



3rd Scientific Conference on CBRN Protection

HAZMAT PROTECT 2018

SÚJCHBO, v. v. i., Kamenná, Czech Republic

13th – 15th November 2018

PROGRAMME

13. 11.

10.30 – 11.00

Welcome opening

Ing. Jiří Slabotinský, CSc., Ing. Tomáš Dropa – SÚJCHBO, v. v. i.
plk. Ing. Daniel Miklós, MBA – MV-GŘ HZS ČR

11.00 – 11.50

Introductory presentations

Session chairman: RNDr. Josef Břínek, Ph.D.

Prohibited future of chemical weapons and point of protection against them

prof. Ing. Vladimír Pitschmann, CSc. – Oritest, s. r. o., Praha

Quo vadis CBRNe forensics?

Ing. Pavel Častulík, Ph.D. – RECETOX, Masaryk University Brno

Discussion

12.00 – 13.30

Lunch

13.30 – 14.45

Detection and identification

Session chairman: Ing. Pavel Častulík, CSc.

Instrumental analysis of fentanyl and its derivatives

Ing. Romana Jelínková, Ph.D. – University of Defence in Brno

Paper detector using Nile blue indicator and results after exposition of this paper to CWA

Mgr. Michal Dymák – SÚJCHBO, v. v. i., Kamenná

Comparison of methods for B-agents inactivation for purpose of their detection

Mgr. Oldřich Kubíček, CSc. – SÚJCHBO, v. v. i., Brno

Employment of sensors based on conductive polymers for monitoring concentration of toxic vapors and gases

RNDr. Vladimír Obšel, CSc., DEZA, Brno

Discussion

14.45 – 15.00

Coffee break



13. 11.

15.00 – 16.15 **Detection and identification**

Session chairman: Ing. Lukáš Králík

Comparison of testing methods employment for isolative barrier materials chemical resistivity against acids

doc. Ing. Pavel Otřísal, Ph.D., MBA – University of Defence in Brno, Vyškov

Preparation of precise concentrations of toxic substances for testing and calibrations

Mgr. Jakub Vaněk, Ph.D. – SÚJCHBO, v. v. i., Brno

The hydration bags constructive materials resistivity against chemical warfare agents and their comparison

prof. Ing. Stanislav Florus, CSc. – University of Defence in Brno, Vyškov

Comparison of outputs from the software aloha and terex in dispersion modelling of selected hazardous substances

Mgr. Adam Hendrych – MI-General Directorate of Fire Rescue Service of Czech Republic, Praha

Discussion

16.15 – 16.30 **Coffee break**

16.30 – 17.45 **New materials**

Session chairman: RNDr. Josef Břínek, Ph.D.

Nanofiber composite materials as protection against CBRN agents

Ing. Petr Mikeš, Ph.D. – Technival University of Liberec

Antimicrobial nanofiber structures

Ing. Marcela Munzarová – Nanovia, s. r. o.

Permeation chemical warfare agents through the adsorption materials

Ing. Jiří Slabotinský, CSc. – SÚJCHBO, v. v. i., Brno

Laminated composite and sandwich foils (membranes) based on graphenoxide with nanotextiles

doc. Ing. et Ing. Karel Klouda, CSc., Ph.D., MBA – SÚJCHBO, v. v. i., Kamenná

Discussion

17.45 – 19.00 **Coffee break**

19.00 – 22.00 **Conference evening**



14. 11.

8.30 – 9.30 **Effects of CBNR agents on organism**

Session chairman: Mgr. Jakub Vaněk, Ph.D.

Currently used pesticides – introduction, legislation, occurrence and fate in the environment, hazard and risks

doc. RNDr. Jakub Hofman, Ph.D. – RECETOX, Masaryk University Brno

Human exposure and risk assessment of pesticides

Mgr. Katarína Řiháčková, Ph.D. – RECETOX, Masaryk University Brno

The impact of metal ions on the acetylcholinesterase inhibited by the nerve agents „V“ type

Ing. Monika Hoskovcová, Ph.D. – University of Defence in Brno, Vyškov

Discussion

9.30 – 9.45 **Coffee break**

9.45 – 11.15 **Decontamination**

Session chairman: Ing. Jiří Slabotinský, CSc.

