

About the workshop

Amity University Uttar Pradesh in collaboration with the Centre for Nuclear Security Science & Policy Initiative (NSSPI) at Texas A & M University (TAMU) USA is establishing a state-of-the-art laboratory for education and professional development in radiation detection and nuclear security sciences. The Défense Threat Reduction Agency (DTRA), USA, and Oak Ridge National Laboratory, USA are respectively the primary and secondary sponsors of the laboratory. One of the objectives of the laboratory is to provide hands on training on radiation detectors to the various stakeholders. In this regard, Amity Institute of Nuclear Science and Technology (AINST), Amity University Uttar Pradesh, Noida, India, and Centre for Nuclear Security Science & Policy Initiative (NSSPI) at Texas A & M University (TAMU) USA jointly organized three days' workshop on "THE PRACTICAL APPLICATIONS OF NUCLEAR SECURITY" which was held during 15th – 17th June 2022 at Amity University Uttar Pradesh, Noida Campus.

Workshop objectives were

- ❖ To provide hands-on experience on nuclear safety and security equipment
- ❖ To extend the visibility of facility for the future collaboration.
- ❖ To Gain experience by conducting exercises for recovery of different radioactive sources.
- ❖ To impart training on handling emergency situations with radiation detectors.

The resources persons are from Texas A & M University (TAMU) USA, Oak Ridge National Laboratory (ORNL) USA, Defence Threat Reduction Agency (DTRA), USA. The details are as follows:

1. Dr. Craig Marianno, Dy. Director NSSPI, Texas A & M University, USA
2. Mr. Norman Turk, Oak Ridge National Laboratory (ORNL)
3. Mr. Drew Bissell, Défense Threat Reduction Agency
4. Matthew Boyd, Texas A&M University Department of Nuclear Engineering
5. Joshua A. Handley, Oregon State University / Mirion Technologies (CANBERRA), Inc.
6. August Gene Bartholomew, Texas A&M University Department of Nuclear Engineering.

Inaugural 15th June 2022

The inaugural was chaired by Dr. W Selvamurthy, Chairman ASTIF, AUUP, apart from Guests from TAMU & DTRA, Advisor, Director & Head AINST. Dr. Selvamurthy also shared the presentation on the Amity Education Group. Dean, Heads and Directors of AUUP institutions joined for the same. For inaugural session apart from participants the following had joined.

1. Dr. Mukul Das, Director Shriram Institute for Industrial Research, New Delhi (Chief Guest)
2. Dr. N Madhavan, Inter University Accelerator Centre, New Delhi
3. Dr. Sanjay Rajput, Senior Asst. Director, Shriram Institute for Industrial Research
4. Dr. Ajay Tyagi, Associate Professor, Banaras Hindu University

5. Mr. Tarush Jain, Saru Smelting Pvt. Ltd., Meerut
6. Mr. Parth K Doshi, Nuvia India.

Session details:

1. Nuclear Security for Materials out of regulatory control: included characterization and identification of material out of the regulatory framework and the ways to neutralize the adversary.
2. Radiation detection instrumentation for nuclear security: functioning and principles of radioisotope identifiers, radiation portal monitors, and personal radiation detectors.
3. Consequence management for nuclear security events
4. Nuclear security instrumentation demonstration (working of radioisotope identifiers)
5. Search exercises: source in a room (hidden at various locations to be traced with help of RIID and survey meter), building (source placed in a room and entire floors to be traced for localization), vehicle check point (Strategy to be devised for placing the checkpoint)
6. Tabletop exercise and discussion
7. Radiation field mapping exercises (An accident was simulated and with help of mobile phones (as detector) radiation mapping was carried out)
8. Emergency response radiation detection

