

## GRANTS FOR PH.D. STUDENTS ON VSB-TECHNICAL UNIVERSITY OF OSTRAVA IN THE CZECH REPUBLIC

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### **Abstract:**

Projects and grants are unique for development of science and research. For many people it is only source of money for their research. Particularly on universities the projects expanded. From this reason the participation of Ph.D. students in the Student Grant Competition is the best start in this field.

Paper discusses in its first part how the Student Grant Competition takes its place on Technical University of Ostrava. Focuses on difficulties with submission of the application, explain process of whole project evaluation and states total amounts acquired from the Ministry of Education, Youth and Sports for Student Grand Competitions since 2010. Second part of this paper directly shows concrete project for "Research of utilization of mining waste in chosen localities." In the paper is described subject of the research, concrete goals of project, timetable. It is stated the preliminary budget of project and actual progress in the project.

*Key words:* student grant competition, grant, project, utilization of mining waste

### **INTRODUCTION**

Information about Student Grant Competition on Technical University of Ostrava are beneficial also outside the Czech Republic. It is possibility for the professional public from abroad to familiarize with terms and process of Grants for students and university employees. It is possible in this way to get comparison with possibilities of getting and process of university grants.

In this paper is also one example of concrete case of solved project, which is focusing its aim to utilization of mining waste. This example is chosen with considering actuality of this problem with mining waste. Not only for the needs of mining companies is necessary to find suitable application for the waste from mining operations. This waste negatively effects the environment, burdens the mining organizations especially from the economical point of view and also the legislation pushes the mining organizations for its utilization.

### **STUDENT GRANT COMPETITION**

Students and employees of the university are in this way every year supported in their research and scientific works. Their scientific, technical and educational activities are developing and there is also effort for foreign cooperation. By getting the grant the students and employees of the university are learning how to work on their own projects and what is required for it. Student has to follow directives and valid principles of Student Grant Competition. Publishing of achieved results is one of the most important evaluation criteria.

### *Application*

For the participation in the Student Grant Competition is required to submit a application in the set deadline (from 1. 11. To 20. 12. of the year) On the Faculty of Mining and Geology the applications were submitted till 31. 10. because the applications cannot be returned to the applicant for additions of information, more accurate cementation of professional or financial part. The application is called: "Application for financial support of projects within specific university research." It consists of: Name of the project, name of responsible researcher (responsible researcher could be Ph.D. student or academic, science or research employees of Technical University of Ostrava) and pertinent his tutor, members of research team, subject of research in the project (in the short annotation is stated what will be researched, what is the subject of research), budget of project (amount and character of supposed needed financial resources) and specification of the research output (goals of the project). In this place is written brief description of supposed results, solution procedure and timetable.

After approval of the application for the financial support of project, these goals of the project will be checked in the final control. In the final control student submit final report with reached conclusions and assessments of the project goals. This report has to be defended in front of the faculty committee which will evaluate whole project [1].

### *Evaluation*

The result of project is positive is depending on the reached point level during the project. The projects with grant up to 200 000 Czech crowns will be considered



**Fig. 1** Examples of heaps

“excellent” if researchers reach at least 40 points, “adequate” with at least 20 points and under 20 points is considered as “insufficient.” The projects with grant over 200 000 Czech crowns will be considered “excellent” by reaching at least 60 points, “adequate” with at least 40 points and under 30 points is considered “insufficient.”

For example for the paper in the non-impacted reviewed journal from the field of Mining and Geology is possible to get 4 points. For paper in the proceedings (the proceedings has to be noted in the Conference Proceedings Citation Index – Science or in Social Science & Humanities – previously ISI proceeding – from Thomson Reuters company) is for 8 points. For paper in the impacted journal (papers listed in following databases: Web of Science from company Thomson Reuters science Citation Index Expanded – SCI-EXPANDED – 1945 – present; Social Science Citation Index – SSCI – 1980 – present; Art & Humanities Citation Index – A&HCI – 1980 – present; Index Chemicus – IC – 1993 – present; Current Chemical Reactions – CCR-EXPANDED – 1986 – present) is possible to get 10 to 305 points depending on the size of journal impact factor.

These “student grants” are only for one year. It is necessary to evaluate reached results from provided support in the manner set by Ministry of Education, Youth and Sports till the March of next year from the beginning of project. The evaluation has to be presented by the means supporting remote access. Even year after the end of project is possible to submit additional specified results of project which were not evaluated right after the end of the project [2].

