Annex No. 3

The External Evaluation Report of a Doctoral Study Domain

Contents

I. Introduction
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III. Analysis of performance indicators
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I. Introduction[1]

Visiting Team:

- Prof. Mircea NICOARĂ, The Polytechnic University of Timisoara – coordinator
- Prof. Gultekin GOLLER, Universitatea Tehnică Istanbul – internațional expert
- Ana Lavinia ILIE, Constanta Maritime University – student representative

The Doctoral School of Materials Science and Engineering (SD-SIM) Doctoral was established by the Decision of the UPB Senate, in May 2012. After completing the competition for the position of Director of the Doctoral School, in April 2012, the CSD (Doctoral School Council) was established as a governing body, consisting of the Director of the Doctoral School and specialists in the doctoral studies fileds, organized by UPB.

Initially, the number of PhD supervisors with PhD students under guidance was 31. Further, SD-SIM received 127 PhD students, in various stages of doctoral training under the guidance of the founding PhD supervisors. Currently, SD-SIM is based on the activity of 22 PhD supervisors (14 full-time and 8 retired), who coordinate 175 PhD students.

II. Methods used

As a part of evaluation process, online meetings were done with the panel members, PhD students, academic staff, ethics and quality commission and employers of the doctoral graduates. All meetings were very productive. All the questions asked were answered and the suggestions were received very positively. It can be said that graduated students are allocated in highly prestigious institutions. Based on the information given in the meetings and shared documents, it was understood that the laboratories of the doctoral school were very well equipped and suitable for scientific researchs. All ethical issue aiming to cntrol all unexpected situation probable as well.

[1] Each time when applicable the information shall be presented gender-wise.

Since I did not have the chance to visit the school, I cannot comment on the physical spaces of the school.

III. Analysis of ARACIS's performance indicators

Domain A. INSTITUTIONAL CAPACITY

Criterion A.1. The administrative, managerial institutional structures and the financial resources

Standard A.1.1. The institution organizing doctoral studies (IOSUD) has implemented the effective functioning mechanisms provided for in the specific legislation on the organization of doctoral studies.

Performance Indicator A.1.1.1. *The existence of specific regulations and their application at the level of the Doctoral School of the respective university doctoral study domain:*

(a) the internal regulations of the Doctoral School;

The institutional regulation for organizing and conducting doctoral studies in IOSUD- UPB was first adopted by the UPB Senate Decision of 2011, and then the new Regulation was approved corresponding to the legal regulations in force, which was adopted by the UPB Senate Decision no. 58/22.09.2020

(b) the Methodology for conducting elections for the position of director of the Council of doctoral school (CSD), as well as elections by the students of their representative in CSD and the evidence of their conduct;

By the Decision of the UPB Senate, all Doctoral Schools Directors, the CSUD Director and a representative of the students were part of the CSUD

c) the Methodologies for organizing and conducting doctoral studies (for the admission of doctoral students, for the completion of doctoral studies);

The CSUD Director Contest took place in 2020 for the 2020-2024 term.

d) the existence of mechanisms for recognizing the status of a Doctoral advisor and the equivalence of the doctoral degree obtained abroad;

At the level of IOSUD-UPB there are decisions of the UPB Rector that include the two procedures, respectively the recognition of the quality of PhD supervisors and the equivalence of the PhD title obtained in other states.

e) functional management structures (Council of the doctoral school), giving as well proof of the regularity of meetings;

CSUD meetings were held regularly, whenever it was necessary to debate and adopt important decisions. The CSD-SIM is convened in meetings according to the SD-SIM Regulation. The regularity of the meetings convening is proved by the minutes in which the decisions are recorded or in the exchange of e-mails between the CSD members on a topic of interest to SD-SIM. Given the pandemic situation, the new council conducts the working

meetings through the MS Teams platform.

f) the contract for doctoral studies;

The doctoral university contract is signed at the beginning of each academic year by the PhD students declared admitted.

g) internal procedures for the analysis and approval of proposals regarding the training for doctoral study programs based on advanced academic studies.

Within SD-SIM there are procedures dedicated to the analysis and approval of proposals on the topic of doctoral university programs.

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Anexa A.1.1.1_a_Regulament_IOSUD.pdf) and Anexa A.1.1.1_a_HS 58 UPB 2020-2021.pdf

- **https://upb.ro/wp-content/uploads/2020/03/Regulament-organizare-si-desfasurare-studii-universitare-de-doctorat.pdf**
- **Engineering" are posted on the website http://sdsim.upb.ro/wp-content/uploads/2021/04/Regulament_SD_SIM.pdf**

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

All regulations and relevant informations are given in the Annexes and websites.

Recommendations:

The indicator is fulfilled

Performance Indicator A.1.1.2. *The doctoral school' Regulation includes mandatory criteria, procedures and standards binding on the aspects specified in Article 17, paragraph (5) of the Government Decision No. 681/2011 on the approval of the Code of Doctoral Studies with subsequent amendments and additions.*

The criterion is met, included in the Regulation on the organization and development of University Doctoral Studies in the Doctoral School of Materials Science and Engineering at the University POLITEHNICA of Bucharest.

a) The acceptance of new PhD supervising members, as well as regulations regarding the way in which a PhD supervisor can be withdrawn as a member of the doctoral school Art. 3, paragraph 2;

Within IOSUD-UPB, the Senate decides, by vote, the acceptance of new doctoral supervising members in doctoral schools, based on the CSD approval, according to the SD-SIM Regulation, Art. 3, paragraph 2. The way in which a PhD supervisor can be withdrawn as a member of the doctoral school is regulated by Art. 3, paragraph 3, lit. a), b), c) of the SD-SIM Regulation.

b) the mechanisms by which decisions are taken regarding the opportunity, structure and content of the training program based on advanced university studies;

The aspects from point (b) are regulated in the SD-SIM Regulation, Art. 1 and Art. 12 - Doctoral university study programs

c) the procedures for changing the PhD supervisor of a certain PhD student and the procedures for mediating conflicts;

