

Listă de lucrări

Candidat: Maria BOGDAN

A. Articole publicate în extenso

1. Articole indexate ISI

[1] **Bogdan, M.**; Peter, I. A Comprehensive Understanding of Thermal Barrier Coatings (TBCs): Applications, Materials, Coating Design and Failure Mechanisms. *Metals*, 14, 575, 2024, DOI: 10.3390/met14050575, FI: 2.6, Q2.

2. Articole indexate BDI

[1] **Bogdan, M.**; Peter, I. Thermal Barrier Coatings (TBCs): a Brief Overview. *Acta Marisiensis. Seria Technologica*, 21, pp. 8-13, 2024, DOI: 10.62838/amset-2024-0002.*

[2] **Bogdan, M.**; Bucur, B. Aspects Regarding the Online Modular Education System Compared with the Classical Onsite System. *Acta Marisiensis. Seria Technologica*, 17, pp. 18-23, 2020, DOI: 10.2478/amset-2020-0014.*

B. Articole publicate în rezumat

1. Conferințe internaționale desfășurate în țară

[1] **Bogdan, M.**; Peter, I. Functionally Graded Materials: From Characterization to Innovative Applications. George Emil Palade University of Medicine, Pharmacy, Science, and Technology of Targu Mures, University Days, December 9-13, 2024, Targu Mures. Scientific Session of University Academic Staff, International Conference of PhD Students and Young Doctors. Book of Abstracts – în decurs de publicare.

[2] **Bogdan, M.**; Peter, I. High-performance coatings applied to materials exposed to thermal stress in advanced applications: an overview. George Emil Palade University of Medicine, Pharmacy, Science, and Technology of Targu Mures, University Days, December 11-15, 2023, Targu Mures. Scientific Session of University Academic Staff, International Conference of PhD Students and Young Doctors. Book of Abstracts 2023; 6, 218. ISSN 2602-1609 ISSN-L 2602-1609.

[3] **Bogdan, M.**; Bucur, B. Constructive Aspects of a Biomass-Based Cogeneration System. International Conference CADET-NAV 2019, The 41st Scientific Conference for Bachelor Degree Students, Mechanical Engineering Section, Mircea cel Bătrân Naval Academy, Constanța, Conference brochure 2019, pp. 91-92. Award of Excellence.

C. Alte lucrări

1. Comunicări științifice

[1] **Bogdan, M.**; Bucur, B. Proiectarea unei chei antifurt după releveu prezon fixare roată autoturism. Sesiunea de comunicări a cercurilor științifice studențești, Secțiunea Inginerie industrială, Universitatea "Petru Maior", Târgu Mureș, 7-11 mai 2018. Broșura conferinței p. 35.

[2] **Bogdan, M.**; Modrea, A. Fizica văzută altfel. Sesiunea de comunicări a cercurilor științifice studențești, Secțiunea Fizică-Matematică, Universitatea "Petru Maior", Târgu Mureș, 7-11 mai 2018, Broșura conferinței p. 32.

[3] **Bogdan, M.**; Bucur, M. Studii privind utilizarea monedei BITCOIN în lume. Sesiunea de comunicări a cercurilor științifice studențești, Secțiunea Inginerie economică și management, Universitatea "Petru Maior", Târgu Mureș, 7-11 mai 2018, Broșura conferinței p. 34.

* baze de date internaționale

ProQuest – La adresa: <https://about.proquest.com/en/>. Accesat la 18.12.2024.

Index Copernicus – La adresa: <https://journals.indexcopernicus.com/app/auth/login>.
Accesat la 18.12.2024.

EBSCO – La adresa: <https://www.ebsco.com/>. Accesat la 18.12.2024.

Anexe:

Anexa_B_1: International Conference of PhD Students and Young Doctors 2024 (Book of Abstracts – în decurs de publicare);

Anexa_B_2: International Conference of PhD Students and Young Doctors 2023 (Extras Book of Abstracts 2023; 6, 218. ISSN 2602-1609 ISSN-L 2602-1609);

Anexa_B_3_1: Diplomă excelență CADET-NAV 2019;

Anexa_B_3_2: Extras Conference brochure CADET-NAV 2019, pp. 91-92.

Anexa_C_1: Diplomă Comunicări Științifice Inginerie industrială, 2018;

Anexa_C_2: Diplomă Comunicări Științifice Fizică-Matematică, 2018.

