

INVITATION to a Practical and Experiential Day "Detection of Radiological and CBRN Materials" for students and teachers

Organizer:

The Institute of Mathematics and Natural Sciences in cooperation with the Hungarian Defense Forces Artúr Görgey Chemical Defense Information Center (GAVIK), with additional lecturers and tutors from IDEAS Science Ltd. and CryDet Ltd.

Focus: "Military methods and capabilities for radiation detection of radioactive materials."

Dates and languages: 09 May (Thursday), on the same day, in Hungarian and English simultaneously.

Starting time: 9h 15min (in Hungarian) and 9h (in English).

Location: Knowledge Transfer Centre, MATE Szent István Campus

- Lecture Hall 09: in Hungarian

- Lecture Hall 12: in English

The aim of the event: to re-provide the so-called experiential learning day in the field of detection of radioactive and other CBRN materials, which was already organised last semester and which has proved to be useful based on the feedback, and which aims to provide a unique combination of theoretical knowledge and practical experience, mainly for our students from home and abroad, *but we are also looking forward to welcoming our Colleagues!*

The lectures this semester will be complemented by a demonstration of a domestically developed digital microscopy and a thermal camera remote sensing system.

The programme of the event is closely linked to the MATI Institute's course "Remote Sensing and Measurement of Radioactive Materials", which builds on the results of the recently completed EU project "EMPIR2020, RemoteALPHA, Project Number 19ENV02". Of course, we also expect the participation of our interested Colleagues.

Morning sessions. The session is open to all interested students and no registration is required.

Afternoon sessions, exercises: participants will carry out practical emergency measurements, including dose rate measurements, surface contamination measurements and isotope identification. These activities are led by the best military experts in the field. In addition, there will be a special opportunity to learn about scintillation detector measurement techniques from experts from CryDet Ltd. in Gödöllő.

Note: The maximum number of participants is 25. This session is exclusively for students enrolled in the related C-subject and those who have registered in advance (see link below)

Planned Programme:

As the event will be held in two lectures in parallel, the order of the lectures may vary. For this reason, the planned presentations and their estimated duration are given instead of a detailed programme.

The afternoon practical sessions will be held in a common venue, to be agreed on the day.

Thursday 09 May:

- 8:30 - 8:55: Reception and gathering ° Greeting of guests and participants, informal networking.

Start of the programme:

English: 9h 00, Knowledge Transfer Centre 12.

In English: 9h 15, Knowledge Transfer Centre 09.

The Hungarian language

- 9:00 - 9:10: Welcome and introduction ° Dr. László Székely, Director of the MATI Institute will introduce the day's events.

- 9:10 - 9:25: Focus on alpha radiation detection

o Dr. Róbert István Nikolényi will talk about the challenges of alpha radiation detection and the breakthroughs that the RemoteAlpha project has achieved in the last 2 years.

- 9:25 - 11:45: Military expertise in radiation detection

o Presentations by leader military officers and experts from GAVIK (led by Captain Zalán Mészáros), including:

♣ Nuclear weapons operation and strategic significance.

♣ Risks associated with depleted uranium weapons.

♣ The radiation detection capabilities of the Hungarian Defence Forces.

o These presentations discuss knowledge and misconceptions about nuclear risks, radiological explosives and their detectability. They will also provide an opportunity to meet directly with the best practitioners. The lectures will not only provide knowledge, but will also give participants the opportunity to question the experts.

- 10:45 - 11:05: Break

- 11:45 - 12:05: Solutions for the detection of R.N. and B. substances

o Lecturer: IDEAS Science Ltd

o The presentation will present an international project currently underway that will result in a mobile biohazard detection device. The speaker will provide insight into the development process, highlighting challenges and innovative solutions.

- 12:05 - 12:10: Transition to the practical session

o Information on the afternoon's practical activities.

- 12:10 - 13:45: Lunch break

- 13:50 - 15:30: Practical session °

- Led by military experts, participants will perform emergency measurements including dose rate measurements, contamination measurements and isotope identification.

- Under the guidance of CryDet Ltd. (leader: Zoltán Csiki, Managing Director), participants will learn the basics of scintillation detector measurement techniques.

- 15:30 - 15:40: Closing remarks