Valedictory 17th June 2022

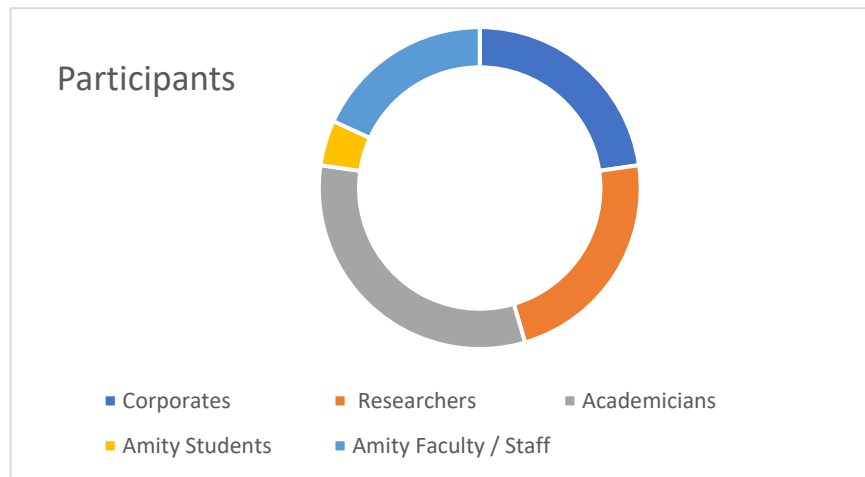
The workshop concluded on 17th June 2022. Dr. B P Singh, Department of Physics, Aligarh Muslim University joined as a guest of honour for the valedictory and certificates were given to the participants. Some participants provided verbal feedback appreciating the workshop and overall conduct. Feedback form was also circulated and analysis is provided.

The **outcomes of this workshop** are as follows:

1. Hands on exercises were conducted with radiation monitoring equipment which will help participants to detect and quantify radiation in case of both normal and emergency conditions.
2. Radiation monitoring (in field) is demonstrated which will help in consequence management in case of radioactive accident/outbreak.
3. Localization and identification of source in a room, car and building were carried out with different equipment to equip participants about source recovery.
4. The institutes laboratory facilities were brought to the notice of various institutes and organisations working in nuclear and allied sector, this will improve our opportunities of collaborations amongst these organizations.
5. AINST has connect with Industry and academia both which will provide us opportunities for collaboration for research projects, industrial assignments, and opportunities to work with government agencies like Atomic Minerals Directorate, Regional Office Delhi, Shriram Institute for Industrial Research Delhi, Banaras Hindu University to name a few.

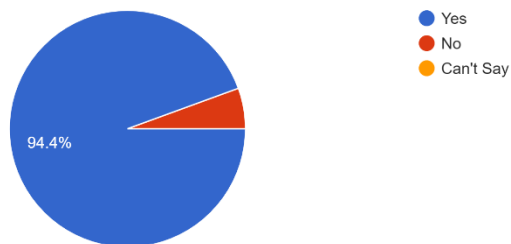
Participant composition

Feedback analysis:



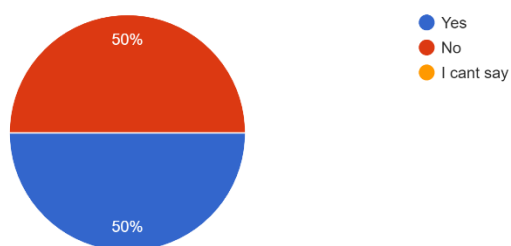
Was the technical information provided to you in the lecture useful and added to your knowledge ?

18 responses



Have you ever used and seen the RIID's used in the practical training?

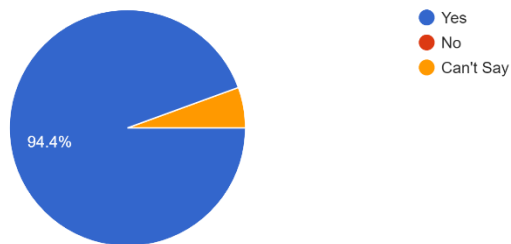
18 responses



Workshop on the practical Applications of Nuclear Security, 15-17th June 2022.

