



Regional (Asia-Pacific) Workshop

On

RADIATION DETECTION SYSTEMS FOR SAFETY, SECURITY AND SOCIETAL APPLICATIONS

17th – 19th October 2024

Amity Institute of Nuclear Science and Technology,
Amity University Uttar Pradesh, Noida Campus, India

Scope of the Workshop

Radiation detection systems are an integral part of safety, security and societal applications. These systems play a significant role in nuclear security systems to detect and respond to any kind of malicious act like unauthorised access, sabotage, illegal transfer, and theft involving nuclear and other radioactive materials. On the other hand, these systems play a vital role in achieving the Sustainable Development Goals (SDGs), specifically clean energy, zero hunger, good health and wellbeing. Hence, it is important to have trained personnel who can handle various radiation detection systems to prevent any incidents. Amity University, Uttar Pradesh is taking the initiative to create awareness of radiation detection systems for education and training.

The 3-day workshop is designed to provide insights into various radiation detection systems, offer practical training, and explore their roles in safety, security, and societal applications. The workshop will feature expert-led lectures, in-class demonstrations, and hands-on exercises followed by Nuclear Industry interaction. We aim to accommodate approximately 20 participants from the Asia Pacific Region, countries like Bangladesh, Myanmar, Indonesia, Malaysia, Thailand, including Indian participants. The event will take place at the Amity Nuclear Security Education Training and Research Facility (ANSETRF). Limited funding is available to assist with participant logistics.

Workshop Objectives:

- Invited talks by experts on new insights into safety, security, imaging techniques, emerging techniques, health care, agriculture, food etc.
- To provide training and hands-on experience on radiation detectors and equipment.
- Possible collaboration with various stakeholders for the usage of our facility.
- Demonstration of remote lab facility.

Experiments to be conducted during the workshop:

- Effectiveness of shielding materials to attenuate gamma radiations: Determination of HVT/TVT (using GM).
- Sensitivity analysis of portal monitors (speed of movement, height/depth of source container)



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Program Schedule

DAY 1 (17th October 2024) Venue: C-Block Auditorium

TIME	ACTIVITY	PROPOSED IMPLEMENTER
9:30-10:00	Registration /Networking tea	
10:00-10:05	Lighting of the Lamp & Invocation	Dr. Unnati Gupta All Dignitaries
10:05-10:10	Welcome Address & Objective of the workshop	Prof. (Dr.) Alpana Goel Director and Head
10:10-10:15	Valuable Insights	Prof. A. K. Jain Advisor and Honorary Professor
10:15-10:20	Address	Prof. K. M. Soni Dy. Dean of domain Engg & Tech
10:20-10:25	Inspiring words	Dr. W. Selvamurthy President, Amity Science, Technology, and Innovation Foundation
10:25-10:30	Special address by	Prof. (Dr.) Balvinder Shukla Vice Chancellor, Amity University Uttar Pradesh
10:30-10:35	Insightful words	Dr. Sunil Chirayath Distinguished R&D Scientist, Oak Ridge National Laboratory Guest of Honour
10:35-10:40	Key Remarks	Dr. A. K. Nayak Head, Nuclear Controls and Planning Wing, DAE, Mumbai Chief Guest
10:40-10:45	Words of wisdom	Dr. Atul Chauhan (TBC) Chancellor, Amity University Uttar Pradesh & President RBEF
10:45-10:55	Blessings & Way forward	Dr. Ashok K. Chauhan Founder President, RBEF, Amity University
10:55-11:00	Felicitation & Vote of Thanks	Prof. (Dr.) Alpana Goel & Dr. Abhishek Yadav
11:00 –11:15	Workshop High Tea	
11:15 -12:15	Keynote lecture	Topic Dr. A. K. Nayak Head, Nuclear Controls and Planning Wing, DAE, Mumbai Chief Guest
Session 1: Theme: Security & Safety Challenges in the Asia Pacific Region Session Chair: Prof. Dinesh Kumar Srivastava , Honorary Visiting Professor, NIAS, Bangalore		
12:15-13:00	Plenary talk	Nuclear Safety and Security – a View from India Dr. Manpreet Sethi Distinguished Fellow, Centre for Air Power Studies, New Delhi
13:00-14:00	Lunch	
14:00-14:30	Invited Talk	Principles of Nuclear Security Dr. Sunil Chirayath Distinguished R&D Scientist, Oak Ridge National Laboratory
14:30-15:00	Invited talk	A multi-disciplinary approach for Nuclear Security in India Dr. Garima Sharma Head, Safety & Security Study Division, DAE, Mumbai
15:00-15:30	Invited talk	Scintillators for Security Applications: Recent Trends and Challenges Dr. Anil Kumar Gourishetty Professor, Indian Institute of Technology Roorkee, Roorkee
15:30-15:45	Discussion Tea	
Session 2 Theme: Application of Isomers and isotopes in Health Care Session Chair: Prof. A. K. Jain , Advisor and Honorary Professor, AINST		
15:45-16:30	Plenary talk	Position Sensitive Detectors for PET Applications and Compton Imaging Dr. R. Palit Professor, Tata Institute of Fundamental Research (TIFR), Mumbai
16:30-17:00	Invited talk	How Radioisotopes help in Diagnosis and Treatment of Patients when Conventional Modalities Fail? Dr. Amrita Tiwary Vyas Head-Department of Nuclear Medicine, Yatharth Hospital, Noida
Break		
17:30- 18:30	Evening Talk – “Advances in Nuclear Technologies” Dr. Amit Roy Former Director, Inter University Accelerator Centre (IUAC), New Delhi Followed by Workshop Dinner @ Wall Street, Amity University	



