

The External Evaluation Report of a Doctoral Study Domain

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I. Introduction¹

Visiting Team:

- Prof. Petrica VIZUREANU, Universitatea Tehnica "Gh. Asachi" Iasi – coordinator
- Prof. Gultekin GOLLER, Istanbul Technical University – internațional expert
- Raul-George Ciubotariu, Universitatea Tehnica "Gheorghe Asachi" Iasi – student representative

The Doctoral School of Engineering Sciences (SDSI) was founded in 2012 by the UVT Senate Resolution no. 105D/09.03.2012 on the reorganization of the UVT Doctoral School into an Organizing Institution for Doctoral Studies (IOSUD) with two Doctoral Schools, with 3 doctoral fields, each. SDSI organizes PhDs in the fields of **Electrical Engineering, Materials Engineering and Mechanical Engineering**.

Materials Engineering domain operates with 5 Ph.D. supervisors. Between 2016 and 2021, 4 theses have been defended and all have been confirmed. Currently, 14 Ph.D. students are enrolled at SDSI-UVT at the field of Materials Engineering. The scientific output of Ph.D. students in Materials Engineering during the evaluated period is: 4 book chapters (national and international), 72 articles published in ISI listed journals (including those published in ISI proceeding), 21 articles in BDI indexed journals, and 39 articles presented at international conferences, 19 awards, 5 patents granted and 11 patent applications.

There are different laboratories for the PhD students to carry out their studies such as Design, modeling and simulation in renewable energy systems, Physical and structural characterization of matter - Scanning Electron Microscope (SEM) - equipped with E-beam Lithography (EBL) module for electron beam photolithography and two analysis systems such as Energy Dispersive Spectroscopy (EDS) and Wavelength Dispersive Spectroscopy (WDS), Prototyping and eco-design in renewable energy systems - Torsion and compression tensile testing system in static and dynamic regime, 3D scanner for reverse

Engineering, Nanomaterials and Nanotechnologies Laboratory: Specord M400 Spectrometer, M80 IR

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



Spectrometer, Abbe Refractometer, Chemical Instrument For Synthesis Of Nanomaterials, Vapour phase deposition Laboratory: Rockwell Hardness Tester, Low Pressure Thin Film Deposition Facility.

Quality objectives are set at the IOSUD level and focus on the following areas: quality management, continuing education/training, scientific research and academic creation, national and international cooperation. For each objective, actions, deadlines, responsibilities, performance indicators, and resources are specified.

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 researches. All ethical issue aiming to control all unexpected situation probable as well.

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:*

The criterion was met. IOSUD-UVT has developed and implemented the regulations, methodologies, and procedures necessary to operate in accordance with the legislation on the organization of doctoral studies.

(a) *the internal regulations of the Doctoral School;*

a) REG 01 - SDSI - Regulation of the UVT Doctoral School of Engineering Sciences, Edition 3, approved by the Senate of the Valahia University of Targoviste by HSU No. 61

E/29.01.2020, in force since: 29.01.2020 (Annex 17.1).

(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;*

M08 - Methodology for electing the members of the Doctoral School Council and



appointing the Director of the Doctoral School (Annex 17.2), approved by Approved HS

22Q/27.04.2017.

-The SDSI Director is appointed by the CSUD for a 5-year term (art 2, M08) and under art

14.9 HG 681. The Director of SDSI is Dinu COLTUC.

-Elections for the appointment of the doctoral member CSD-SDSI were held in 2017 in two rounds, respectively on 7.07.2017 and 14.07.2017, the elected representative being Mr. Liviu

OLTEANU. The elections were validated by the UVT Senate by Resolution no. 27 of 31.07.2017.

Due to the vacancy, by-elections were held in 2021 on 13.04.2021 and 15.04.2021, with Mr.

Corneliu Gabriel BUICĂ as an elected representative. The elections were validated by the UVT

Senate by Resolution no. 26 of 22.04.2021. The minutes of the elections can be found in Annex 5.

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

Methodologies for the organization and conduct of doctoral studies (admission of doctoral

students, completion of doctoral studies):

-REG 10 - Institutional regulations for the organization and conduct of doctoral degree programs at Valahia University of Targoviste revised and approved by the Senate of the

Valahia

University of Targoviste on 31.01.2019 (Annex 17.3).

- M11 - Methodology for the organization of admission to doctoral studies, approved by the Senate of the Valahia University of Targoviste on 26.04.2018 (HS 10B), effective from: 26.04.2018 (Annex 17.4).