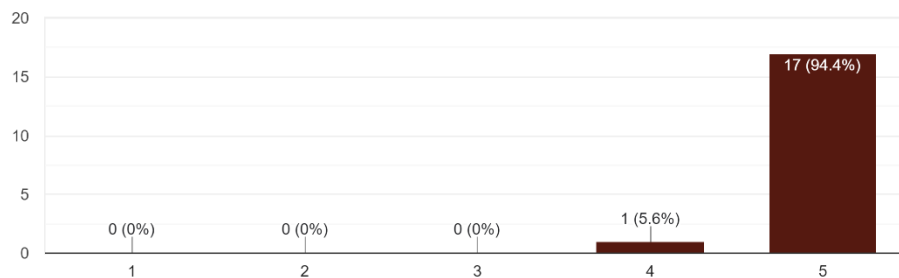
The practical training give you a feel of issues related to nuclear security?

18 responses



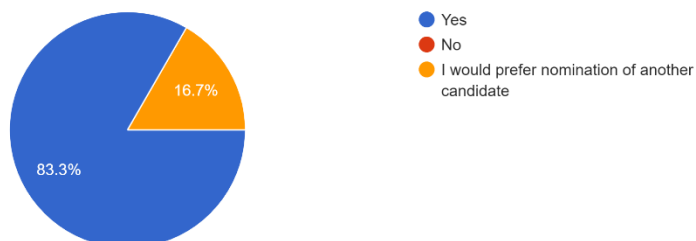
How would you rate the Hands on training part of the workshop?

18 responses



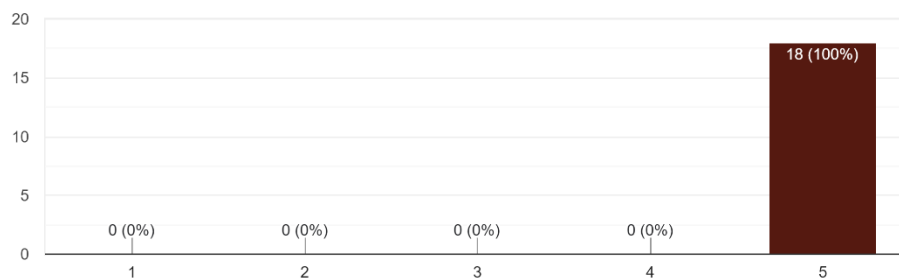
Would you be interested in participation in such upcoming workshops?

18 responses



Please provide rating for stay and Hospitality

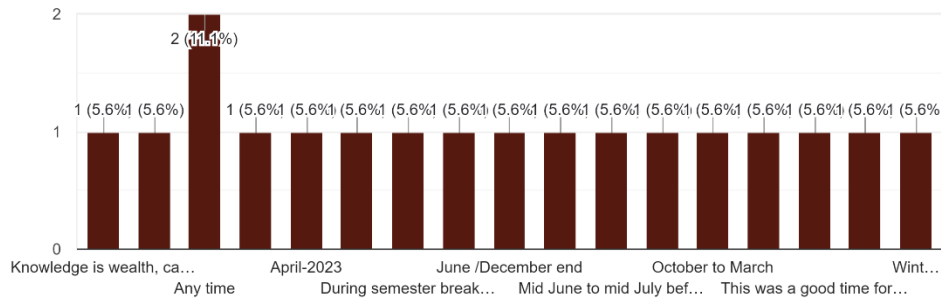
18 responses



Here 5 stands for excellent and 1 for Poor.

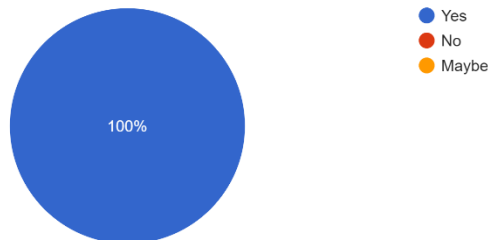
What would be the preferred time for workshop.

18 responses



Did the workshop achieve the laid down objectives?

