

	International Society for Tracer and Radiation Applications	Volume 04
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National Training Course & Certification on Industrial Radioactive Tracer from 19 -22 October 2021 in Malaysia

Malaysian Nuclear Agency (Nuclear Malaysia) has successfully organized the inaugural certification course entitled National Training Course & Certification on Industrial Radioactive Tracer from 19-22 October 2021 using Zoom Cloud Meetings as the platform of the course. Plant Assessment Technology, a subsidiary of Industrial Technology Division has selected potential participants from various backgrounds to undergo Level 1 – (Junior Field Technician) in radiotracer technology application course. The candidates basically are the technicians and officers from Nuclear Malaysia who have had experienced dealing and working with radiotracer activities under supervision. Nevertheless, the organizer has by invitation, invited participation from universities, industrial sectors and the public to attend on Day-1 of the course with the objective to disseminate awareness and knowledge about radiation application in industries. We received crowd participation on Day-1 and interaction between speakers and participants were amazing as in Figure 1.



Figure 1. Some of the candidates during the first course day



The objectives of the course, the examination, and the certification are to enable radioactive tracer method to be carried out efficiently and safely; pertaining to the qualification and responsibilities should be defined prior conducting any radiotracer works.

Qualifications and responsibilities for Level 1 (typically Junior Field Technician) are defined as follows:

- He/she is responsible for safely and efficiently carrying out the instructions of the Level 2 - Senior Field Technician.
- The individual has demonstrated competency to carry out radioactive tracer work according to written instructions and under the supervision of Level 2 or Level 3 personnel.
- He/she may be authorized by the Level 2 personnel to perform the following in accordance to the instructions; to set up equipment; to perform the tests; to record and classify the results of the tests according to written criteria; and to report the results.
- He/she shall neither be responsible for the choice of test method or technique to be used, nor for the interpretation of test results.

The 4 days course has equipped the candidates with the fundamental knowledge of Radiotracer Technology, radiation properties and detection equipment, preparation of radiotracer, industrial execution and its safe conduct respectively. Demonstration of data analysis and Residence Time Distribution (RTD) model were also shown on the fourth day. Moreover, the syllabus of the course can be found in Figure 2. The speakers were Prof. Dr. Jovan Thereska from our International Society for Tracer and Radiation Application (ISTRA), Dr. Noraishah Othman, Dr. Mohd Fitri Abdul Rahman, Dr. Nazrul Hizam Yusoff and Ts. Dr. Mohd Amirul Syafiq Mohd Yunos from Nuclear Malaysia, respectively. The lectures were started at 9 am until 1 pm daily by local experts and due to different of time zone, Prof. Thereska was giving his lectures at 2pm until 5pm (Malaysian time) for 3 consecutive days. There were total of 23 eligible candidates sitting for the certification examination.

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The passing mark was set to 70% and Prof. Thereska has given his words that the first two scorers will be nominated to Level 2 Certification which will be held in Seibersdorf 2022. On the final day, the examination was held virtually. However, some of the candidates did their examination in the Meeting Room in Nuclear Malaysia and others conducted the test virtually at their own respective location as shown in Fig. 3.

**NATIONAL TRAINING COURSE AND CERTIFICATION ON
INDUSTRIAL RADIOACTIVE TRACER
JUNIOR FIELD TECHNICIAN - LEVEL 1**
Date: 19 - 22 October 2021 (Online)

<p>PROGRAM OVERVIEW</p> <p>Industrial radiotracer techniques is one of the most versatile and effective methods of process diagnostic and flow investigation. The use of radiotracers in oil transport and processing industrial facilities allows calibrating flowmeters, measuring mean residence time in process vessels, locate points of obstruction or leak in underground ducts, as well as investigating flow behavior or industrial processes such as in waste water treatment plant. Inspection techniques using radiotracers are non-destructive, simple, economic and highly accurate. This 3 days course is designed based on Radiation Protection for Officer Program (RPO) and is being recognised by International Society for Tracers and Radiation Application (ISTRA) and International Atomic Energy Agency (IAEA) for the high standard in radiation safety aspects. Participants who have meet the requirement are allowed to sit for the Industrial Radiotracer level 1 Examination, conducted by ISTRA. Successful candidates will be awarded Level 1 - Junior Field Technician certification by ISTRA.</p>	<p>COURSE CONTENT</p> <ul style="list-style-type: none"> <input type="checkbox"/> Introduction to Radiotracer Technology <input type="checkbox"/> Fundamental of Radiation Physics and Statistics <input type="checkbox"/> Radiation Detection & Equipment <input type="checkbox"/> Introduction to Radioactive Tracers <input type="checkbox"/> Industrial Radiotracer Methodology & Techniques <input type="checkbox"/> Planning & Execution of Radiotracer Technology <input type="checkbox"/> Radiotracer Application: Malaysia Scenario <input type="checkbox"/> Consequences of Radiation Expose <input type="checkbox"/> Radiological Monitoring Equipment and Methods <input type="checkbox"/> Radiation Safety, Emergency Preparedness & Response for Radiotracer Techniques <input type="checkbox"/> Safety and Emergency Procedure <input type="checkbox"/> Flow Rate Measurement <input type="checkbox"/> Residence Time Distribution (RTD) <input type="checkbox"/> Leakage Detection <input type="checkbox"/> Radioactive Tracer Preparation <input type="checkbox"/> Radiotracer Injection Procedure <input type="checkbox"/> Radiotracer Flow Rig & Experimental Setup <input type="checkbox"/> New Developments in Radiotracer Technology <input type="checkbox"/> Specification, Code & Standard for Industrial Radiotracer Applications
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Figure 2. The brochure of said certification course.



Figure 3. Candidates during the examination in the meeting room.

Upon completion and submission of the test, Ts. Dr. Mohd Amirul Syafiq as the Course Director has reviewed and discussed the questions. The idea was to ensure the candidates fully understand the basic concept and industrial radiotracer execution. Overall, 17 candidates have passed the set mark with 8 persons obtained 90 points and above. Successful participants are certified as ISTR A Level 1 – Junior Field Technician with 5 years provisional certificate and the rest of the participants are given the attendance and competency certificate. In conclusion, Nuclear Malaysia has successfully organized the first certification course to provide the concrete platform for the junior technicians in facilitating the industrial radiotracer execution especially at industrial plants.