- PO 07.28 Organisation and conduct of admission to the doctoral degree cycle, approved by the Monitoring Commission on 2 April 2018, approved by the Senate of the Valahia

University

of Targoviste on 26.04.2018 (Annex 17.5).

- PO 07.26 Completion of doctoral studies, advised by the Monitoring Commission on 2 April 2018, approved by the Senate of the Valahia University of Targoviste on 26.04.2018

(Annex

17.6).

-OP 07.43 Completion of doctoral studies using alternative teaching methods (Annex 17.7).

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

The existence of mechanisms for recognizing the status of doctoral supervisor and the equivalence of doctorates obtained in other countries;

-PO 07.37 Recognition of doctoral degree obtained abroad, advised at the Monitoring



Committee meeting of 06.12.2018, approved at the University Senate meeting of 19.12.2018 (Annex 17.8).

-PO 07.38 Recognition of the status of doctoral supervisor obtained abroad, advised at the meeting of the Monitoring Committee on 06.12.2018, approved at the meeting of the University

Senate on 19.12.2018 (Annex 17.9).

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

Functional management structures (Doctoral School Council), including proof of the regularity of the convening of meetings.

f) the contract for doctoral studies;

The doctoral study contract is presented in Annex 8.

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

The training program based on advanced university studies is regulated in Art. 8-Art. 10 of REG 01 - SDSI (Annex 17.1).

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

The documents are given on the website

<https://www.scoaladoctorala.valahia.ro/> and in Annex 17

The minutes of the elections can be found in Annex 5.

The doctoral study contract is given in Annex 8.

- 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 indicator is met. The regulations of the Doctoral School of Engineering Sciences of the Valahia University of Targoviste address the issues in Art. 17 (5) of GD 681/2011 as amended (Annex 17). Thus:

a) the acceptance of new doctoral supervisors is regulated in Art. 7.1, and retreat of the membership of the Doctoral School in Art. 7.2.;

b) the program of doctoral studies is regulated in Art. 8-Art. 10;

c) the change of doctoral supervisor is discussed in Art.13.7-13.9, and the mediation of conflicts in Art.13.5-13.6;

d) the discontinuation of the doctoral program is set out in Art.14.3-14.6;

e) prevention of fraud in scientific research, including plagiarism is discussed in Art. 13.10-13.12, Art. 20.17;



f) access of doctoral students to research and documentation resources is set out in Art. 13, Art. 15.g;

g) Art. 17.2 specifies that doctoral studies at SDSI are full-time or part-time, and Art. 15.2.b specifies that the doctoral student must carry out the activities set out in the individual plan of doctoral studies under the conditions of a frequency established by the supervisor.

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

. **Details related with these informations are given in the Annexes 17.**

- 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.

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 indicator is met. IOSUD uses UMS (University Management System), an integrated software product developed by RedPoint Software Solutions

(https://rpss.ro/ro_RO/products/university-management-system/). The product allows for the management of the entire cycle of studies, from admission to completion, and allows for integrating aspects related to the academic and teaching organization, the status of functions, as well as tools dedicated to processing and document management. The product allows school management for the entire cycle, from admission to complete studies, and allows the integration of aspects related to academic and teaching organization, the status of functions, as well as tools dedicated to process and document management. UMS is currently used in 24 Romanian universities. UVT started to use UMS in 2011. In IOSUD, UMS has been used since 2018.

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

Related informations are given at the website https://rpss.ro/ro_RO/products/university-management-system/.

- 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 websites.

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 indicator is met - all Ph.D. theses are checked, since 2016, with www.sistemantiplagiat.ro. Sistemantiplagiat.ro is a text similarity detection program created in 2002 by the Polish company Plagiat.pl, launched in Romania in 2012. Sistemantiplagiat.ro is in the



list of programs recognized by CNATDCU for establishing the degree of similarity for scientific works, published in MENCS Order no. 3485 of March 24, 2016. Currently, the program is used by 54 universities (ASE, Univ. Bucharest, UMF, ATM, etc.). The program calculates two similarity coefficients: for the calculating similarity coefficient 1, all sentences discovered by the system in other documents are taken into account; for the calculating similarity coefficient 2, only sentences whose length exceeds the imposed limit are taken into account. UVT has developed an anti-plagiarism checking procedure for undergraduate, dissertation, and doctoral work that sets out how to work and the limits for the two coefficients. The similarity report provided by the program is validated by the Ph.D. supervisor who analyses, in addition to the coefficient values, the relevance of fragments discovered by the system in other texts. Moreover, since 2016, the similarity report is one of the parts of the Ph.D. file that is submitted electronically, with electronic signature, on the platform for the validation of the thesis by the CNATDCU.