The procedures for changing the PhD supervisor of a certain PhD student are regulated by Art. 39, paragraph 8 and paragraph 10 - Changing the PhD

supervisor.
Conflict mediation procedures are regulated by Art. 39, paragraph (7).
d)the conditions under which the doctoral program may be interrupted; The doctoral program may be interrupted based on Art. 8.
e) ways to prevent fraud in scientific research, including plagiarism. The prevention and sanctioning of fraud in scientific research, including plagiarism, is done according to Art. 6, paragraph 6f and Art. 36, paragraph 10.
f) ensuring access to research resources
Ensuring the access of the PhD student to the research resources are regulated by Art. 38, paragraph 1 and paragraph 2 and Art. 42g).
g)the attendance obligations of PhD students
The attendance obligations of PhD students are regulated by Art. 12, Art. 13, paragraph 3, Art. 15, para. 1a and Art. 37, paragraph 3a.

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The indicator is fulfilled.

Standard A.1.2. The IOSUD has the logistical resources necessary to carry out the doctoral studies' mission.

Performance Indicator A.1.2.1. *The existence and effectiveness of an appropriate IT system to keep track of doctoral students and their academic background.*

The criterion is met. The efficient computer management system for students from the University Politehnica of Bucharest is available at the web address: http://studenti.pub.ro/. It implements the general functions regarding the acquisition and processing of information necessary for the management of the all students activities, from the University Politehnica of Bucharest (Bachelor
- Master - Doctorate - Postgraduate - Postdoctoral). The database contains all the information required in the "Unique Student Records" for each study cycle

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

http://studenti.pub.ro/.

- **Anexa A.1.2.1_Sistem management studenti.pdf)**

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

The efficient computer management system for students from the University Politehnica of Bucharest is available at the web address: http://studenti.pub.ro/. The database contains all the information required in the "Unique Student Records" for each study cycle (see Anexa A.1.2.1_Sistem management studenti.pdf).

Recommendations:

The indicator is fulfilled.

Performance Indicator A.1.2.2. *The existence and use of an appropriate software program and evidence of its use to verify the percentage of similarity in all doctoral theses.*

The criterion is met, as within the University Politehnica of Bucharest, all PhD supervisors have individual accounts on the TurnitIn platform received from CSUD, through the Doctoral Schools of the University. Students also have access to TurnitIn through PhD supervisors. TurnitIn provides instructors with the neccessary tools in order to interact with students in the process of writing, feedback, and evaluation of submitted documents.

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Anexa A.1.2.2_Existenta si utilizarea unui program informatic.pdf). Anexa A.1.2.2_Existenta si utilizarea unui program_Similitudine.pdf Anexa A.1.2.2_Raport_Similitudine_Constantin_Ionut. Pdf.

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Evidence of the use of Turnitin program, since implementation, is presented in Anexa A.1.2.2_Existenta si utilizarea unui program_Similitudine.pdf and in Anexa A.1.2.2_Raport_Similitudine_Constantin_Ionut. Pdf.

Recommendations:

The indicator is fulfilled.

Standard A.1.3. The IOSUD makes sure that financial resources are used optimally, and the revenues obtained from doctoral studies are supplemented through additional funding besides governmental funding.

Performance Indicator A.1.3.1. *Existence of at least one research or institutional / human resources development grant under implementation at the time of submission of the internal evaluation file, per doctoral study domain under evaluation, or existence of at least 2 research or institutional development / human resources grant for the doctoral study domain, obtained by doctoral thesis advisors operating in the evaluated domain within the past 5 years. The grants address relevant themes for the respective domain and, as a rule, are engaging doctoral students.*

The criterion is met.The PhD supervisors in the field of Materials Engineering won in the 2016- 2020 period at least 9 grants as project director or person responsible from UPB, of which 4 are ongoing

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Anexa A.1.3.1_Granturi de cercetare CD.pdf.

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Related information given in the table in the Annex.

Recommendations:

The indicator is fulfilled.

Performance Indicator *A.1.3.2. *The percentage of doctoral students active at the time of the evaluation, who for at least six months receive additional funding sources besides government funding, through scholarships awarded by individual persons or by legal entities, or who are financially supported through research or institutional / human resources development grants is not less than 20%.*

The criterion is met because a number of 39 PhD students, representing 22.28% of a total of 175 PhD students who have not yet defended their thesis, have benefited/ benefit from an additional financial support of at least 6 months from research contracts

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Anexa A.1.3.2_Doctoranzi cu finatare suplimentara.pdf

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Related information given in the table in the Annex.

Recommendations:

The indicator is fulfilled.

Performance Indicator *A.1.3.3.[2] *At least 10% of the total amount of doctoral grants obtained by the university through institutional contracts and of tuition fees collected from the doctoral students enrolled in the paid tuition system is used to reimburse professional training expenses of doctoral students (attending conferences, summer schools, training, programs abroad, publication of specialty papers or other specific forms of dissemination etc.).*

IOSUD co-financed 2% of the value of POCU, POSDRU, GEX projects in the period 2016-2020. Also, conference participation fees were paid for doctoral students, but the value of the share of the total doctoral grants cannot be specified.

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The indicator is fulfilled.

A specific budget should be allocated to be spent within the scope of research part of the doctoral studies and these expenses should be recorded.

Criterion A.2. Research infrastructure

Standard A.2.1. The IOSUD has a modern research infrastructure to support the conduct of doctoral studies' specific activities.

The SIM Doctoral School has a number of 19 modern laboratories dedicated to the doctoral studies such as electron microscopy laboratory,

optical microscop laboratory, electrochemistry laboratory, non-ferrous metallurgy laboratory. It was stated that the surface of office spaces for the entire scientific research staff within the PhD activities increased by over 60% during 2016- 2020.

