

Preface

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Description of the symposium

Between 27 and 28th of May 2021, at the University of Petroșani took place the 9th edition of the International Multidisciplinary Symposium "UNIVERSITARIA SIMPRO 2021", the online organization of the parallel sessions and workshops being a premiere. Under the motto "QUALITY AND INNOVATION IN EDUCATION, RESEARCH AND INDUSTRY - THE SUCCESS TRIANGLE FOR A SUSTAINABLE ECONOMIC, SOCIAL AND ENVIRONMENTAL DEVELOPMENT" (Figure 1), the 2021 edition brought together researchers from several countries (Greece, Germany, Hungary, Georgia, Poland, Russia, Ukraine, Jordan, France and, of course, Romania). The total number of papers presented in plenary and parallel sessions was of 125 prepared by 321 authors (although, initially, a number of 175 abstracts were submitted, of which 145 papers were uploaded and evaluated by the reviewers – 20 of them being rejected or withdrawn).



Fig.1. Logo of the Symposium.

The symposium was organized under the auspices of the Ministry of Education, Academy of Romanian Scientists, Academy of Technical Sciences of Romania and General Association of Engineers in Romania, and in partnership with the National Authority for Scientific Research, Hunedoara County Council, Labor Inspectorate, Alumni Association of the University of Petroșani, CDPM Union, Salrom – National Salt Society and Total Business Land. The media partners for his edition were MATEC Web of Conferences – open access proceedings journal by EDP Sciences, Sustainability - an open access journal by MDPI and Education Sciences - an open access journal by MDPI.

The symposium started with the greeting of the organizers, respectively of the Rector Prof. Dr. Eng. Sorin Mihai Radu and of the Vice-rector for Scientific Research Prof. Dr.

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Habil. Eng. Maria Lazar from the University of Petroșani and of the general director Sci. Res. I Dr. Eng. Artur George Găman from INSEMEX Petroșani (Figure 2).



Fig. 2. Opening ceremony.

Five papers were scheduled for the plenary section, presented by personalities from different fields. The papers aimed at presenting the results of recent research in the field of mining engineering carried out by speakers or visionary approaches on the new mission of universities or the responsibility of society regarding the sustainable use of raw materials.

As in previous years, the symposium was organized in several sections, covering a thematic area that reflected the scientific interests of researchers from the University of Petroșani, as well as other universities and research institutes in the country and abroad. Also, four workshops were organized corresponding to the important international projects carried out within the university.

Section 1, *Advances in safety science and occupational risk management*, was moderated by Sci. Res. II Dr. Eng. Vlad Mihai Păsculescu from INSEMEX Petroșani and Lect. Dr. Eng. Mihai Popescu-Stelea from the University of Petroșani, the secretariat being provided by Lect. Dr. Eng. Monica Crinela Burdea. This section hosted a number of 20 papers, which addressed current issues related to security and risk management in various industrial sectors, but also to the educational conditions in the field during the pandemic period (Figure 3a).

Section 2, *Challenges in mining, mineral processing, surveying and civil engineering*, moderated by Prof. Dr. Habil. Eng. Mihaela Toderaș and Assoc. Prof. Dr. Eng. Dacian-Paul Marian from the University of Petroșani, secretary Lect. Dr. Eng. Klaus Fissgus. This topic has brought together 18 papers, authored by researchers from several countries, most of them focused on the main issues related to the underground and surface exploitation of useful mineral substances (Figure 3b and 4a).



Fig. 3. a. Presentation from section 1; b. Presentation from section 2.

In section 3, *Sustainable environmental engineering and protection*, moderated by Sci. Res. I Dr. Eng. Angela Călămar from INSEMEX Petroșani and Prof. Dr. Habil. Eng. Maria

Lazar from the University of Petroșani, secretary Assist. Prof. Dr. Eng. Izabela Maria Apostu, 23 papers were presented, which covered the field of environmental engineering and protection in different fields of activity (Figure 4b).



Fig. 4. a. Presentation from section 2; b. Presentation from section 3.

Section 4, *Innovational challenges in electrical engineering and energetic technology*, was moderated by Assoc. Prof. Dr. Eng. Marius Marcu from the University of Petroșani, and the secretariat was provided by Lect. Dr. Eng. Florin Gabriel Popescu. This section hosted a number of 13 papers, focused mainly on ensuring the sustainability of energy systems (Figure 5a).

In section 5, *Developments in systems control, information technology and cybersecurity*, moderated by Prof. Dr. Habil. Eng. Monica Leba from the University of Petroșani, seconded by Res. Assist. PhD Stud. Arun Fabian Panaite, 9 papers were presented that addressed topics related to smart cities, neural networks and the use of fuzzy logic in various fields of activity (Figure 5b).