18 responses



The feedback collected gave the following insights/ Areas of improvement:

1. More workshops to be conducted during the same time or December to include more participants.
2. An evaluation may be included at the end to assess the learnings.
3. Indian counterparts to be invited and include their perspective of handling emergency situations.
4. Most of the participants have no experience of handling radiation monitoring devices. They were equipped with the information, and it is an important takeaway.

Future Scope:

1. These workshops to be planned twice or thrice a year to train more candidates.
2. National/international conference can be planned in line with objectives of nuclear radiation detection, analysis, nuclear safety, and security.
3. Laboratory to be made available to potential users for utilization for research purpose at a nominal cost. This may include universities and research organizations.
4. Collaborations to be extended to government agencies like Atomic Minerals Directorate for them to utilize the facility developed and hence have joint publications and projects subsequently.
5. Interaction with faculty members from other institutions will provide room for collaborative/joint projects

List of Participants

S. No	Surname	First Name	Corresponding Email	Institute/Affiliation	Phone number	Designation
1	Kumar	Alok	alokpal541andc@gmail.com	Indian Institute of Technology Bombay, Mumbai	8467002351	Research Scholar
2	Yadav	Abhishek	abhishekyadav117@gmail.com	Department of Physics, Jamia Millia Islamia, New Delhi	8368743061	Faculty
3	ALI	SURAJ	surajali11664@gmail.com	Muralidhar Girls' College	8961372476	Faculty and JRF
4	Jana	Subrata	jana.subrata2k16@gmail.com	Mody University	9537276359	Faculty
5	Kaur	Kritika	kritika.kaur@thermofisher.com	ThermoFisher Scientific	9999313549	Technical Manager
6	Goswami	Himanshu	rprs@sarumetals.com	Saru Smelting Private Limited	9457742887	Deputy Manager
7	Basu	Sansaptak	s.basu@vecc.gov.in	Variable Energy Cyclotron Centre, Kolkata	8697003413	Senior Research Fellow
8	KUMAR	SURESH	skumar@physics.du.ac.in	Department of Physics and Astrophysics, University of Delhi	9599762352	Associate Professor
9	Gupta	Unnati	unnatig@gmail.com	AINST, AUUP	9650873366	Assistant Professor
10	Datta	Arpita	adatta@amity.edu	AINST, AUUP	7042026802	Assistant Professor
11	Ray	Sudatta	sray@gmail.com	AINST	9910940892	Assistant Professor
12	Bhattacharya	Dr. Sutanu	sutanu.bhattacharyaa@amity.edu	Amity Institute of Nuclear Science & Technology	8250650761	Research Associate
13	Asnain	Mohd Shariq	asnainshariq@gmail.com	Aligarh Muslim University	8938985212	Research Scholar
14	Yadav	Archana	ayadav3@amity.edu	AINST, AUUP	9540018081	Assistant Professor
15	Chauhan	Apurv	apurv.chauhan@nuvia.com	Nuvia India Pvt Ltd	7409884050	Site Engineer
16	Kaushik	Aruna	kaushik_aruna@rediffmail.com	INMAS	9899194912	Scientist
17	Rawat	Prashant	psrawat@ddn.upes.ac.in	University of Petroleum and Energy Studies (UPES)	8979000000	Associate Professor
18	Gokul	Sharma	gokul.sharma@ametek.com	AMETEK Instruments India Private Limited	9830632329	Area sales manager
19	Saini	Devender	erdev.saini87@gmail.com	Shriram Institute for Industrial Research	9891844251	Radiation Safety Officer

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20	THORAT	SHRIKANT	shrikantthorat1997@gmail.com	JRF	8975443603	Junior Research Fellow
21	Sharma	Nitin	nitinprasher7@gmail.com	Central University of Jharkhand	7986520773	Junior Research Fellow
22	Maiti	Moumita	moumifph@gmail.com	Indian Institute of Technology Roorkee, Department of Physics	7579200711	Associate Professor

Glimpses of the workshop!



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