Performance Indicator A.2.1.1. *The venues and the material equipment available to the doctoral school enable the research activities in the evaluated domain to be carried out, in line with the assumed mission and objectives (computers, specific software, equipment, laboratory equipment, library, access to international databases etc.). The research infrastructure and the provision of research services are presented to the public through a specific platform. The research infrastructure described above, which was purchased and developed within the past 5 years will be presented distinctly.*

Teachers and PhD students in the field of Materials Engineering in SD-SIM benefit from a well- developed research infrastructure, available in the research laboratories affiliated to the SIM Faculty such as electron microscopy laboratotory, optical microscop laboratory, mechanical testing laboratory etc. Among the PhD supervisors who used the resources from the research contracts to equip the laboratories, in the last 5 years, are also Prof.dr.eng. Antoniac Iulian, Prof.dr.eng. Csaki Ioana, Prof.dr.eng. Miculescu Florin, Prof.dr.eng. Predescu Cristian, Prof.dr.eng. Ripoșan Iulian etc.

Also, PhD students have access to the existing literature in the Central Library of UPB and in the libraries of all faculties, and through the ANELIS program to international databases, such as Scopus, Web of Science, or journals within Elsevier publishing house.

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

-Anexa A.2.1.1_Dovezi privind deținere laboratoare.pdf

-Anexa C.2.2.1_Contract ANELIS.pdf

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

The list of the few representative laboratories in which many PhD supervisors from SD- SIM work is presented in Anexa A.2.1.1_Dovezi privind deținere laboratoare.pdf.

Recommendations:

The indicator is fulfilled.

[2] The indicators marked with an asterisk (*) hold a special status, referring exclusively to the evaluation of doctoral studies domains, as per Article 12 from the annex No.1 of the Order of the minister of education No. 3651/12.04.2021 approving the Methodology for evaluating university doctoral studies and the system of criteria, standards and performance indicators used in the evaluation. In case they are not met, the Agency extends a period of maximum 3 years to IOSUD to correct the respective deficiencies.

Criterion A.3. Quality of Human Resources

**general description of the criterion analysis.*

Standard A.3.1. At the level of each domain there are sufficient qualified staff to ensure the conduct of doctoral study program.

SD-SIM comprises 22 PhD supervisors in the field of Materials Engineering, of which:

- **14 PhD supervisors are tenured professors, of which 11 are under 65 years old;**
- **8 PhD supervisors are retired professors.**

The SD-SIM currently includes 175 PhD students in the field of Materials Engineering, of which 135 are enrolled in the 3-year study program and 40 in the extension of the doctoral program.

Performance Indicator A.3.1.1. *Minimum three doctoral thesis advisors within that doctoral domain, and at least 50% of them (but no less than three) meet the minimum standards of the National Council for Attestation of University Degrees, Diplomas and Certificates (CNATDCU) in force at the time when the evaluation is carried out, which standards are required and mandatory for obtaining the enabling certification.*

The criterion is met because on 10.12.2020, 22 PhD supervisors carries out their activity in the Materials Engineering doctoral field, out of which a number of 16 (72.7%) meet the minimum CNATDCU standards in force, necessary to obtain the habilitation certificate

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Anexa A.3.1.1_a_Indeplinire criterii minimale CD.pdf

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Related information given in the table in the Annex.

Recommendations:

The indicator is fulfilled.

Performance Indicator *A.3.1.2. *At least 50% of all doctoral advisors have a full-time employment contract for an indefinite period with the IOSUD.*

The criterion is met because 14 of the 22 (63.6%) PhD supervisors in the field of Materials Engineering are tenured professors (10.12.2020).

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Anexa A.3.1.2_Titulari in IOSUD.pdf)

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Related information given in the table in the Annex.

Recommendations:

The indicator is fulfilled.

Performance Indicator A.3.1.3. *The study subjects in the education program based on advanced higher education studies pertaining to the doctoral domain are taught by teaching staff or researchers who are doctoral thesis advisors / certified doctoral thesis advisors, professors / CS I or lecturer / CS II, with proved expertise in the field of the study subjects they teach, or other specialists in the field who meet the standards established by the institution in relation with the aforementioned teaching and research functions, as provided by the law.*

The tenured professors for the disciplines in the training program based on advanced university studies (PPA) meet all the necessary conditions, being CSI or associate professor/ CS II with proven expertise in the field of taught subjects or other specialists in the field who meet the standards set by the institution for teaching and research mentioned above, in accordance with the law. All teachers have proven expertise and experience in the field.

Currently, out of all the subjects related to the training program based on advanced university studies - PPA (37), for all of them, the teaching activities are delivered by teachers/ researchers as lecturers or professors, in compliance with the legislation in force

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

-Anexa A.3.1.3_Proportie conferentiari si profesori.pdf

-Anexa A.3.1.3_a_PPA.pdf).

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Related information given in the table in the Annex.

Recommendations:

The indicator is fulfilled.

Performance Indicator *A.3.1.4. *The percentage of doctoral thesis advisors who concomitantly coordinate more than 8 doctoral students, but no more than 12, who are themselves studying in doctoral programs[3] does not exceed 20%.*

Currently, out of the 22 PhD supervisors affiliated to the Materials Engineering field in SD-SIM, 4 PhD supervisors coordinate between 8 and 12 PhD students (18.1%), the other 18 PhD supervisors (81.9%) coordinate a maximum of 8 PhD students.

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

-Anexa A.3.1.4_Pondere CD in functie de nr studenti.pdf

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Related information given in the table in the Annex.

Recommendations:

The indicator is fulfilled.

Standard A.3.2. The Doctoral advisors within the domain are carrying out a scientific activity visible at international level.