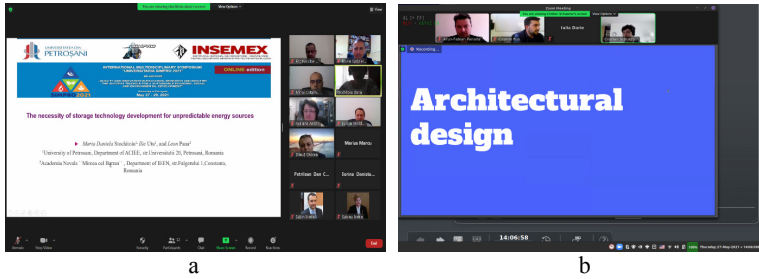


Fig. 5. a. Presentation from section 4; b. Presentation from section 5.

Section 6, *Industrial and mechanical engineering and transportation*, moderated by Assoc. Prof. Dr. Eng. Andrei Andraș, having the secretariat provided by Lect. Dr. Eng. Stela Dinescu, gathered 8 papers, most of them addressing aspects related to mechanical engineering (Figure 6a and b).

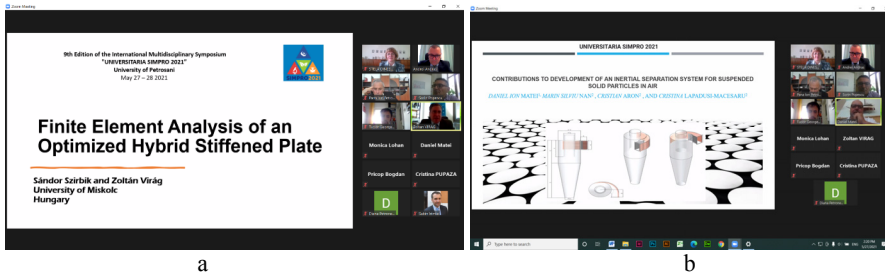


Fig. 6. a. Presentation from section 6; b. Presentation from section 6.

Due to the fact that for section 7, *Applied mathematics, informatics and physics*, a small number of papers were received, they were redistributed to other sections with a similar topic.

In section 8, *Recent trends in business, economics, law and public administration*, moderated by Assoc. Prof. Dr. Codruța Dura from the University of Petroșani, secretariat provided by Assoc. Prof. Dr. Mirela POPESCU, 12 papers were presented, which covered a wide range of research in the field of banking economy, governance, etc. (Figure 7a).

Section 9, *Contemporary approaches in quality assurance, management and marketing*, was moderated by Prof. Dr. Habil. Eng. Andreea Ionică, and the secretariat provided by Assoc. Prof. Dr. Eng. Mihaela Ghicajanu. In this section were presented 8 papers on quality assurance, management and marketing (Figure 7b).

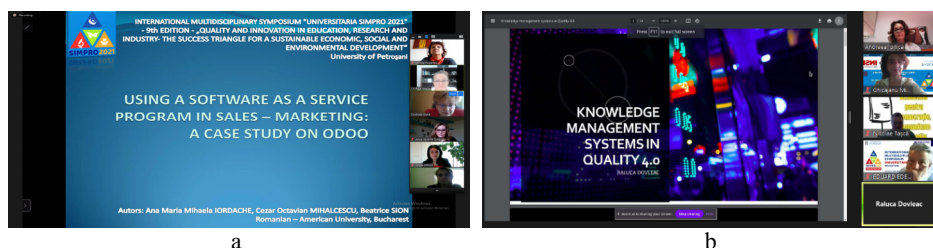


Fig. 7. a. Presentation from section 8; b. Presentation from section 9.

Sections 10 and 11, *Achievements in humanities and social sciences*, respectively *Education research, sustainable development and interdisciplinary studies*, took place under the leadership of Prof. Dr. Habil. Felicia Androni, the secretariat being provided by Lect. Dr. Laura Marica (Figure 8a and b).

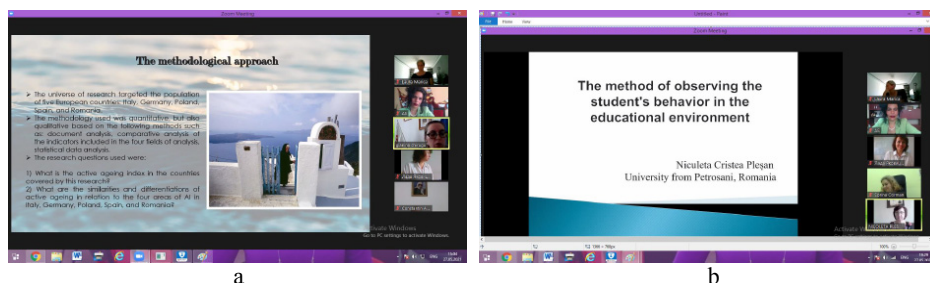


Fig. 8. a. Presentation from section 10; b. Presentation from section 11.