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

Related information are given at www.sistemantiplagiat.ro

- 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 websites.

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 indicator is met. There are currently two ongoing grants:

1. PN-III-P1-1.2-PCCDI-2017-0476, Contract no. 51/2018, NEW DIAGNOSIS AND TREATMENT TECHNOLOGIES FOR THE PRESERVATION AND REVITALIZATION OF THE ARCHEOLOGICAL COMPONENTS OF THE NATIONAL CULTURAL HERITAGE - ARHEOCONS, 2018-2021 obtained by the PhD supervisor Prof. dr. Rodica Mariana ION (financed PhD students Olteanu Liviu, Stirbescu Nicolae Mihail);

2. PN-III-P4-ID-PCE-2020-0404, Ti-based implant with modified surface and electromagnetic structures, obtained by Prof. Ildiko Peter (PhD student Dumitru Alina).

Other projects obtained by PhD supervisors in the field are:

International projects A METHOD BASED ON NANOMATERIALS FOR CONSERVATION OF PAPER AND WOOD ARTIFACTS, 2016-2018, Director Prof.univ.dr. Rodica Mariana ION, <https://uefiscdi.gov.ro/userfiles/file/CAPACITATI/Bilaterale/ROZA/Competitie%202014/Lista%20propuneri%20de%20proiecte%20acceptate%20la%20finantare%>



20Romania-Africa%20de%20Sud%202016.pdf 2018-2021: UE COST CA17021- Correlated Multimodal Imaging in Life Sciences (18TCOMULIS18T), <https://www.cost.eu/actions/CA17121/#tabs|Name:overview> 2014-2018: CM1202 - Supramolecular photocatalytic water splitting (PERSPECTH2O), <https://www.cost.eu/actions/CM1202/#tabs|Name:overview>

National projects

1. PN-III-P1-1.2-PCCDI-2017-0476, Contract no. 51/2018, NEW DIAGNOSTIC AND TREATMENT TECHNOLOGIES FOR THE CONSERVATION AND REVITALIZATION OF ARCHAEOLOGICAL COMPONENTS OF THE NATIONAL CULTURAL HERITAGE - ARHEOCONS, 2018-2020;

2. PN-III-P4-ID-PCE-2020-2024, Partner team leader, Ti-based implant with modified surface and electromagnetic structures;

3. PNII-PT-PCCA-2013-4-0831, Contract no. 261/2014, INNOVATIVE TECHNIQUES AND MATERIALS FOR THE CONSERVATION/RESTORATION OF STUCCO AND DECORATIVE MASONRY ELEMENTS IN HERITAGE BUILDINGS;

4. Project coordinator PN-III-P2-2.1-CI-2017-0599: INNOVATIVE SOLUTION FOR OPAQUING AND PHOTOCHEMICAL PROTECTION OF SURFACES PAINTED WITH ACRYLIC PAINTS, 2017 - 2017;

5. Project coordinator PN-II-PT-PCCA-2011-3.2-1640, AN INTEGRATED APPROACH FOR REINFORCEMENT OF HISTORICAL CHALK MONUMENTS BY MEANS OF NANOMATERIALS-BASED TREATMENT - A REVOLUTIONARY CONCEPT, 2012 - 2016;

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

Details are given in websites.

- 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 websites.

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 indicator is met. Of the 14 SDSI-IM Ph.D. students, 7 have received more than 6 months of other funding. Thus, Ph.D. students receive funding from research grants.

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

Details and copies of the agreements are given in report

- 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 report.



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.).*

The indicator is met. The percentage of grants/fees allocated to doctoral students' training (participation fees for 6 conferences) is 17.1%. SDSI-IM has supplemented the aspect of funding from grants/fees of the UVT with funding from research contracts, which can be observed by examining the participation in scientific events (Indicator *B.3.1.2) and the funding of Ph.D. students from other sources.

On average, registration fees of 2000 - 3000 lei and actual travel expenses of 2500 lei were paid for participation in the conferences, in total 5000 lei per participant. In total 6x5000 = 30000 lei per participant. In addition, several doctoral students traveled for training, with actual participation in conducting experiments and processing results, amounting to 6536,7 lei by doctoral students Liviu Olteanu and Nicolae Stirbescu. For publication fees, ranged from 1800 to 2000 Swiss Francs, i.e. 8550 lei per participant, in total 59850 lei.

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

Details about the calculation method and about data specific to the area are presented in Annex 9.

- 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.

Recommendations:

The indicator is fulfilled.