Performance Indicator A.3.2.1. *At least 50% of the doctoral thesis advisors in the evaluated domain have at least 5 Web of Science- or ERIH-indexed publications in magazines of impact, or other achievements of relevant significance for that domain, including international-level contributions that indicate progress in scientific research - development - innovation for the evaluated domain. The aforementioned doctoral thesis advisors enjoy international awareness within the past five years, consisting of: membership on scientific boards of international publications and conferences; membership on boards of international professional associations; guests in conferences or expert groups working abroad, or membership on doctoral defense commissions at universities abroad or co-leading with universities abroad. For Arts and Sports and Physical Education Sciences, doctoral thesis advisors shall prove their international visibility within the past five years by their membership on the boards of professional associations, membership in organizing committees of arts events and international competitions, membership on juries or umpire teams in artistic events or international competitions.*

All PhD supervisors affiliated to the field of Materials Engineering (100%) present at least 5 Web of Science (ISI) indexed publications with impact factor, and some of them (13) have international visibility, being members of the editorial boards of foreign journals or in the scientific and organizing committees of international scientific events.

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Anexa A.3.2.1_Articole semnificative CD si vizibilitate internationala.pdf

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Related information given in the table in the Annex.

Recommendations:

The indicator is fulfilled.

Performance Indicator *A.3.2.2. *At least 50% of the doctoral thesis advisors in a specific doctoral study domain continue to be active in their scientific field, and acquire at least 25% of the score requested by the minimal CNATDCU standards in force at the time of the evaluation, which are required and mandatory for acquiring their enabling certificate, based on their scientific results within the past five years.*

The criterion is met because out of the 22 PhD supervisors in the field of Materials Engineering, a number of 14 (63.6%) met in the 2016-2020 period, at least 25% of the value of the minimum CNATDCU criteria.

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

-Anexa A.3.2.2_CD activi in ultimii 5 ani.pdf

[3] 3 years for the doctoral university studies with the duration stipulated at Article 159, paragraph (3), respectively 4 years for the doctoral university studies with the duration stipulated at Article 174, paragraph (3) of the Law of national education No.1/2011 with subsequent amendments and additions, with additional extension periods approved as per Article 39, paragraph (3) of the Code of doctoral studies approved by the GD No. 681/2011 with subsequent amendments and additions.

- **-Anexa A.3.2.2_a_Dovada CD activi in ultimii 5 ani**

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Related information given in the tables in the Annexes.

Recommendations:

The indicator is fulfilled.

Domain B. EDUCATIONAL EFFECTIVENESS

Criterion B.1. The number, quality and diversity of candidates enrolled for the admission contest

Standard B.1.1. The institution organizing doctoral studies has the capacity to attract candidates from outside the higher education institution or a number of candidates exceeding the number of seats available.

Performance Indicator *B.1.1.1. *The ratio between the number of graduates of masters' programs of other higher education institutions, national or foreign, who have enrolled for the doctoral admission contest within the past five years and the number of seats funded by the state budget, put out through contest within the doctoral domain is at least 0.2 or the ratio between the number of candidates within the past five years and the number of seats funded by the state budget put out through contest within the doctoral studies domain is at least 1,2.*

The criterion is met, because the respective ratio for the field of Materials Engineering in SD-SIM has the value of 0.205

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

-Anexa B.1.1.1_Doctoranzi atrasi din afara UPB.pdf

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Related information given in the table in the Annexe.

Recommendations:

The indicator is fulfilled.

Standard B.1.2 Candidates admitted to doctoral studies demonstrate academic, research and professional performance.

Performance Indicator *B.1.2.1. *Admission to doctoral study programs is based on selection criteria including: previous academic, research and professional performance, their interest for scientific or arts/sports research, publications in the domain and a proposal for a research subject. Interviewing the candidate is compulsory, as part of the admission procedure.*

Every year, at the proposal of CSUD, the UPB Senate approves the

Methodology for admission to doctoral university studies at least 6 months before the date of the admission competition.

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

-Anexa B.1.2.1_Rata de renunțare la 2 ani.pdf

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Related information given in the table in the Annexe.

Recommendations:

The indicator is fulfilled.

Performance Indicator B.1.2.2. *The expelling rate, including renouncement / dropping out of doctoral students 3, respectively 4, years after admission[4] does not exceed 30%.*

The criterion is met because in the last 5 years, only 3 PhD students dropped out of their studies in the first two years. Thus, the abbandon/ dropout rate for PhD students in the field of Materials Engineering, two years after admission, in the 2016-2020 period is 1.89%

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

-Anexa B.1.2.1_Rata de renunțare la 2 ani.pdf

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Related information given in the table in the Annexe.

Recommendations:

The indicator is fulfilled.

Criterion B.2. The content of doctoral programs

Standard B.2.1. The training program based on advanced university studies is appropriate to improve doctoral students' research skills and to strengthen ethical behavior in science.

Performance Indicator B.2.1.1. *The training program based on advanced academic studies includes at least 3 disciplines relevant to the scientific research training of doctoral students; at least one of these disciplines is intended to study in-depth the research methodology and/or the statistical data processing.* **The training program based on advanced university studies in IOSUD-UPB includes 5 compulsory disciplines, of which 2 are specialized disciplines, established by the PhD supervisor and 3 are disciplines that provide transversal competencies, which were approved by the Rector's Decision no.41/30.10.2018, at the proposal of CSUD.**

[4] 3 years for the doctoral university studies with the duration stipulated at Article 159, paragraph (3), respectively 4 years for the doctoral university studies with the duration stipulated at Article 174, paragraph (3) of the Law of national education No. 1/2011 with subsequent amendments and additions.

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

-Anexa B.2.1.1_a_HR_Discipline obligatorii.pdf

-Anexa B.2.1.1_b_Stat functiuni Discipline obligatorii.pdf

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

In Anexa B.2.1.1_a_HR_Discipline obligatorii.pdf decision is presented, and Anexa B.2.1.1_b_Stat functiuni Discipline obligatorii.pdf comprises the list of positions, at CSUD level, which certifies the programming of the disciplines.

Recommendations:

The indicator is fulfilled.