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DAY 2 (18th October 2024) Venue: B-Block Conference room (LG06)

TIME	ACTIVITY	PROPOSED IMPLEMENTER
Session 1:		
Theme: Applications of the atom for Agriculture & Food		
Session Chair: Dr. D. Datta , Former Head, Radiological Physics & Advisory Division, BARC, Mumbai		
9:30 -10:15	Plenary talk	Sustainable Development using Machine Based Irradiator Technology and Applications Dr. Archana Sharma Director & Distinguished Scientist, Beam Technology Development Group BARC, Mumbai
10:15-10:45	Invited talk	Purpose based Gamma Radiation Processing of Agro Products Dr. Sanjay Rajput Head, Radiation Centre, Shriram Institute for Industrial Research, New Delhi
10:45-11:00 Discussion Tea		
Session 2:		
Theme: Applications of the atom for Agriculture & Food		
Session Chair: Dr. Archana Sharma , Director, Beam Technology Development Group, BARC, Mumbai		
11:00-11:30	Invited talk	Application of Machine Learning Technique to improvise the Peaceful Uses of Nuclear Technology in Food and Agriculture Dr. D. Datta Former Head, Radiological Physics & Advisory Division, BARC, Mumbai
11:30-12:00	Invited talk	Nuclear Technology: A greener approach ensuring Food Security & Safety Dr. S. Gautam Head, Food Technology Division, BARC, Mumbai
12:00-12:30	Invited talk	Radio-sensitivity of crops plants: The Dose effect relationship Dr. Bhupinder Singh Principal Scientist, ICAR-Indian Agriculture Research Institute, New Delhi
12:30-13:00	Discussion for future collaboration	Agriculture and Food: PGNAA for soil monitoring and fertilizers analysis Dr. Olshansky, Yury Iosifovich , Scientist / Advisor, ACEDS, Pvt. Ltd. Ms. Tatiana Borisova Marketing Head, ACEDS, Pvt. Ltd.
13:00-14:00 Lunch		
Session 3:		
Theme: Exercises		
Session Chair: Prof. Suresh Kumar , Professor, Department of Physics & Astrophysics, University of Delhi, Delhi		
14:00-14:30	Invited talk (Online)	Opportunities for Students @ GSI Dr. Pradeep Ghosh Head International Cooperations & Programme Manager, GSI
14:30-15:10	Demo-1 followed by Hands on training	Effectiveness of shielding materials to attenuate radiations: Determination of HVT/TVT Dr. Arpita Datta/Dr. Unnati Gupta (Demonstrator) Assistant Professor, AINST
15:10-15:45	Demo-2 followed by Hands on training	Security Exercises related to the facilities Dr. Arpita Datta/Dr. Sudatta Ray (Demonstrator) Assistant Professor, AINST
15:45– 16:00 Discussion Tea		
16:00-16:50	Demo-3 followed by Exercises	Showcasing of the state-of-the-art laboratory-remote lab Ms. Archana Yadav (Demonstrator) Assistant Professor, AINST Dr. Farheen Naqvi (As Expert & Observer) Texas A & M University, USA
Session 4:		
Theme: Discussion on Future Collaboration		
Session Chair: Prof. Alpana Goel , Director & Head, AINST, Amity University		
16:50-17:00	Asia Pacific talks	Dr. M. Shafiqul Islam Professor, Department of Nuclear Engineering, University of Dhaka, Bangladesh
16:50-17:10	Asia Pacific talks	Dr. Ing. Ir. Sihana Nuclear Engineering Undergraduate Program, Universitas Gadjah Mada, Indonesia
17:10-17:20	Asia Pacific talks	Dr. Saw Thantar Professor, Dept of Nuclear Technology, Technological University Kyaukse, Myanmar
17:20-17:30	Asia Pacific talks	Dr. Kamontip Ploykrachang Professor, Dept. of Nuclear Engineering, Chulalongkorn University, Bangkok
17:30 onwards	Dinner	