Data

19.12.2024

SECTION 4. ENGINEERING-MANAGEMENT

12.00 ROOM A309

PREZENTĂRI ORALE / ORAL COMMUNICATIONS

Moderator/Chairpersons: Prof.dr. Liviu Moldovan, Prof.dr. Ildiko Peter, Prof.dr. Petruța Blaga

Secretar/Secretary: Maria Bogdan

1. CIRCULAR ECONOMY APPLICATION IN DEMOLITION WASTE: A SUSTAINABLE OPPORTUNITY FOR CONSTRUCTION INDUSTRY

Argelme Lopez Malesc

2. SILENCE BY DESIGN: PNR - PASSIVE NOISE REDUCTION AS A SUSTAINABLE SOLUTION IN AUTOMOTIVE ENGINEERING

Mihaela-Bianca Cășeriu

3. THE ROLE OF SPECIMEN DIMENSIONS IN BIAXIAL MECHANICAL CHARACTERIZATION OF OVERSTRETCHED PORCINE AORTA

Alexandru Petru Ion

4. OPTIMIZING THE UV-A-PHOTOCROSSLINKING PROTOCOL FOR THE IMPROVEMENT OF THE BIOMECHANICAL PROFILE OF TISSUE-ENGINEERED VASCULAR GRAFTS

Emil-Marian Arbănaș

5. CONTRIBUTIONS REGARDING THE DEVELOPMENT OF A GROUP OF PHOTOVOLTAIC PANELS FOR THE ELECTRICITY SUPPLY OF A HALL

Ioan Laurențiu Mărginean

6. FUNCTIONALLY GRADED MATERIALS: FROM CHARACTERIZATION TO INNOVATIVE APPLICATIONS

Maria Bogdan

7. LITHIUM EXCESS IN DRINKING WATERS OF A MOUNTAINOUS VILLAGE (SĂCALU DE PĂDURE), A POTENTIAL DETERMINATION FACTOR FOR REMNANT THYROID PATHOLOGY

Maria Melinda Varga

8. UNLOCKING THE FUTURE: NANOPARTICLE INTEGRATION IN Ti-BASED METAL ALLOYS FOR ADVANCED BIOMEDICAL APPLICATIONS

Alex Barna Kacsó



UNIVERSITATEA DE MEDICINĂ,
FARMACIE, ȘTIINȚE ȘI TEHNOLOGIE
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DIN TÂRGU MUREȘ

Anexa_B_2

BOOK of ABSTRACTS

6/2023

George Emil Palade University of Medicine, Pharmacy, Science, and Technology of Targu Mures
University Days
December 11 - 15, 2023, Targu Mures

Scientific Session of University Academic Staff
International Conference of PhD Students and Young Doctors



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BOOK of ABSTRACTS

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International Conference of PhD Students and Young Doctors**

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Scientific Session of University Academic Staff Medicine and Pharmacy

George Emil Palade University of Medicine,
Pharmacy, Science, and Technology of Targu Mures
University Days

December 11-15, 2023, Targu Mures, Romania

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THEATRE OF MIHAIL SEBASTIAN

Dana Maria Bendriş¹

¹Department of Philology, UMFST Tîrgu Mureş

Background: Drd. Dana Maria Bendriş Titlul lucrare: Theatre of Mihail Sebastian. Fantasy, irony, humour. Abstract: In the horizon of the interwar theatre a relevant finality was represented by the involvement in the sphere of reality of the era, the perception of the real, the presence of anodyne characters. Sebastian's irony and humour emerge from the impossibility of unfolding a love story, from the understanding the manias and tics of his characters, the frequent use of peroration, or emphasis on discrepancies between social classes. A controversial writer, Mihail Sebastian contributed to the renewal of the Romanian theatre, through the themes addressed, based on dream, reverie, and adventure, and through formulas, procedures and dramatic ways. In his plays one can notice motivations, aspirations, attitudes, values, a lifestyle and a way of behaving, the characters standing out through intuition and the ability to penetrate, to understand the human. A possible interpretation of the images of Sebastian's plays can be realized by appealing to the Phenomenological Psychoanalysis of the Elements promoted by Gaston Bachelard, who underlines that the artistic image emerges from the depths of the human beings, from the substrates of creativity (where they are found together, vague, undetermined, phantasms, archetypes, formative obsessions of the human being etc.). In the dramaturgy of Sebastian one can distinguish a realism of perception, determined by the constant search for truth, from the perspective of knowing the world, to which are added the lyricism of the ambience, fantasy, and irony as privileged dramatical ways. Keywords: Fantasy, irony, humour. **Material and methods:** - **Results:** - **Conclusions:** -