Performance Indicator B.2.1.2. *At least one discipline is dedicated to Ethics and Intellectual Property in scientific research or there are well-defined topics on these subjects within a discipline taught in the doctoral program.*

The Ethics discipline is provided in the training program based on advanced university studies as a compulsory discipline for all PhD students in the first year.

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

-Anexa B.2.1.2_Fisa disciplinei Etica.pdf.

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Discipline sheet is attached in Anexa B.2.1.2_Fisa disciplinei Etica.pdf.

Recommendations:

The indicator is fulfilled.

Performance Indicator B.2.1.3. *The IOSUD has mechanisms to ensure that the academic training program based on advanced university studies addresses „the learning outcomes", specifying the knowledge, skills, responsibility and autonomy that doctoral students should acquire after completing each discipline or through the research activities[5].*

The subject sheets for the compulsory disciplines in the plan corresponding to the training program based on advanced university studies, namely: Project Management and Research Methodology and Scientific Authorship.

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

-Anexa B.2.1.3_Fisa discipline Management si Metodologie.pdf.

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Project Management and Research Methodology and Scientific Authorship are presented in Anexa B.2.1.3_Fisa discipline Management si Metodologie.pdf.

Recommendations:

The indicator is fulfilled.

Performance Indicator B.2.1.4. *All along the duration of the doctoral training, doctoral students in the domain receive counselling/guidance from functional guidance commissions, which is reflected in written guidance and feedback or regular meeting.*

PhD students in the field of Materials Engineering from SD-SIM benefit from the support of the counseling committee throughout the doctoral internship. The criterion is met because at least 50% of the PhD students who defended their thesis in the 2016-2020 period (33) had a scientific contribution (article, patent, poster or conference presentation) together with at least one member of the counseling committee.

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

-Anexa B.2.1.4_Doctoranzi cu comisii de indrumare functionale.pdf.

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Related information given in the table in the Annexe.

Recommendations:

The indicator is fulfilled.

Performance Indicator B.2.1.5*. For a doctoral study domain, the ratio between the number of doctoral students and the number of teaching staff/researchers providing doctoral guidance must not exceed 3:1.* **The criterion is met, as in the field of Materials Engineering from SD-SIM, a total of 61 PhD supervisors (22 supervisors and 39 counselors) coordinate 175 PhD students, the ratio being equal to 2.86/1.**

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

-Anexa B.2.1.5_Indrumatori de doctorat.pdf.

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Related information given in the table in the Annexe.

Recommendations:

The indicator is fulfilled.

Criterion B.3. The results of doctoral studies and procedures for their evaluation.

Standard B.3.1. Doctoral students capitalize on the research through presentations at scientific conferences, scientific publications, technological transfer, patents, products and service orders.

[5] Or by what the graduate should know, understand and to be able to do, according to the provisions of the Methodology of 17 March 2017 regarding inscription and registration of higher education qualifications in the National Register of Qualifications in Higher Education (RNCIS) approved by the Order No.3475/2017 with subsequent amendments and additions.

The research activity of PhD students and PhD supervisors materialized into very good results, scientific patents, chapters in books published by international publishers and scientific articles published in journals indexed in international databases and in journals ranked Web of Science with impact factor. In last 5 years, The PhD students and supervisors published 5 chapters in international books, 8 scientific patents, 56 scientific articles in WOS Q1 category journals, 87 articles in WOS Q2 category journals and 147 articles in WOS Q3 and Q4 category journals.

Performance Indicator B.3.1.1. *For the evaluated domain, the evaluation commission will be provided with at least one paper or some other relevant contribution per doctoral student who has obtained a doctor's title within the past 5 years. From this list, the members of the evaluation commission shall randomly select 5 such papers / relevant contributions per doctoral study domain for review. At least 3 selected papers must contain significant original contributions in the respective domain.*

The criterion is met because all doctoral student published at least 1 paper.

1. Simona Cavalu, Iulian Vasile Antoniac, Luminita Fritea, Ileana Mariana MATEȘ, Claudia Milea,Vasile Laslo, Simona Vicas & Aurel Mohan - SURFACE MODIFICATIONS OF THE TITANIUM MESH FOR CRANIOPLASTY USING SELENIUM NANOPARTICLES COATING, Journal of Adhesion Science and Technology, 2018, WOS:000455235400008, FI – 1.31
   3/5.
2. Iulian Vasile Antoniac , Dan Gheorghe , Ion Pencea *, Ramona Nicoleta Turcu, Complex Characterization of a New 8Ag24Pd11Cu2Au2Zn1. 5In1.5Sn Dental Alloy, 2019, Manuscript ID: materials-642912, Materials, WOS:000507308200177, FI – 3.057 Q2
   4/5.
3. IULIAN ANTONIAC , ALEXANDRU CERNEA , CRISTIAN PETCU , DAN LAPTOIU, DIANA TABARAS, CAMELIA TECU, AURORA ANTONIAC , SEBASTIAN GRADINARU, Synthesis and Characterization of Coated Iron Oxide Nanoparticles Produced for Drug Delivery in Viscoelastic Solution, Revista de Chimie , FI – 1.755
   4/5.
4. V. Soare, M. Burada, I. Constantin, D. Mitrică, V. Bădiliţă, A. Caragea, M. Târcolea, "Electrochemical deposition and microstructural characterization of AlCrFeMnNi and AlCrCuFeMnNi high entropy alloy thin films, Applied Surface Science, vol. 358 (2015), 533– 539,WOS:000366220500005,FI – 6.182, Q1
   4/5.
5. F. Miculescu, A. Maidaniuc, S.I. Voicu, V. K. Thakur, G.E. Stan, L.T. Ciocan, Progress in Hydroxyapatite–Starch Based Sustainable Biomaterials for Biomedical Bone Substitution Applications. ACS Sustainable Chemistry & Engineering, Volume 5, Issue 10, 2017, Pages 8491-8512, WOS:000412382700002, FI – 7.632, Q1
   4/5.

