INVITATION AND PROGRAMME

Professional Days – Experiential Learning Days for Engineering Students

The Institute of Mathematics and Basic Science of the Hungarian University of Agriculture and Life Sciences (MATE), in cooperation with the Hungarian Defence Forces' László Sodró 102nd Chemical Warfare Regiment, CryDet Ltd. of Gödöllő and IDEAS Science Ltd., is once again organising professional days—experiential learning days—for Hungarian and international engineering students.

Previous editions of these events attracted considerable interest and were successful. This year's programme is designed to provide theoretical and practical experience in military radiation detection, the detection of radioactive materials, modern measurement techniques, and sensing technologies relevant to CBRN preparedness.

Please note: presentations will be delivered in both Hungarian and English on both days, making the programme accessible to Hungarian and international students.

Dates and times:

- **Tuesday, 10 November 2026, 9:00 a.m.–3:00 p.m.** – theoretical professional day
- **Friday, 13 November 2026, 9:00 a.m.–3:00 p.m.** – practical, experiential learning day

Venue: MATE, Knowledge Transfer Centre, Lecture Hall TK-11.

Day 1 – Theoretical Foundations and Expert Lectures

Tuesday, 10 November 2026, 9:00 a.m.–3:00 p.m.

Speakers:

- **Captain Zalán Mészáros** and **Captain Zoltán Vámos** – Hungarian Defence Forces, László Sodró 102nd Chemical Warfare Regiment
- **Dr István Róbert Nikolényi** – MATE, presenting in connection with the RemoteAlpha project

Planned topics:

- The operation and effects of nuclear weapons.
- What is the difference between nuclear weapons and radiological weapons?
- Radiation detection in disaster situations and following military strikes.
- Remote detection of alpha-emitting radioactive materials: results of the EMPIR 2020, 19ENV02 RemoteAlpha project, in which MATE participated.
- CBRN detection and modern reconnaissance solutions.

The lectures will introduce students to the theoretical, technical and operational aspects of military radiation detection and provide opportunities to ask questions and engage in professional discussion.

Proposed Schedule

Time	Programme
9:00–9:15	Opening and introduction – speaker to be confirmed
9:15–10:00	Alpha-radiation detection and results of the RemoteAlpha project – Dr István Róbert Nikolényi; presentations in Hungarian and English
10:00–10:15	Coffee break
10:15–12:00	Military radiation detection, nuclear and radiological threats – Captain Zalán Mészáros and Captain Zoltán Vámos; bilingual presentations and discussion
12:00–12:45	Lunch break
12:45–2:30 p.m.	Modern measurement and sensing technologies and CBRN preparedness – technical presentations and discussion
2:30–3:00 p.m.	Questions, professional discussion and closing remarks

Day 2 – Practical Demonstrations and Experiential Learning

Friday, 13 November 2026, 9:00 a.m.–3:00 p.m.

1. Scintillation Gamma Measurement Techniques – CryDet Ltd.

Presented by Zoltán Csiki, Managing Director of CryDet Ltd.

CryDet Ltd. will demonstrate the practical fundamentals of scintillation measurement, the use of scintillation detector probes, gamma-ray measurement, and the interpretation of readings from a multichannel analyser.

2. Military Radiation Detection in Practice – Hungarian Defence Forces, László Sodró 102nd Chemical Warfare Regiment

Led by Captain Zalán Mészáros and Captain Zoltán Vámos.

Under the guidance of military specialists, participants will learn about the workflow of military radiation detection and the practical use of radiation-measuring instruments. The session will also demonstrate detection activities carried out while wearing protective clothing and gas masks.

3. New Feature: MoxyZcan – Intelligent Environmental Sensing for Urban CBRN Preparedness – IDEAS Science Ltd.

Presented by Dr Bela Györgyi, Managing Director of IDEAS Science Ltd.

A special feature of this year’s practical day is a presentation of the MoxyZcan environmental sensing platform by IDEAS Science Ltd. The network-connected system supports continuous data collection for gas sensing, particulate-matter measurement and environmental monitoring. Its measurement approach also includes analysis of the gas sensor’s response at different heater temperatures.

Developed within the European BEHOLDER project, the platform demonstrates possibilities for continuous monitoring and data collection in urban environments, including the observation of environmental changes that may be relevant to potential CBRN events. This presentation complements the traditional radiation-detection and measurement programme with a focus on modern sensor technology and connected environmental data collection.

Proposed Schedule

Time	Programme
9:00–9:15	Opening and introduction to the practical programme – speaker to be confirmed
9:15–10:15	Scintillation gamma measurement techniques – Zoltán Csiki, Managing Director of CryDet Ltd.; presentation and demonstration in Hungarian and English
10:15–10:30	Coffee break
10:30–12:00 p.m.	Military radiation detection in practice – Captain Zalán Mészáros and Captain Zoltán Vámos; bilingual technical briefing and demonstration
12:00–12:45 p.m.	Lunch break
12:45–2:15 p.m.	MoxyZcan and intelligent environmental sensing – Dr Béla Györgyi, Managing Director of IDEAS Science Ltd.; presentation and demonstration in Hungarian and English
2:15–2:45 p.m.	Questions, exchange of experience and discussion

Note: The programme and schedule are provisional and may change!

The opening speaker is yet to be confirmed. The detailed timing may also be adjusted following coordination with the speakers, particularly to accommodate the bilingual presentations.

Registration

Advance registration by e-mail is required. Please send your registration to **Nikolenyi.Istvan.Robert@uni-mate.hu**.

E-mail subject: “Szakmai napok / Professional Days”

Please include your name and indicate which day(s) you wish to attend: Tuesday, 10 November (theoretical day), Friday, 13 November (practical day), or both days.

Important: advance registration is particularly important for the practical day on Friday, because the number of protective suits and other equipment required for the military training must be planned according to the number of participants.

The order of programme items may change. We look forward to welcoming interested engineering students!

Dr István Róbert Nikolényi
Assistant Professor
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