

# SUMMARY

The habilitation thesis entitled "Studies and analyzes regarding the topographic management of underground works under technical safety conditions" highlights the results of the research activity, carried out after the defense of the doctoral thesis in 2009, entitled „Possibilities for upgrading underground topographic bases”, being composed of 3 main directions:

1. Teaching activity
2. Scientific activity
3. University career development activity

The three apparently distinct parts create the academic link necessary for personal professional scientific training with direct consequences in the training activity of specialists in the cycles: bachelor's, master's and doctorate.

The didactic activity consists in the elaboration of a number of 18 didactic materials, as sole author, first author and also in collectively. These include 5 applied practical works, 13 courses, 1 scientific monograph (single author).

The latter entitled "Mining topography - studies and analyses" is unique and represents a didactic work with a scientific character.

The scientific activity consists of:

- Participation in solving a number of 18 scientific research topics as a person in charge, or as a member of the collective.
- Elaboration of a number of 62 scientific papers as sole author, first author or in collective;
- Participating in the elaboration of a number of doctoral theses as a member of guidance committees or as an official referent.

The theme of the research topics was oriented in three main directions:

1. Monitoring the phenomenon of displacement of underground mining works and surfaces determined by mining activity.
2. Improvement of topographic methods and techniques in order to ensure the necessary precisions leading to safety in achieving mining objectives.
3. Increasing the quality of teaching activities and compliance with deontological and academic ethics norms.

The research topics, corresponding to the first direction, appear in the national scientific research program, I am responsible and refer to:

- Follow-up by topographical measurements of the surface deformations in the perimeter of influence of the mines and Ocne Vechi and of the buildings located in the areas of influence of Ocna Dej.
- Monitoring the phenomenon of stability related to the exploitation of the deposits at Tg Ocna - measures to reduce them, the forecast of their evolution and influence on the carrying out of the activity of exploiting the deposits in safe conditions for personnel, equipment, machines.

The research topics corresponding to the second direction are developed and published in ISI and BDI rated journals or supported in national and international scientific sessions. There are 62 of them and they refer to: improving the mining topography computer base in order to increase safety in the management of underground mining works.

Corresponding to the third direction as responsible, I obtained through competition at the level of the Ministry of Education and Research the theme: "Opportunities for academic

development in the University of Petroșani by examining the quality of the activities of teaching staff and respecting the deontological and academic ethics norms".

The habilitation thesis considers both the course of my academic career and the scientific concerns and contributions, through reference works in the field of Mines, Oil and Gas, respectively of mining topography.

The university career development plan presents the strategic perspective of achieving the degrees and the university mission. The university career development objectives and research directions are nominated.

Research directions will be developed so that together with future collaborators / partners we can access research grants launched in national or international competitions, and the dissemination of research results will be achieved by publishing scientific articles in prestigious journals ISI or BDI.

I propose to continue writing specialized books that include as many of the results obtained in research throughout my career as possible, useful I hope to the fields of Mines, Oil and Gas, also broadening the material base of laboratories in the department where I carry out my research by accessing research grants and indirectly, by collaborating with the economic environment.

In the last section I have included the important bibliographic references that support both the contributions presented in the thesis and the further developments I propose.