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.

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.*

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.



The indicator is met. SDSI-IM uses the UVT research infrastructure without restrictions. As presented in Section 1.2 of the report, SDSI-IM Ph.D. students have access to the laboratories of the ICSTM research centers and the Faculty of Materials and Mechanical Engineering.

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

The research infrastructure is given on the website of the Doctoral School or the websites of the centers (ex. <https://fsim.valahia.ro/nanomec/>). UVT equipment and service offers are also given on the ERRIS platform (<https://erris.gov.ro/Valahia-University-of-Targoviste>).

- 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.

Criterion A.3. Quality of Human Resources

Standard A.3.1. At the level of each domain there are sufficient qualified staff to ensure the conduct of doctoral study 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 indicator is partially met. Four leaders meet all the criteria (R.M. Ion, V. Bratu, N. Angelescu,

I. Peter), and the fifth (Gh. Ionita) partially meets the criteria, being in the stage of concluding the contract with the university. We underline that the scores of the 4 leaders are significantly higher than the minimum score (2 to 9 times) and all leaders are recognized researchers in the field.

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

Related information is given in Annex 10.

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

Relevant informations are given in the Annexes.

Recommendations:

The indicator is partially 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 indicator is partially met - two of the 5 heads are IOSUD full-time employees at UVT (R.M. ION, V. BRATU), two are retired (N. ANGELESCU, Ghe. IONITA – in retreat) and one associate professor (I. PETER).



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

Details are given in Annex 11.

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

Relevant informations are given in the Annexes.

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.*

Indicator is met. The course on Ethics and Academic Integrity was given by Prof.Ph.D.

Gheorghe GHEORGHIU (CV in Annex 12.1), from the Faculty of Law of UVT where he teaches courses on Intellectual Property Law, Private International Law, Commercial Law. Mr. Gheorghiu is a full member of the Romanian Academy of Legal Sciences (since 2015). In addition to his teaching activity, Mr. Gheorghiu is an industrial property advisor, intellectual property arbitrator, member of the scientific board of the Romanian Journal of Intellectual Property Law, and member of the editorial board of the journal Dreptul. From the academic year 2020-2021, the course of Ethics and Academic Integrity is held by Prof.Ph.D. Marius PETRESCU (CV in Annex 12.3), the Ph.D. supervisor at SDSEU.

The training program based on advanced undergraduate studies includes Ethics and Academic Integrity, Research Methodology and 3 specialist courses recommended by the Ph.D. supervisor depending on the subject of the thesis and the path of the Ph.D. student (master courses or individual study based on a recommended bibliography including recent articles in the field). For each discipline, doctoral students take a colloquium to check the acquisition of competencies (knowledge of the fields, synthesis capacity, critical analysis, capacity to evaluate results, etc. – the specific discipline sheets are presented in Annex 15). The curriculum also provides for three Research Progress Reports concluding with a colloquium in front of the mentoring committee. The CSD-SDSI recommends the inclusion of Ph.D. students publications in the reports, which allows the supervising committee to analyze the Ph.D. students progress in terms of problem formulation, hypothesis formulation, analytical skills, handling of mathematical apparatus, writing, and presentation.

The Research Methodology Course is taught by Prof.Ph.D. Vasile Bratu (CV in Annex 12.2), Ph.D. supervisor in Materials Engineering at SDSI or Prof.Ph.D. Nicolae Vasile, Ph.D. supervisor in Electrical Engineering. Both have a long experience in research. Prof. V. Bratu has participated in 18 research contracts funded by the National Research and Development Programmes or by industrial companies and design institutes (of which 2 as responsible), one international research contract as director, one national contract as scientific director. It should also



be mentioned that Prof.Ph.D. N. Vasile was for 13 years (1992-2005) Director-General of the Institute for Electrotechnical Research (ICPE) Bucharest. The other 3 specialist courses are recommended by the Ph.D. supervisor depending on the subject of the thesis and the Ph.D. candidates pathway. For doctoral students who have already taken the UVT master's courses, as a rule, the SDSI-IM Ph.D. supervisors specify individual studies based on a recommended bibliography, which must include recent articles in the field. We mention a few disciplines: Heritage Materials (R.M.Ion), Nanomaterials (R.M. Ion), Epistemology (N.Vasile).

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

CVs' are given in Annex 12.

The specific discipline sheets are given in Annex 15.

- 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.