Each section ended with a Q&A session, during which not only were detailed aspects related to the presented papers, but there were discussions on future developments in the field and the possibilities for interpersonal and inter-institutional cooperation.

A peculiarity of this year's edition of the SIMPRO Symposium was the organization of the four parallel workshops (on 28th of May). Three of them were dedicated to debates on grants in which the university is involved, and the fourth aimed to organize debates on the effects of the CoVid 19 pandemic on the economic, social and educational environments.

EURECA-PRO – Sustainable production and consumption. Today and tomorrow. Moderator: Prof. Dr. Habil. Eng. Codruț Petrelean from University of Petroșani, Romania (Figure 9a).

RAFF – Risk assessment of final pits during flooding. Moderator: Sci. Res. Dr. Eng. Adam Bajcar from POLTEGOR Wroclaw, Poland (Figure 9b).

RIS- CuRE – Zero waste recovery of cooper tailings in the ESEE region. Moderator: Sci. Res. Dr. Eng. Alenka Mauko Pranjč from ZAG, Slovenia (Figure 9c).

CoVid-19 Pandemic. Causes, implications and interdisciplinary resolute perspectives.
Moderator: Prof. Dr. Hbil. Felicia Andrioni from University of Petroșani, Romania (Figure 9d).

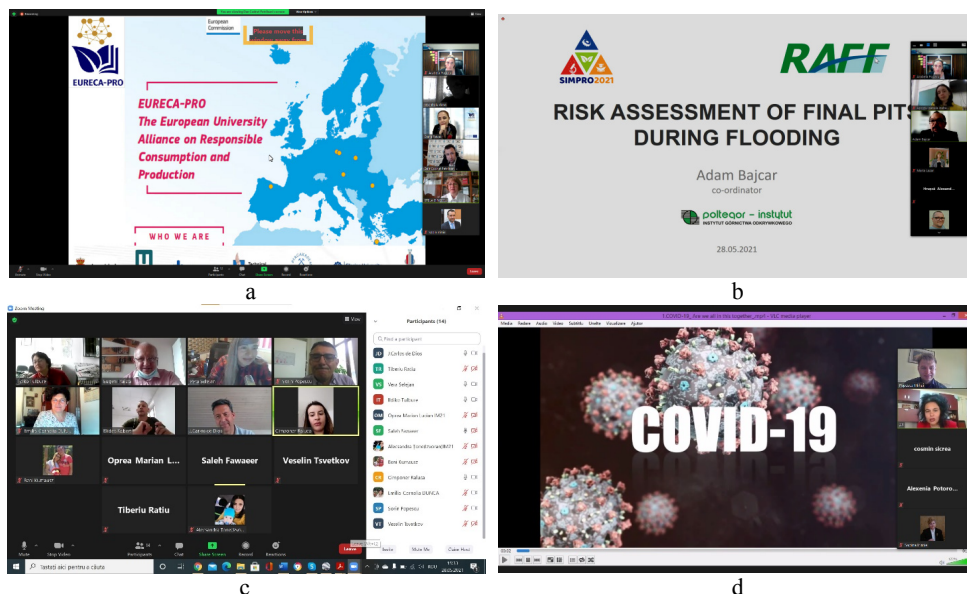


Fig. 9. a. EURECA-PRO workshop; b. RAFF workshop; c. RIS-CuRE workshop; d. CoVid 19 Pandemic workshop.

It should be noted that, except for three papers whose authors failed to connect to the communication platform for technical reasons, all papers accepted by the reviewers and editors were presented. The papers presented will be published by MATEC Web of Conferences and, hopefully, indexed on the Web of Science platform and in other important databases. Remarkable is the collaboration with Sustainability and Education Sciences as media partners, two MDPI journals that have covered our symposium on their websites and social networks.

Although atypical, by the number, diversity and quality of the presented papers, by the sustained communication between specialists in the covered topics, by the major interest regarding the projects debated in the workshops, it can be stated that this year's edition of the International Multidisciplinary Symposium "UNIVERSITARIA SIMPRO 2021" was a real success, being an opportunity for the exchange of ideas between researchers from the country and from abroad.

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