All selected articles were published in high impact factor journals. It should be said that all articles will make significant contributions to the relevant literature.

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

-Anexa B.3.1.1_Articole doctoranzi finalizati.pdf.

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Neccessary information is presented in the table from Anexa B.3.1.1_Articole doctoranzi finalizati.pdf.

Recommendations:

The indicator is fulfilled.

Performance Indicator *B.3.1.2. *The ratio between the number of presentations of doctoral students who completed their doctoral studies within the evaluated period (past 5 years), including posters, exhibitions made at prestigious international events (organized in the country or abroad) and the number of doctoral students who have completed their doctoral studies within the evaluated period (past 5 years) is at least 1.*

The criterion is met because, for 33 PhD theses defended in the 2016-2020 period, 99 participations at international conferences and symposia, with papers of the PhD students, are reported (ratio equals 3).

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

-Anexa B.3.1.2_Prezentari ale doctoranzilor.pdf.

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Related information given in the table in the Annexe.

Recommendations:

The indicator is fulfilled.

Standard B.3.2. The Doctoral School engages a significant number of external scientific specialists in the commissions for public defense of doctoral theses in the analyzed domain.

Performance Indicator *B.3.2.1. *The number of doctoral theses allocated to one specialist coming from a higher education institution, other than the evaluated IOSUD should not exceed two (2) in a year for the theses coordinated by the same doctoral thesis advisor.*

This criterion is met, because in the mentioned period there was no external referent who evaluated, in a year, more than two PhD theses coordinated by the same PhD supervisor.

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

-Anexa B.3.2.1_Numarul de teze de doctorat alocate unui anumit referent.pdf.

- analysis of the facts, the findings from the assessed institution's documents

and the evaluation visit itself

Related information given in the table in the Annexe.

Recommendations:

The indicator is fulfilled.

Performance Indicator *B.3.2.2. *The ratio between the doctoral theses allocated to one scientific specialist coming from a higher education institution, other than the institution where the defense on the doctoral thesis is organized, and the number of doctoral theses presented in the same doctoral study domain in the doctoral school should not exceed 0.3, considering the past five years. Only those doctoral study domains in which minimum ten doctoral theses have been presented within the past five years should be analyzed.*

The criterion is met because no referent who reached or exceeded the imposed limit (0.3 of the 33 theses defended), exists. The highest number of thesis evaluations in the field of Materials Engineering in the 2016-2020 period belongs to the referents Rodica Mariana Ion and Corneliu Munteanu, who analyzed 8 theses each, a number significantly lower than the maximum limit imposed by this criterion. The ratio value in this case equals 0.24.

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

-Anexa B.3.2.2_Raportul tezelor alocate unui anumit referent.pdf

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Related information given in the table in the Annexe.

Recommendations:

The indicator is fulfilled.

Domain C. QUALITY MANAGEMENT

**general description of domain analysis.*

Criterion C.1. Existence and periodic implementation of the internal quality assurance system

Standard C.1.1. There are an institutional framework and procedures in place and relevant internal quality assurance policies, applied for monitoring the internal quality assurance.

Performance Indicator C.1.1.1. *The Doctoral school in the respective university study domain shall demonstrate the continuous development of the evaluation process and its internal quality assurance following a procedure developed and applied at the level of the IOSUD, the following assessed criteria being mandatory:*

(a) the scientific work of Doctoral advisors;

(b) the infrastructure and logistics necessary to carry out the research activity;

(c) the procedures and subsequent rules based on which doctoral studies are organized;

d) the scientific activity of doctoral students;

e) the training program based on advanced academic studies of doctoral students;

f) social and academic services (including for participation at different events, publishing papers etc.) and counselling made available to doctoral students.

SD-SIM uses, in order to evaluate and monitor internally the evolution of (a) the scientific activity of PhD supervisors, the results of the self-evaluation process, peer and student evaluation of PhD supervisors, developed and applied in the Faculty of Materials Science and Engineering, by collaborating with the management structures of the Faculty, respectively, of each of the three component departments.

The evaluated components include: a) the scientific activity of the PhD supervisors; b) the infrastructure and logistics necessary for carrying out the research activity; c) the procedures and subsequent norms on the basis of which the doctoral studies are organized; d) the scientific activity of PhD students; e) the training program based on advanced university studies of PhD students.

Within SD-SIM, by the CSD decision no.1/16.12.2020, Prof.dr.eng. Iulian Ripoșan was appointed responsible for quality assurance. Prof.dr.eng. Cristian Predescu and Prof.dr.eng. Mihai Cojocaru are also part of the quality committe. By another decision, no. 3/16.12.2020, the team of auditors of SD-SIM was established, to participate in the cross-audit process of IOSUD-UPB. The team consists of Prof.dr.eng. Florin Miculescu (chief auditor), Prof.dr.eng. Constantin Stelian Stan.

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

-Anexa C.1.1.1_Calitate.pdf

-Anexa C.1.1.1_Etica.pdf

-Anexa C.1.1.1_Audit.pdf

- „Procedura operațională de evaluare și monitorizare internă a evoluției școlilor doctorale PO-SC-10-27

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Related information and precodeures given in Annexes.

Recommendations:

The indicator is fulfilled.

Performance Indicator *C.1.1.2. *Mechanisms are implemented during the stage of the doctoral study program to enable feedback from doctoral students allowing to identify their needs, as well as their overall level of satisfaction with the doctoral study program in order to ensure continuous improvement of the academic and administrative processes. Following the analysis of the results, there is evidence that an action plan was drafted and implemented.*

The criterion is met, as in the Operational Procedure for evaluation and internal monitoring of the evolution of doctoral schools PO-SC-10-27, provisions are stipulated regarding feedback actions from PhD students.

In order to implement feedback mechanisms from PhD students to identify their

needs, as well as their level of satisfaction with the doctoral program, in order to continuously improve academic and administrative services, PhD students complete anonymous questionnaires, in which they can also express personal opinions regarding the doctoral training activity.