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Day 3 (19th October 2024)

Venue: B-Block Conference room (LG06)

TIME	ACTIVITY	PROPOSED IMPLEMENTER
Session 1:		
Theme: Detection & Protection systems		
Session Chair: Prof. B. P. Singh , Department of Physics, AMU, Aligarh		
9:30 -10:15	Plenary talk	Advances in radiation dosimetry techniques and systems Dr. B. K. Sapra Head, Radiological Physics & Advisory Division, BARC, Mumbai
10:15-10:45	Invited talk	Aspects of Application of RFID Coupled TLD Badges in Nuclear Island Dr. Shekhar Kumar Distinguished Scientist, Indira Gandhi Centre for Atomic Research, Kalpakkam
10:45-11:15	Invited talk	Response Time Reduction for Emergency Preparedness: India Specific needs Dr. N. K. Chaudhary Former-Scientist, Institute of Nuclear Medicine & Allied Sciences, New Delhi
11:15 -11:30	Discussion Tea	
Session 2:		
Theme: Detection & Protection systems		
Session Chair: Dr. B. K. Sapra , Head, Radiological Physics & Advisory Division, BARC, Mumbai		
11:30 – 12:00	Invited talk	Applications of radiation in pure and applied sciences @ UGC-DAE-CSR Kolkata Centre Dr. Sandeep S. Ghugre Centre-Director, UGC-DAE CSR Kolkata centre, Kolkata
12:00 - 12:30	Invited talk	Enhancing Safety with Advanced Radiation Detection Systems Prof. B. P. Singh Professor & Ex-Chairperson, Dept. of Physics, Aligarh Muslim University, Aligarh
12:30-13:00	Invited talk	Risk Communication in Nuclear Prof. M Sai Baba National Institute of Advanced Studies, Bangalore
13:00-14:00	Lunch	
Session 3:		
Theme: Nuclear Industry Interaction		
Session Chair: Prof. M. Sai Baba , NIAS, Bangalore		
14:00-14:20	Invited talk	ACEDS start-up: 1. Explosives in electronics: new threats, methods of detection. 2. Solid background of technology - 30 years of experience. Dr. Olshansky, Yury Iosifovich , Scientist / Advisor, ACEDS, Pvt. Ltd. Ms. Tatiana Borisova Marketing Head, ACEDS, Pvt. Ltd.
14:20-14:40	Invited talk	Our Technology in Container Scanners, Hand Luggage Screening, and Explosive Detection Systems (EDS) Mr. Parv Kumar Choudhary CTO/Director, ACEDS Pvt. Ltd.
14:40-15:00	Invited talk	General overview and structure: Company structure, achievements and collaborations of ACEDS Mr. Ronak Choudhary CMO/Director, ACEDS Pvt. Ltd.
15:00-15:20	Invited talk	Sookshma-(SUK-M) Dr. Samyak Munot IT Manager, Indian Youth Nuclear Society
15:20-15:45	Industry Interaction	MOU with AMITY & ACEDS Pvt. Ltd.
15:45 – 16:00	High tea	
16:00 ONWARDS	CONCLUDING & Vote of Thanks	Prof. (Dr.) Alpna Goel (Chair), Director & HOI, AINST Dr. Unnati Gupta (Convenor), Assistant Professor, AINST Dr. Abhishek Yadav (Co-convenor), Scientist, AINST



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Chief Patron:

Dr. Ashok K. Chauhan
Founder President, RBEF
Chairman, AKC Group of Companies

Patron:

Dr. Atul Chauhan
Chancellor AUUP
President, RBEF
CEO, AKC Group of Companies

Co-Patron:

Prof. (Dr.) Balvinder Shukla
Vice-Chancellor AUUP
Professor – Entrepreneurship, Leadership & IT

General Chair:

Dr. W. Selvamurthy
President, Amity Science, Technology and Innovation Foundation (ASTIF)
Director General, Amity Directorate of Science and Innovation (ADSI)
Chancellor, Amity University, Chhattisgarh

Chair(s):

Prof. A.K Jain
Hony. Professor & Advisor, AINST

Prof. (Dr.) Alpana Goel
Director & Head, AINST

Convenor:

Dr. Unnati Gupta
Assistant Professor-II, AINST

Co-Convenor:

Dr. Abhishek Yadav
Scientist, AINST

Organizing Committee:

Prof. (Dr.) Alpana Goel (Chair)

Prof. A. K. Jain (Chair)

Ms. Archana Yadav (Member)

Dr. Arpita Datta (Member)

Dr. Sudatta Ray (Member)

Dr. Unnati Gupta (Convenor)

Dr. Abhishek Yadav (Co-convenor)