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 programs³ does not exceed 20%.*

The indicator is met. Only one Ph.D. supervisor supervises more than 8 Ph.D. students (Prof.Ph.D. Rodica Mariana ION has 9 Ph.D. students in training). The situation of the coordination of doctoral students in an internship is as follows: Prof.Ph.D. Gheorghe IONITA - 1 doctoral student, Prof.Ph.D. Nicolae ANGELESCU - 2 doctoral students, Assoc.Prof.Ph.D. Ildiko PETER - 1 doctoral student, and Prof.Ph.D. Vasile BRATU - 1 doctoral student.

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

Details are given in Annex 2.12.

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

All relevant informations are given in the Annexes

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*

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.



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.

The indicator is met. Four of the 5 Ph.D. supervisors, Prof.Ph.D. Rodica Mariana ION, Prof.Ph.D. Vasile BRATU, Prof.Ph.D. Nicolae ANGELESCU, Assoc.Prof.Ph.D. Ildiko PETER, have representative Web of Science indexed publications and a very good international visibility. We list below five representative ISI articles (with impact factor) and elements of the international visibility of the four Ph.D. supervisors.

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

Details and supporting documents are given in Annex.

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

All relevant informations are given in the Annexes.

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 indicator is met - 4 out of 5 PhD supervisors exceed at least 25%, based on the scientific results of the last five years, the score of the CNATDCU minimum standards.

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

Details and supporting documents are given in Annex 13.

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

All relevant informations are given in the Annexes.

Recommendations:

The indicator is fulfilled.

Domain B. EDUCATIONAL EFFECTIVENESS

**general description of domain analysis.*

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 indicator is met. Four of the candidates enrolled in the last 5 years have not completed a Master's degree at UVT. The ratio is $4/7 = 0.57 > 0.2$. The indicator is also met considering the ratio between the number of candidates and the number of budget places, i.e. $15/7 = 2.14 > 1.2$.

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

Details are given in Annex.

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

All relevant informations are given in the Annexes.

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.*

The indicator is met. Admission to doctoral programs for SDSI-IM is based on an oral examination, in which candidates present their academic, research, and professional performance, publications in the field, and present a proposal for a research topic for the doctoral thesis to the competition committee.

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

Details and admission criteria in the past five years are given in Annex.

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

All relevant informations are given in the Annexes.

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 admission⁴ does not exceed 30%.*

The indicator is met. The dropout rate in the first three years is 13.33%

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

Details are given in Annex.

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

All relevant informations are given in the Annexes.

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 indicator is met. The training program based on advanced undergraduate studies comprises four disciplines (Annex 15), namely, Research Methodology (Annex 15.1), two other specialist disciplines proposed by the supervisor (master courses or individual study based on the bibliography indicated by the supervisor, bibliography which must include recent articles relevant to the subject of the Ph.D. thesis and Ethics and Academic Integrity (Annex 15.2, 15.3).

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

Details and supporting documents are given in Annex 15.

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

All relevant informations are given in the Annexes.

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 indicator is met. The fourth subject in the advanced undergraduate-based training program is Ethics and Academic Integrity, which concludes with a colloquium. Course topics

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.



include introductory notions on ethics and morality, research ethics in Romania, correct writing of an academic paper, plagiarism and self-plagiarism, use of computer programs for plagiarism detection purposes, UVT code of ethics, and professional deontology

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

The subject sheet is given in Annex 15.2, 15.3.

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

All relevant informations are given in the Annexes..

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 activities⁵.*

The indicator is met. For the subjects in the advanced degree-based training program, doctoral students take a colloquium to test the knowledge acquired (knowledge of the fields, synthesis skills, critical analysis, ability to evaluate results, etc. - the specific subject sheets are given in Annex 15). The educational plan also provides for three Research Progress Reports concluding with a colloquium in front of the tutoring committee. The CSD-SDSI recommends the inclusion of Ph.D. students' publications in the reports, which allows the supervision committee to analyze the Ph.D. student's progress in terms of problem formulation, hypothesis formulation, analytical skills, handling of mathematical apparatus, writing, and presentation.

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

Details are given in Annex 15.

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

All relevant informations are given in the Annexes.

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.*

The indicator is met. The mentoring committees are made up of specialists in the field, UVT teaching staff, with whom the doctoral student meets regularly, and with whom he/she submits progress reports every year or less. We exemplify with joint publications of 4 Ph.D. students (in training or with theses defended during the period evaluated) with co-authors in the

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.



mentoring committees (4 out of 14 Ph.D. students at SDSI-IM represent 29%).

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

Details regarding the existence and function of advisory committees are given in Annex.

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

All relevant informations are given in the Annexes.