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

-Anexa C.1.1.2_Chestionar satisfactie PCS.pdf

-Anexa C.1.1.2_Chestionar satisfactie PPA.pdf

-Anexa C.1.1.2_Procedura evaluare satisfactie.pdf

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Examples of questionnaires are presented in the Annexes.

Recommendations:

The indicator is fulfilled.

Criterion C.2. Transparency of information and accessibility of learning resources

Standard C.2.1. Information of interest to doctoral students, future candidates and public interest information is available for electronic format consultation.

Performance Indicator C.2.1.1. *The IOSUD publishes on the website of the organizing institution, in compliance with the general regulations on data protection, information such as:*

(a) the Doctoral School regulation;

(b) the admission regulation;

(c) the doctoral studies contract;

(d) the study completion regulation including the procedure for the public presentation of the thesis

(e) the content of training program based on advanced academic studies

(f) the academic and scientific profile, thematic areas/research themes of the Doctoral advisors within the domain, as well as their institutional contact data

(g) the list of doctoral students within the domain with necessary information (year of registration; advisor);

(h) information on the standards for developing the doctoral thesis;

(i) links to the doctoral theses' summaries to be publicly presented and the date, time, place where they will be presented; this information will be communicated at least twenty days before the presentation.

The criterion is met. The documents are as follows on the SD-SIM website http://sim.pub.ro/

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

-http://sim.pub.ro/

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Related documents are present in the *http://sim.pub.ro/* website.

Recommendations:

The indicator is fulfilled.

Standard C.2.2. The IOSUD/The Doctoral School provides doctoral students with access to the resources needed for conducting doctoral studies.

Performance Indicator C.2.2.1. *All doctoral students have free access to one platform providing academic databases relevant to the doctoral studies domain of their thesis.*

The PhD students from SD-SIM have free access, through the ANELIS PLUS 2020 program, to a platform with relevant academic databases for the field of Materials Engineering, based on the IP of the computer through which the connection is made, which must belong to UPB. Among other things, PhD students have access to the SCOPUS and Web of Science databases and also to the journals of Elsevier, which has numerous publications in the field of Materials Engineering.

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

-Anexa C.2.2.1_Contract ANELIS.pdf

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

In Anexa C.2.2.1_Contract ANELIS.pdf a copy of the contract for the access provision between ANELIS PLUS and UPB is presented.

Recommendations:

The indicator is fulfilled.

Performance Indicator C.2.2.2. *Each doctoral student shall have access, upon request, to an electronic system for verifying the degree of similarity with other existing scientific or artistic works.*

IOSUD ensured the access of PhD supervisors from SD-SIM to the anti-plagiarism software Turnitin, by providing a username, respectively a password. The PhD students of each PhD supervisor have access, upon request, through the PhD supervisor, to this program. The PhD supervisor

discusses, with each PhD student he/ she coordinates, the results provided by the similarity analysis software and the reasons why those similarities were reported.

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

-Anexa A.1.2.2_Existenta si utilizarea unui program informatic.pdf

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Details about using of Turnitin program given in the Annex.

Recommendations:

The indicator is fulfilled.

Performance Indicator C.2.2.3. *All doctoral students have access to scientific research laboratories or other facilities depending on the specific domain/domains within the Doctoral School, according to internal order procedures.*

All PhD students from SD-SIM have access to the scientific research laboratories or to the laboratories with computer technology within SD and of the SIM Faculty, according to a work schedule established together with the PhD supervisor. Experimental research and/ or computational applications are supervised by the PhD supervisor.

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The indicator is fulfilled.

Criterion C.3. Internationalization

Standard C.3.1. There is a strategy in place and it is applied to enhance the internationalization of doctoral studies.

Performance Indicator *C.3.1.1. *IOSUD, for every evaluated domain, has concluded mobility agreements with universities abroad, with research institutes, with companies working in the field of study, aimed at the mobility of doctoral students and academic staff (e.g., ERASMUS agreements for the doctoral studies). At least 35% of the doctoral students have completed a training course abroad or other mobility forms such as attending international scientific conferences. IOSUD drafts and applies policies and measures aiming at increasing the number of doctoral students participating at mobility periods abroad, up to at least 20%, which is the target at the level of the European Higher Education Area.*

The criterion is met, as during the evaluated period there were 4 trips through the ERASMUS program, 4 participations in summer schools abroad and 98 participations in international conferences. Thus, taking into account the total number of PhD students within SD-SIM (175) and the total number of training courses abroad or in another form of mobility, such as participation in

international scientific conferences (106), a percentage of 60.5% results. Also, for IOSUD-UPB PhD students, ERASMUS agreements were concluded which included two types of mobility: study mobility and, respectively, placement type mobility.

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

-Anexa C.3.1.1_Mobilitati doctoranzi.pdf.

- Anexa C.3.1.1_a_Acord ERASMUS.pdf.

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Information about the conference participating given in the *Anexa C.3.1.1_Mobilitati doctoranzi.pdf.*

A example of Erasmus agreement given in the *Anexa C.3.1.1_a_Acord ERASMUS.pdf.*

Recommendations:

The indicator is fulfilled.

Performance Indicator C.3.1.2. *In the evaluated doctoral study domain, support is granted, including financial support, to the organization of doctoral studies in international co-tutelage or invitation of leading experts to deliver courses/lectures for doctoral students.*

The criterion is met because in the 2016-2020 period a joint doctorate was continued between UPB through Prof. Dionezie Bojin and Davis University of California from the USA through Prof.Dr.Ing. Ruxandra Vidu and the co-supervision agreement between the two universities.

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

- Anexa C.3.1.2_Cotutela si invitati straini.pdf

- Anexa C.3.1.2_a_Acord cotutela.pdf

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Co-supervision agreement between the universities and the examples of the this studies given in the Annexes.

