuclear Detectors	
Jan 11, 2024-Thursday		
09:30–10:30	**L 9:** Radiation processing: A versatile technique for Food preservation	Dr. Archana Mukherjee
10:30-10:45	Tea break	
10:45:11:45	**L10**: Application of Radioanalytical Techniques in Research	Dr. Chhavi Agarwal
11:45-12:45	**L11**: Application of Radioisotopes in Industry	Dr. Jayashree Biswal
12:45-13:00	**Interaction with faculty**	
13:00–14:00	Lunch	
14:00–16:00	Hands on Experiments with Nuclear Detectors	
Jan 12, 2024-Friday		
09:30–10:30	**L12**: Radioisotopes in Health care	Dr. Archana Mukherjee
10:30-10:45	Tea break	
10:45:11:45	**L13**: Health and Safety in Handling Radioactivity	Dr. Ruma Gupta
11:45-12:45	**L14**: Societal Application of Radioisotopes: BRIT activities	Dr. Usha Pandey
12:45-13:00	**Interaction with faculty**	
13:00–14:00	Lunch	
14:00–15:30	Valedictory function, Instrument Donation & Distribution of Participation Certificates.	

List of Experiments:

1. GM Counter: Plateau & Dead time
2. GM Counter: Statistics & Attenuation
3. NaI(Tl) Detector: Calibration & Resolution
4. Radioimmunoassay

Resource Persons

Dr. Suparna Sodaye, RCD, BARC
Dr. Archana Mukherjee, RPhD, BARC
Dr. Chhavi Agarwal, RCD, BARC
Dr. Aishwarya S. Kar, RACD, BARC
Dr. Jayashree Biswal, IRAD, BARC
Dr. Ruma Gupta, FCD, BARC
Smt. Chhaya P. Koli, RCD, BARC

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