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 indicator is met. The training of the 14 Ph.D. students enrolled at IM is provided by 10 teaching staff (5 Ph.D. supervisors, 2 more professors in the disciplines of Research Methodology, Ethics, and 7 other teaching staff in the mentoring committees, as follows: Prof.Ph.D. Lavinia BURULEANU, Prof.Ph.D. Tanța SETNESCU, Prof.Ph.D. Cornel MARIN, Prof.Ph.D. Radu SETNESCU, Assoc.Prof.Ph.D. Ildiko PETER, Prof.Ph.D. Nicolae ANGELESCU, Prof.Ph.D. Vasile BRATU), which amounts to a ratio of 14:14=1:1.

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

Details are given in Annex 2.20.b

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

All relevant informations are given in the Annexes.

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.

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.

Indicator is met. The following is a list of the representative papers of Ph.D. students who have obtained their doctoral degrees in the last 5 years. The full papers are grouped in Annex 16. We mention that articles 1.1 and 2.1 are published in ISI top 50% ranked journals (Q1, red) with impact factors 5.5 and 2.762 respectively. Article 1.2 is published in an ISI top 25% ranked journal (Q2, yellow) with an impact factor of 3.057. Doctoral students have also won important prizes at the (Annex 16-1.3., Annex 16-1.4).



1. Ramona Marina Grigorescu, Paul Ghioca, Lorena Iancu, Madalina Elena Grigore, Ramona Elena Andrei, Mircea Ioan Filipescu, Rodica Mariana Ion, Zina Vuluga, Ion Anghel, Ioana-Emilia Sofran, Cristian Andi Nicolae, Augusta Raluca Gabor, Anca Irina Gheboianu, Ioan Alin Bucurica, Development of thermoplastic composites based on recycled polypropylene and waste printed circuit boards, WASTE MANAGEMENT, 2020, 118, 391-401; (IF=5,5) – Q1
2. Radulescu, C.; Buruleanu, L.C.; Nicolescu, C.M.; Olteanu, R.L.; Bumbac, M.; Olban, G.C.; Simal-Gandara, J. , Phytochemical Profiles, Antioxidant and Antibacterial Activities of Grape (*Vitis vinifera* L.) Seeds and Skin from Organic and Conventional Vineyards, PLANTS-BASEL, Volume , Issue 11, Article Number: 1470, 2020; (IF= 2,762) – Q1
3. M.E. David, R.M. Ion, R. M. Grigorescu, L. Iancu, E. R. Andrei, Nanomaterials Used in Conservation and Restoration of Cultural Heritage: An Up-to-Date Overview, Materials 2020, 13, 2064; doi:10.3390/ma13092064; (IF= 3,057) – Q2
4. Avram, D; Angelescu, N; Ungureanu, DN; Gheboianu A; Bancuta, I; Setnescu, T, Study on bioactivity of phosphocalcic glasses, JOURNAL OF OPTOELECTRONICS AND ADVANCED MATERIALS, Volume: 18, Issue: 7-8, Pages: 691-696, 2016; (IF= 0,631)
5. Avram, D; Ungureanuz, D; Angelescu, N; Ionita, I; Gheboianu, A; Bancuta, I; Popescu, EC, The Structural and Compositional Evaluation of Some Calcium Phosphate Glasses with Bioactive Potential, REVISTA DE CHIMIE, Volume: 69, Issue: 6, Pages: 1424-1428, 2018, IF = 1.412;

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

List of relevant papers per PhD student and the papers themselves are given in Annex 16

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

All relevant informations are given in the Annexes.

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 indicator is met with 2.5 = 10/4.

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

Details are given in Annex.

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

All relevant informations are given in the Annexes.

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.*

The indicator is met. No leader has assigned more than two theses in one year to the same external referee. The table below shows the cases of two theses/years assigned by a supervisor to the same referee, i.e. Prof. Gheorghe NECHIFOR, 2020 (theses coordinated by RM. ION).

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

Details are given in the Annexes.

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

All relevant informations are given in the Annexes.

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.*

In the assessed doctoral field, 4 doctoral theses have been defended in the last five years, therefore the criterion is not assessed.

- 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 criterion is not assessed. Number of the PhD students should be increased.

