ISTRA

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Regional Training Course on Certification in Residence Time Distribution and Column Scanning Techniques, Saclay, FRANCE, 1-12 July 2024

The certified personnel in radiotracer and column scanning techniques are urgently needed in each member state of the International Atomic Energy Agency (IAEA) to increase the industries confidence in the application of these techniques. The International Society for Tracer and Radiation Applications (ISTRA) in collaboration with the IAEA and the National Institute for Nuclear Science and Technology (INSTN) successfully hosted the Regional Training Course on Certification in Residence Time Distribution and Column Scanning Techniques in Saclay, France, 1-12 July 2024.

The training course was organized under the Asia and the Pacific TC project "RAS1030"- Using Radioisotope Techniques and Computational Fluid Dynamics Simulation for Troubleshooting and Optimizing of Industrial Processes. There were eleven participants from eleven countries from the region, namely: Mr. Md Ahsanul Habib (Bangladesh), Mr. Bayu Azmi (Indonesia), Mr. Phimmachan Khamphanmay (Lao P.D.R.), Mr. Hanafi Ithnin (Malaysia), Mr. Boldbayar Otgonbaatar (Mongolia), Ms. Moe Phyu Hlaing (Myanmar), Mr. Muhammad Badar U Zaman (Pakistan), Mr. Thaar Mohammad Aljuwaya (Saudi Arabia), Ms. Kosgahamula Gedara Harshani Nayomi (Sri Lanka), Mr. Akara Akkaranate (Thailand), and Mr. Chau Nguyen (Vietnam).

Radiotracer and column scanning techniques are needed by the oil and gas, petrochemical, fertilizer, energy, cement, and even wastewater processing industries. The gamma column scanning technique, for example, is very useful for detecting malfunctions in the process column while the column is operating. Meanwhile, the radiotracer technique can be applied to study the residence time distribution (RTD) in the process industry, flow rate, and fluid leakage.

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Experts from ISTRA consisting of Prof. Dr. Jovan Thereska, Dr. Patrick Brisset, and Dr. Thorsten Jentsch became the instructors in this training. This training and certification consists of theory classes, practical classes, and exams which are all conducted at INSTN facilities. The first week was filled with the delivery of theory consisting of basic of radiation physics, radiation detection and statistics, radiological considerations, gamma scanning methodology, application of gamma scanning technique, radiotracer methodology, Residence Time Distribution (RTD) measurement and modeling, and application of radiotracer technique.

Figure 1. Group photo on the first week.

The second week consisted of practical activities, practical exams, and written exams. The practices carried out included gamma column scanning technique, radiotracer technique

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for flowrate measurement, and RTD measurement. All participants gained experience in applying gamma column scanning and radiotracer techniques for themselves, including doing it for the graduation exam. At the end of the second week, a theory exam was held and the good news is that all participants were declared to have passed and were certified as ISTRA level-2 Certified Agent in residence time distribution and column scanning techniques.

Figure 2. Group photo on the second week.

The training course will once again be very beneficial for all participants. The certificate obtained will be the initial capital to promote and apply these techniques in their respective countries.

Thanks to IAEA, INSTN and ISTRA. Thanks also to Ms. Hannah Affum, Prof. Dr. Jovan Thereska, Dr. Patrick Brisset, Dr. Thorsten Jentsch and all involved in this training course.

Text: Mr. Bayu Azmi

Photos: participants