Keywords: Fantasy, Irony, Humour

HIGH-PERFORMANCE COATINGS APPLIED TO MATERIALS EXPOSED TO THERMAL STRESS IN ADVANCED APPLICATIONS: AN OVERVIEW.

Maria Bogdan¹, Ildiko Peter¹

¹Department of Industrial Engineering and Management, UMFST Tîrgu Mureş

Background: The employment of Thermal Barrier Coatings (TBCs) in aerospace, automotive, and energy industries addresses the demanding requirements of harsh working environments. While superalloys used are resilient to extreme temperatures, wear, and corrosion, sometimes they may reach their limits in advanced applications. To overcome these limitations and optimize performances, TBCs, with a low thermal conductivity ceramic layer, are used. These TBCs significantly reduce surface temperatures, enhancing system durability and efficiency in extreme conditions. The aim of this research is to analyze and synthesize specialized literature to provide a comprehensive perspective on the state of the art in the field of thermal barrier coatings. Using databases such as ResearchGate, Scopus, etc., predominantly recent studies from the last 10 years have been identified through keyword searches, including terms such as: thermal barrier coating, thermal conductivity, ceramic coating, thermal oxidation, etc. Among the identified papers, the most relevant ones have been selected, providing fundamental insights into the development of TBCs. A total of 150 papers that align with the research objective have been selected. The information has been grouped into three main study chapters: A.Applications of TBCs; B.Materials for TBCs; C.Methods for coating manufacturing. Based on these, a collection of necessary information has been assembled in order to initiate experimental studies. Following the analysis of the papers, it has been concluded that improvement of the characteristics of TBCs can be achieved by varying the concentration of elements used in various coatings or by introducing new elements or chemical compounds. A research directive could involve a deeper investigation of La₂Hf₂O₇ as a top coat material for applications in gas turbines and internal combustion engines, manufactured using Air Plasma Spray, Electron Beam Physical Vapor Deposition, and Suspension Plasma Spray techniques. Additionally, it is necessary to identify collaborations that facilitate experimental studies and assess the associated costs.

Keywords: thermal barrier coating, coating manufacturing, yttria stabilized zirconia, thermal conductivity, gas turbines



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*for the high level of research paper presented at the 41th Scientific Conference for
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12th – 13th of April 2019

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Members:

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Lecturer Eng. Aurelia CHIOIBAS, PhD

Conference Room: EP 26

1. Structural Optimization using Genetic Algorithms

Authors: stud. Andrada-Gratiela ANDREI, stud. Diana-Georgiana BĂLĂȘ, stud. Cristina GORGOANA, stud. Andreea-Venetia MUNTEA

Scientific Advisor: Assoc. Prof. Eng. Mihai BEJAN, PhD

Institution: "Mircea cel Batran" Naval Academy, Constanta

Abstract: *When it comes to solving nonconvex, discontinuous, or discrete problems in Structural Optimization (e.g. maximizing first eigenfrequency of a structure), the use of Genetic Algorithms (GA's) gets interesting. Genetic Algorithms can be described as search algorithms based on the mechanism of natural selection and natural genetics. They belong to a category of stochastic search methods, with an additional strength that random search is conducted in those regions of the design space which offer most significant potential for gain. Therefore, genetic algorithms represent a good solution approach for design problems where standard mathematical programming techniques are inefficient. On the other hand, the structural optimization includes calculating design variables that determine the shape dimensions and material properties of a structure, so as to meet certain standards and innovate some features to achieve optimal structure. In conclusion, this paper will present a tool developed to optimize structures for a large range of objectives.*

2. Vibrations of the Main Shaft of the Propulsion System

Authors: stud. Sergiu CÎRLIG, stud. Mario PARUSE

Scientific Advisor: Lecturer Eng. Tiberiu PAZARA, PhD

Institution: "Mircea cel Batran" Naval Academy, Constanta

Abstract: *The propulsion system of a ship is a complex system with many moving parts. Unwanted vibrations caused by misalignment and defects such as small cracks lead to early fatigue and improper functioning. This paper discusses the problems that occur regarding the main shaft and*

measures that can be applied in order to reduce the negative effects. Vibration analysis is one of the methods used to identify these problems. Finally, some conclusions and propositions are made.