Domain C. QUALITY MANAGEMENT

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.*

The indicator is met. IOSUD and SDSI follow the quality assurance policy implemented at Valahia University. IOSUD's objectives are aligned with the institution's objectives, namely in the field of the quality management system, continuing education/training, scientific research activities, and in the field of national and international cooperation. Every year, IOSUD doctoral schools are audited and objectives are monitored. IOSUD also has a quality officer, Prof.Ph.D. Mihai MEILA who is also a member of the CSUD. For monitoring the scientific activity of Ph.D. supervisors, point (a) of the indicator, IOSUD has introduced procedure PO-06-14 (Annex 17.14) which allows a quantification of the annual activity of Ph.D. supervisors. The procedure takes into account and scores only the results/activities recognized by the CNATDCU (according to Order No 6129 of 20 December 2016). By norming to the minimum score required for habilitation corresponding to each field, the procedure allows a unitary evaluation of Ph.D. supervisors from different fields.

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

Details are given in Annex 17.14.

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

All relevant informations are given in the 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 indicator is met. The SDSI regulations provide for the right of doctoral students to freely express their needs and level of satisfaction with the doctoral program in Art. 15.o) and the obligation of SDSI to take into account the feedback of doctoral students in Art. 13.13). In this regard, SDSI has developed a questionnaire to highlight the level of satisfaction with the advanced study program, the research program, the mentoring committee, and the doctoral supervisor (the questionnaire is presented in Annex 18). It should also be mentioned that doctoral students have representatives in the CSD and CSUD through which they can communicate with the management



of the doctoral school or IOSUD or address directly, for any problem, the director of the SDSI, CSD, or CSUD.

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

Relevant information are given in Annex 18.

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

All relevant informations are given 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 indicator is met - all information is available on the IOSUD website,

<https://www.scoaladoctorala.valahia.ro/>

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

<https://www.scoaladoctorala.valahia.ro/>

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

All relevant informations are given in the 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.

Indicator is met - SDSI PhD students have access to the following databases: PROQUEST Central, ScienceDirect Freedom Collection (Elsevier), Scopus (Elsevier), Web of Science - Core Collection, InCites Journal Citation Reports, Derwent Innovations Index (Clarivate Analytics).

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

Details are given in Annex.

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

All relevant informations are given in the Annexes.

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.

Indicator is met - Ph.D. students, through their supervisors, have access to the similarity checking platform www.sistemantiplagiat.ro. The platform is described in indicator A.1.2.

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

www.sistemantiplagiat.ro.

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

All relevant informations are given in the Annexes.

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.

Indicator is met - SDSI-IM Ph.D. students have free access to CC_NANOMECH, CC_SASM research labs, FIMM labs (out of hours - bachelor/master), and ICSTM facilities.

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

Details are given in Annex.

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

All relevant informations are given in the Annexes.

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.*

Indicator is met. 2 students participated in conferences abroad and 3 in visits/workshops.

Eliminating overlaps, a total of 5 students out of 14 had mobility, i.e. 35.71% and 4 students out of 14 had placements abroad, i.e. 28.57%. We present below the lists of mobilities.

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

Details are given in Annex.

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

All relevant informations are given in the Annexes.

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.*

Indicator is met.

1. Dr. John Mack, Invited Lecturer, Rhodes University, South Africa "The rational design of BODIPY dyes for biomedical and optical limiting applications"

2. Andrew J. Hall, Medway School of Pharmacy, Universities of Greenwich & Kent, MIP BUILDING: DO BETTER BRICKS MAKE BETTER STRUCTURES?

3. Jean-François Chailan, Laboratoire MAPIEM – EA 4323 – Université de Toulon, France, INTERPHASES AND DURABILITY IN POLYMER BASED COMPOSITE MATERIALS: CHARACTERIZATION AND MODELIZATION

4. B. Tsyntsarski, Bulgarian Academy of Sciences, Sofia, Bulgaria, CARBON MATERIALS FROM POLYMER WASTES

5. D.M.-Yerga, DropSens, S.L., Edificio CEEI, Parque Tecnológico de Asturias, Asturias, Spain, IN SITU' SERS EFFECT STUDIES WITH SCREEN-PRINTED ELECTRODES AND A COMPACT RAMAN SPECTROELECTROCHEMICAL INSTRUMENT

6. Katri Laatikainen, Laboratory of Chemical Metrology, Lappeenranta University of Technology, Lappeenranta, Finland IMPROVEMENT FOR ION IMPRINTING TECHNIQUE

7. Nnamdi Nwahara, Department of Chemistry, P.O.94, Rhodes University, Grahamstown, South Africa, Photophysical properties of nanocomposites of aluminum tetrasulfonated phthalocyanine with graphene quantum dots linked to folic acid.



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

Details are given in Annex.

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

All relevant informations are 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.).*

The indicator is being met. In 2021, an EU- Marie Curie project was submitted to fund doctoral internships for the completion of Ph.D. theses of foreign Ph.D. students, Wallachia University being responsible for one of the Working Groups in this project.

