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EDITORIAL

SYMBIOSIS OF ENVIRONMENTAL PROTECTION AND OCCUPATIONAL SAFETY IN TOXIC, EXPLOSIVE AND FLAMMABLE ATMOSPHERES: CURRENT KNOWLEDGE AND ADVANCES

This special edition of *Environmental Engineering and Management Journal* is dedicated to current knowledge and research on environmental management and occupational health and safety in industrial activities generating toxic, explosive and/or flamable atmospheres. It includes papers reviewed and communicated during the *International Symposium on Occupational Health and Safety (SESAM 2013)* organized by the National Institute for Research and Development in Mine Safety and Protection to Explosion – INSEMEX Petroşani, along with the University of Petroşani and Labour Inspection Bucharest, held between October 23rd – October 25th in Sibiu, Romania.

The event was organized by an international scientific committee comprising three invited speakers, who are traditional collaborators of the institute, namely: Prof.Dr.Sc.Eng. Józef Dubiński, Dr. Akos Debreczeni, Dr. Alois Adamus, as well as by a national committee including specialists and experts in the thematic area of the symposium: Dr. Artur George Găman, Dr. Constantin Lupu, Dr. Emilian Ghicioi, Dr. Sorin Burian, Dr. Ion Toth, Constantin Ciocoiu, Prof.Dr.Eng. Aron Poantă, whose efforts have led to successfully achievement of the symposium.

By organizing this scientific meeting, INSEMEX Petroşani continues a long tradition of scientific events and provides a major support to all participants, both on the level of national economy and the representatives of state authorities and academia, to meet together as specialists in environmental protection and occupational health and safety.

This scientific event supports the dissemination of research, development and innovation activities, aiming to reach a major goal, namely the *symbiosis of environmental protection and occupational safety for workers operating in toxic, explosive and flammable atmospheres.*

As shown by the symposium topics, the organizers intended to combine theoretical and practical aspects on environmental and labour protection, in an event where representatives of research institutes, universities, labour inspectorates, economic agents and other stakeholders met together in an harmonized scientific context.

In terms of environmental protection, industry is one of the most important fields of anthropogenic activity. This is because sometimes industrial development does not take into account that the actual progress of human society depends not only on the industry products, but also on industrial sustainability, by the integration of all three components: economic, social, environmental. In accordance with the environmental policies of the Community, it is required to be established minimum requirements for preventing or reducing as minimum as possible the adverse effects upon the environment or human health. Also, the sustainable and economic development strategies of Romania within the European Union require to be ensured the minimal requirements related to occupational health and safety, based on the European Community *acquis* on occupational health and safety.

Taking into account the previously mentioned, the event made possible the communication of scientific concerns of researchers, both in the area of

environmental protection field and occupational health and safety.

Since the modern society combines the efforts of researchers for ensuring healthy workplaces climate as well as for air, water and soil protection, by decreasing the environmental impact as much as possible, several papers deal with new methods for assessing, preventing and fighting against pollutants arising from the underground or surface mining industry, by applying scientific and technical research developed in the past few years.

The use of IT systems and software has become an extremely useful and versatile tool, which support the research activity in terms of modeling, simulation and optimization addressing the impacts of physical-chemical stressors on environmental factors, but also upon the occupational environment and workers. An enduring aspect entails the protection of human life in industries with explosion, flammability and toxicity hazards. In this regard, the researches for the improvement of rescue activity were addressed in the symposium, in order to highlight the relevance of the enhancement of the protection against explosions and to facilitate the selection of optimal solutions for re-establishing the mining ventilation after the occurrence of major underground events, which generate burning gases exhausted to the atmosphere.

Also, a constant concern of researchers is the characterization of safety properties of installations, products and materials used in several specific activities, such as: mining industry (minerals, oil, and gases), energy industry and chemical industry for the development eco-friendly technological processes.

All studies illustrated in this issue are of high scientific and practical value, having the occupational health and safety and environmental management in industries with explosion and/or toxic hazard as bonding factor.

The editors would like to thank the reviewers for their help in evaluating the papers included in this issue. Their cooperation was essential for the accomplishment of our project.

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George Artur Găman – PhD., Eng. Ec. is the General Director of the National Institute for Research and Development in Mine Safety and Protection to Explosion – INSEMEX Petroşani, starting with 2014. He began his research career within INSEMEX in 1990, following all the researchers stages one by one, now being a senior researcher, 2nd degree.
The scientific activity which he performed within the 24 years of experience in research, development and innovation mainly focused on the management of the activity for rescue and intervention in toxic/explosive/flammable atmospheres. He published 6 books in the field, developed many scientific papers and projects which led to the solving of safety and rescue issues in the industry. Also, besides the carried out scientific activity, he is an initiator of legal acts in the occupational health and safety field, founding member of the International Mines Rescue Body (IMRB) and the Romanian representative in its Executive Board. Ten years ago, he founded the Association for Surface Mining Rescuers (ASMS), which now counts 600 members, being also its president.