Recommendations:

The indicator is fulfilled.

Performance Indicator C.3.1.3. *The internationalization of activities carried out during the doctoral studies is supported by IOSUD through concrete measures (e.g., by participating in educational fairs to attract international doctoral students; by including international experts in guidance committees or doctoral committees etc.).*

During the analyzed period, IOSUD participated in several international fairs to attract international doctoral students. In the 2016-2020 period, at two of the doctoral commissions supported in the field of Materials Engineering, at SD-SIM, participated also referents from abroad (Assoc. Prof. Dr. Lidia Favier from the Ecole Nationale Supérieure de Chimie de Rennes, France). Also, IOSUD-UPB participated in the 2016-2020 period at numerous educational fairs to

attract international PhD students.
On December 1, 2020, a number of 4 foreign students are PhD students at SD-SIM, according to the table in the present report.

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

- Anexa C.3.1.4_b_Targuri educationale.pdf

- Anexa C.3.1.4_a_Membri straini in comisii.pdf

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Related informations given in the Annexes.

Recommendations:

The indicator is fulfilled.

The number of doctoral students coming from abroad should be increased. For this purpose, the visibility of the doctoral program should be increased by increasing the conference participating, article publishing and bilateral cooperation with national and internatioal scale.

IV.SWOT Analysis

STRENGHT:	WEAKNESSES:
• Quality human resources as a scientific level and experience • Good and diversified research infrastructure • Good visibility in terms of scientific production and participation in international bodies • Large number of collaborations with institutions in the country and abroad.	• Degree of internationalization below potential in terms of attracting foreign students • Low proportion of mobility through long-term traineeships to prestigious scientific institutions abroad in the field of materials • Reduced number of courses / lectures given by foreign experts
OPPORTUNITIES:	**THREATS:**
• The existence of a favorable socio-economic environment in the vicinity • Possibilities to diversify collaborations in the field of applied research in the field of advanced materials used in defense, medicine, automotive, batteries, etc.	• Lack of predictability of additional funding compared to that provided by the government. • Difficulties in attracting students to doctoral programs caused by demographic decline and the relatively low number of students in bachelor's / doctoral programs.

V.Overview of judgments awarded and of the recommendations

No.	Type of indicator (*, C)	Performance indicator	Judgment	Recommendations
		B.1.1.1		Realization of a program of measures for the extension of the geographical area of recruitment of doctoral students from abroad
		B.3.1.1		Preparation of a plan of measures to increase the share of mobility through internships of at least 1 month at prestigious scientific institutions abroad in the field of materials (EC, USA, Switzerland, Japan, South Korea, China, etc.)
		C.1.1.2.		• Preparation of an annual report by the Director or the SD-SIM Board summarizing the data resulting from the application of quality assurance measures, including those resulting from the application of the questionnaires related to the Advanced Training Program (PPA) and the Scientific Research Program (PCS) Mention in Annex C.1.1.2_Procedure for the satisfactory evaluation of the specific elements of the evaluation at doctoral school level and of the specific questionnaires for PPA and PCS, possibly their standardization at

				IOSUD-UPB level
		C.3.1.1.		Preparation of a plan of measures to increase the share of mobility through internships of at least 1 month at prestigious scientific institutions abroad in the field of materials (EC, USA, Switzerland, Japan, South Korea, China, etc.)
		C.3.1.2.		Carrying out a program to increase the number of courses / lectures given by foreign experts in the field of materials science and engineering or related topics.
		C.3.1.3.		Carrying out a plan of measures to increase internationalization by increasing the number of foreign students and diversifying the geographical areas from which they come.

VI. Conclusions and general recommendations

Self assesment report has been prepared in detailed and provides the opportunity to answer all possible questions. As a part of evaluation process, online meetings were done with the panel members, PhD students, academic staff, ethics and quality commission and employers of the doctoral graduates. All meetings were very productive. All the questions asked were answered and the suggestions were received very positively.

My observations and recommodations during the evaluation of self study report and meeting with different shareholder of the material science doctoral program of the UPB are listed below:

1. *Based on the information given in the meetings and shared documents, it was understood that the laboratories of the doctoral school are very well equipped and suitable for scientific researchs.*
2. *Ethical issues aiming to control all unexpected situation probable as well.*
3. *It is observed that many of the graduates from PhD level are being allocated with very prestigious organizations in Romania.*

4. *It seems like there is no spesific budget allocated for the research related with the each doctoral study. It would be very useful to introduce a budget for this purpose. It is very helpful to give budget for the thesis advisors at least purchasing starting powders, metallographic specimen preparation consumables and etc. For example 4000 euro per thesis can be a great benefit for the thesis advisors in order to get rid of the difficulties they might face.*
5. *Basically I observed that maintaining the experimental and the characterization studies and finalization of a doctoral study mainly based on the personal effort of the thesis advisors and their personal relations since there is no specific budget to spend for this purpose. Although this is a very good aspect, it can be very effective to apply official principle on this issue.*
6. *Another important issue, there should be a mechanism to promote the researchers to publish article. For this purpose, both PhD students and thesis advisors shoul be encourage by an award mechanism. This mechanism is based on the give money to thesis advisors and students according to their publishing number end of the each year. This award can be given by two ways: national scientific research council and UPB research funds.*
7. *Establishing links between natioanal and international institutions would be very helpful for PhD candidate to improve their skills and experiences.*
8. *As a final point, I noticed that there are not many foreign students and all of these students have comen from Middle East countries. I think there should be more doctoral students and it should be reached a level where students from European countries would like to come for the research activity in Romania. To achieve this, visibility of the university should be enhanced. In order to be center of attraction for inernational students, increased visibility of the university with increased number of journal articles and organizing and attending to international conferences.*
9. *For all performance indicators are awarded the grade FULFILLED;*
10. *The Committee of Expert Assessors proposes ----------*

Regards,
Prof. Dr. Gultekin Goller