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

Details are given in Annex.

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

All relevant informations are given in the Annexes.

Recommendations:

The indicator is partially fulfilled. There should be international expert in the thesis committes.

IV. SWOT Analysis

<p><u>Strengths:</u></p> <ul style="list-style-type: none"> -Competence of Ph.D. supervisors. -SDSI-IM Ph.D. supervisors have research experience and good national and international visibility. - SDSI-IM Ph.D. students are affiliated with the ICSTM-UVT research centers where their supervisors work 	<p><u>Weaknesses:</u></p> <ul style="list-style-type: none"> - Number of ongoing research project is low. - Lack of international projects and a relatively modest level of internationalization.
<p><u>Opportunities:</u></p> <ul style="list-style-type: none"> - National/international visibility of leaders. - Existing public-private partnerships. 	<p><u>Threats:</u></p> <ul style="list-style-type: none"> - The number of budget places awarded to UVT is small. - Lack of research project competitions. - Average age of the PhD coordinator is high. - Decreasing attractiveness of engineering Ph.D

V. Overview of judgments awarded and of the recommendations

No.	Type of indicator (* , C)	Performance indicator	Judgment	Recommendations

The recommendations contained in the report shall be resumed in the indicators' analysis. Other general recommendations may be made that do not fit within a particular indicator.

VI. Conclusions and general recommendations

Self assessment report has been prepared in detailed and provides the opportunity to answer all possible questions. As a part of evaluation process, online meetings were carried out 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 recommendations during the evaluation of self study report and meeting with different shareholder of the material science doctoral program of the UVT 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 researches.*
- 2. Materials Engineering Department is quite active in research and international experience of the supervisors is very good.*
- 3. Average age of the PhD coordinator is high. Thus, a strategy should be created to reduce the average age of the staff.*
- 4. Academic staff mentioned that there is a specific budget for each PhD study. They stated out that they follow the trend and collaboration with the private company while determining PhD thesis subjects.*
- 5. In general, there is a limited financial source and this can be assumed a disadvantage for the university in terms of the students to select this university. The budget should be increased by sponsorship and cooperation with the private sector.*
- 6. Number of ongoing research project is low. This effects the income and attractiveness of the department. A strategy should be developed for material and financial supporting to research. For this purpose, thesis subject can be establish with private or public companies.*
- 7. Another important issue, number of the PhD students is not enough. A strategy should be developed to increase the number of PhD students.*



8. *There is not ongoing international project. This results in low internationalization level of the department. Besides, there is not PhD thesis carried out with cotutelle strategy. International projects should be initiated. A strategy should be created to attract students from abroad.*
9. *PhD students were mentioned that there is a strong relationship between the students and the advisors. The advisors always guide the students not only the research but also in every field. Some students pointed that they have scholarship from the state budget. Some students mentioned that they paid their expenses from their own budget.*
10. *During the meetings, representative of the employers mentioned that there is no strategy for employment of students. Subject of the PhD thesis can be determined with the university and the companies to solve an industrial problems.*
11. *Members of Ethics Commission was pointed out that the commission consisted of 7 people, including 5 professors and 2 students. Members mentioned that they carried out their activities on Zoom during the pandemic situation. They stated that they have good collaboration with the doctoral school. They emphasized that committee meetings are held on a regular basis and also mentioned that committee come together when necessary.*
12. *In the meeting with the graduate students, Some students emphasized support from the school for their publications at the open access journals and some of them received conference attendance support. Some students mentioned that they got the required materials by their own budget. Some students mentioned that they received a scholarship. They stated that they had good cooperation with the doctoral school and could easily get the necessary information from the school secretariat. They pointed out that they had a good cooperation with their supervisor and some of them mentioned that they had meetings with their supervisors for every week. Some of the students continue to meet with their supervisors after their PhD studies to article publishing and carried out the projects. Most of students emphasized that they went to abroad by using mobility program. Some of them went to Montenegro (Summer school), Bulgaria (Summer school) and Portugal (for 3 and 6 months). 2 students said that they published 5 ISI articles and 1 student said that she published 2 ISI article (1 of them at Q1 article) during PhD studies.*
13. *From the meetings with representative with the research centers, it was pointed out that PhD students can use the equipment and the other facilities in the laboratories. They supported the departments during their research activities.*
14. *As a final point, two performance indicators are partially fulfilled and for the other all performance indicators are awarded the grade FULFILLED;*

Regards,

Prof. Dr. Gultekin Goller