#### *The allocated subsidies*

Total allocated amount from for specific university research for Technical University of Ostrava for year 2013 from the Ministry of Education, Youth and Sports is 50 297 000 Czech crowns. For the year 2012 was allocated amount 40 767 000 Czech crowns, in year 2011 the Technical University of Ostrava got 30 345 000 Czech crowns and for year 2010 the university got 25 868 000 Czech crowns. More information about this “student projects” could be found on internet site: <http://innet.vsb.cz/cs/uni/veda-a-vyzkum/sgs/> [3].

#### **EXAMPLE OF SOLVED CASE**

After unsuccessful application from year 2011 followed in the year 2012 new one which was approved. In comparison to the first one, the second had more clearly explained

goals of the project and it results. Approved project is listed under the name: “Research of utilization of mining waste in chosen localities.” It deals with research of mining waste, its characterization, localization and methods of use.

#### *Subject of research*

During the research the samples from various locations will be taken (see Fig. 1), which will be analyzed and evaluated in the research laboratories of research center for rocks by the Technical University of Ostrava. Together with these operations the study of this issue will be studied together with the information about the locations. After summary of results the appropriate use for this mining waste will be suggested. The appropriateness of the product will be evaluated with respect to the actual situation on the market. In the accordance to the needs of mining organizations will be suggested real Plan for the process of works for the use of this mining waste in which will be also incorporated needs of the mining organization from the point of view of capital and personal coverage, security and safety and time demands.

For setting the type and quantity of produces which should be successful on the market it will be necessary to come from the previous suggestions for the use of mining waste, needs of the mining organization and most importantly acceptable mining technology. Not less important will be economical evaluation for the use of mining waste depending on the needs of mining organization [4].

#### *Main goal of the project*

The main goal of the project is finding of real use for the mining waste on the base of identified petrographic, physical-technical and mechanical properties of mining waste at chosen locations in the Czech Republic. The output will be Plan for working procedures for the utilization of mining waste at various locations with regard to the applicable regulations. In the plan will be defined concrete procedures, operation and needs of mining organization. Part of the research will be also analysis of the market with for the products for appropriate implementation of suggested product from the mining waste. The analysis will be done also with the analysis of demand evolution and behavior of competitors in the immediate surroundings of selected locations.

Presentation of the project will be on the international and also domestic scientific conference with active participation and subsequently in the proceedings or in journals of

SCOPUS database. Results of the project will be post in the Czech reviewed journals. The structured plan of work progress for the utilization of mining waste will be created [4].

#### Timetable

1. Preparation and realization of the project (January 2013).
2. Summary of findings with the given theme, acquiring of needed information from chosen location – researches and study of sources (February – May 2013).
3. Retrieval, analysis and evaluation of mining waste samples (February – June 2013).
4. Proposal for appropriate use of waste (May – August 2013).
5. Research for possibilities for the proposed product to be placed to the market (June – September 2013).
6. Plan of concrete work progress for chosen locations (August – October 2013).
7. Presentation of research results, final report (November, December 2013) .

#### Project budget

The project acquired total amount 380 000 Czech crowns. From this 50 000 Czech crowns will be passed on stipendium for the researchers (total 4 persons); 79 000 Czech crowns for material costs (e.g. literature, office supplies, media, protective equipment, equipment for the sampling); small tangible and intangible assets (mobile device for processing and transportation of data; computer capacities) for 100 000 Czech crowns; for services (laboratory test, copy services, translations and corrections) is allocated amount of 60 000 Czech crowns; travel costs (travel and accommodation for sampling and consultation) for 33 000 Czech crowns; 20 000 Czech crowns will cover costs for participation on two domestic respectively international conferences. These are the expected financial costs for project solving. Real costs will be known at the end of the project (in the October of this year) [4].

#### Progress of the project

Two members of the research team are in the duration of this project on the study internship in Poland and in Austria, from this reason were requested for extension of the

project on the countries Austria and Poland. Inasmuch as the tutor (responsible supervision) is partly Slovak, it was also requested to extend the project on Slovakia. Project by this act gained importance. Identify information about mining wastes in all four countries is very difficult. Summarized and compare those information with this issue is very interesting. Namely the differences in the legal interpretation of mining waste. Project is in the phase of sample retrieval and its analysis and evaluation.

#### CONCLUSION

The importance and significance of getting a Grant respectively Project which is completely funded is not needed to mention. First choice how to have your own project is to participate in the Student Grant Competition. This is the first step for getting invaluable experiences with solving of your own project. From this reason is in this paper intentionally mentioned concrete solved project. This gives better idea about the Student Grant Competition.

#### ACKNOWLEDGMENTS

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