New inorganic, metallo-organic and composite materials for destruction of highly dangerous chemicals

prof. Ing. Pavel Janoš, CSc. – J. E. University, Ústí nad Labem

Decontamination of chemical warfare agents using iron in high oxidation states (ferrates)

Ing. Marek Andrlé, Ph.D. – Military research institute, Brno

Metal-organic Framework UiO-66 for organophosphate degradation in aqueous environment

Ing. Daniel Bůžek – J. E. Purkyně University, Ústí nad Labem

Use of fluorescent powder to determine contamination and decontamination efficiency

Ing. Josef Holeček – SÚJCHBO, v. v. i., Kamenná

Assessment of secondary contamination after applying of current military decontamination methods

RNDr. Josef Břínek, Ph.D. – SÚJCHBO, v. v. i., Brno

Discussion

11.30 – 13.00 **Lunch**

13.00 – 13.45 **Plasma technologies and decontamination of hazardous substances**

Ing. Jan Čech, Ph.D. – CEPLANT, Masaryk University, Brno

The QUIXOTE project: “Quick Xor Technology for B&C cold-plasma decontamination”

Ing. Karel Mazanec, Ph.D. – Military research institute, Brno

Discussion

14.00 – 17.00 **Poster session**

Commercial exhibition, Product demonstration

15.30 – 18.30 **Facultative trip***

19.00 – 22.00 **Conference dinner**

* There is possibility to join a trip to Mining museum in Příbram on 14th November in the afternoon. The registration for the trip will be via on-line form at the conference website in October 2018.



15. 11.

9.00 – 10.00 **Hot news in PPE**

Session chairman: Ing. Pavel Častulík, CSc.

Attenuation of penetrating ionising radiation in shielding layers of newly developed personal protective equipment materials

Ing. Michaela Kozlovská – SÚJCHBO, v. v. i., Kamenná

Testing of heat strain of persons placed in portable isolation unit

Ing. Jiří Slabotinský, CSc. – SÚJCHBO, v. v. i., Brno

Determination of thermal resistance of field uniforms according to en 15831

Ing. Jan Fišer, Ph.D. – Faculty of Mechanical Engineering, Brno University of Technology

Discussion

10.00 – 10.15 **Coffee break**

10.15 – 11.30 **Prevention of work risks in demanding environment**

Session chairman: RNDr. Josef Břínek, Ph.D.

Characteristics of dangerous chemical substances spread in specific conditions

Ing. Martin Staněk – Faculty of biomedical engineering, Czech Technical University in Prague

Application of thermophysiological model to predict the human heat stress in protective clothing

Ing. Jan Pokorný, Ph.D. – Faculty of Mechanical Engineering, Brno University of Technology

Sensitivity study of Fiala-based human thermophysiological model

Ing. Barbora Kopečková – Faculty of Mechanical Engineering, Brno University of Technology

Personal monitoring system designed to improve the safety and agility of the integrated rescue system

doc. Mgr. Zdeněk Hon, Ph.D. – Faculty of biomedical engineering, Czech Technical University in Prague

Discussion

11.30 – 12.00 **Conference closing**

12.00 – 13.30 **Lunch**

POSTER SESSION

Factors influencing B-agents detection using quantitative polymerase chain reaction

Ing. Karel Bílek, Ph.D. et al. – SÚJCHBO, v. v. i., Kamenná

Decontamination of injured persons

Mgr. Radka Filipčíková, Ph.D., MBA, LL.M., MPA et al. – Faculty of Health Sciences, Palacký University Olomouc

Use of the HRM analysis in pathogen identification

Mgr. Martina Grochová – SÚJCHBO, v. v. i.

New generation of portable monitors for provision of population protection

Ing. Lubomír Gryc – National Radiation Protection Institute, Prague

Places for identification of persons with highly contagious diseases and connection to procedures on mitigation of the event regulated by International Health Regulations 2005

Ing. Pavel Kostka – EGO Zlín, s. r. o.

Comparison of stationary phases for effective chromatographic separation of aflatoxins

Ing. Dana Moravcová, Ph. D. et al. – Institute of Analytical Chemistry of Czech Academy of Sciences, Brno

Preparation of gas sensors based on conductive polymers in combination with nanofibrous structures

RNDr. Vladimír Obšel, CSc., DEZA – Detekce a záchyt škodlivin, Brno

In-line deposition of barrier thin films in plasma

Ing. Mgr. Lubomír Prokeš, Ph.D. et al. – Faculty of Science, Masaryk University Brno

Generation and prediction of mobile phase gradient for miniaturized liquid chromatography system

Ing. Josef Šesták, Ph.D. et al. – Institute of Analytical Chemistry of Czech Academy of Sciences, Brno

Clothing evaporative resistance measurement using thermal manikins

Ing. Róbert Toma et al. – Faculty of Mechanical Engineering, Brno University of Technology

Technical solutions of CBRN decontamination in transport infrastructure

RNDr. Michal Turek et al. – Dekonta, a. s., Dřetovice

Portable underpressure isolation unit of BSL-3 level with decontamination module for operation under various climatic conditions

Ing. Miroslav Veselý et al. – EGO Zlín, s. r. o.