3. The Importance of Leader's Personality Traits in the Leadership Efficiency of the Machine Compartment

Author: stud. Marius CODOI

Scientific Advisor: Assoc. Prof. Carmen COJOCARU, PhD

Institution: "Mircea cel Batran" Naval Academy, Constanta

Abstract: *The study aims to describe and explain the special importance of the leader's personality traits in exercising effective leadership. We consider the personality a complex, dynamic, open system in which its basic components: temperament, skills and character have relationships of interaction, interdependence, mutual influence. The study demonstrates the essential role of character in governing the other personality components and how the leader exercises social influence on the followers of the working team in the machine compartment.*

4. The Specifics of Interpersonal Relationships in the Machine Compartment

Author: stud. Cristian CREȚU

Scientific Advisor: Assoc. Prof. Carmen COJOCARU, PhD

Institution: "Mircea cel Batran" Naval Academy, Constanta

Abstract: *The study proposes a pertinent analysis of the specifics of interpersonal relationships aboard the ship, focusing primarily on the characteristics of the naval crew considered to be a social micro-group. Dynamics of interpersonal relationships is described in particular by collaborative, competitive interactions and, not least, conflicting. We suggest a series of solutions to improve dysfunctional relationships in order to increase the effectiveness and safety of naval missions.*

5. Leadership and Mentorship - Comparative Analysis

Author: stud. Teodor GHEORGHE

Scientific Advisor: Assoc. Prof. Carmen COJOCARU, PhD

Institution: "Mircea cel Batran" Naval Academy, Constanta

Abstract: *The study marks the two concepts in the broader sphere of social influence, proposing its description of leadership and mentoring by identifying, categorically differentiating or posting a partial coincidence relationship of the spheres of the two notions. We seek plausible answers to the question of whether the ship's leader is perceived as a mentor and to*

what extent the effectiveness of leadership increases as a result of mentor-specific personality traits.

6. Crank Manufacturing Tehnology

Author: stud. Cosmin-Florin GIUGIUC

Scientific Advisor: Lecturer Eng. Aurelia CHIOIBAS, PhD

Institution: "Mircea cel Batran" Naval Academy, Constanta

Abstract: *Crank is the organ of the engine mechanism that transmits the gas pressure force from the piston to the crankshaft and which assures transformation of the alternative translational movement of the piston in the crankshaft rotation movement. The kinematics of the crank mechanism are studied in the following simplifying assumptions: engine running in stabilized mode, when engine speed is invariant over time; the crankshaft angular velocity is constant. Specific maintenance activities are performed according to the maintenance plan that is found in the technical book: Number of hours of operation; Running maintenance work (daily, weekly, monthly, etc.)*

7. The Calculation of a Ship's Hydrodynamic Coefficients Based on Cfd Simulation Results

Author: stud. George Florin MAN

Scientific Advisor: Col. Eng. Radu VILĂU, PhD.

Institution: Military Technical Academy, București

Abstract: *In the last years the electronic processor has begun to replace more and more the cognitive activities of the human being, but mostly the one of the engineer. Of course, the machine is not capable to fully replace the analitic and visionary human thought. So, in order to make it work the engineer needs to use the software in order to ease his calculations but he also needs to keep his mind sharp, because he is the one who validates all the results. This paper integrates the work of these two entities and presents the work of a student during an Erasmus scholarship in Belgium at the University of Liege at the department of hulls. The work is only an introduction to the problem of CFD simulation and calculus of the hydrodynamic parameters, the theme being much more complex.*

8. Constructive Aspects of a Biomass-Based Cogeneration System

Author: stud. Maria BOGDAN

Scientific Advisor: Assistant prof. Bogdan BUCUR, PhD

Institution: University of Medicine, Pharmacy, Sciences and Technology of Targu Mures

Abstract: *The concept of cogeneration defines simultaneous production with the same installation (gasification reactor) of thermal, electrical and mechanical energy resulting from the gasification process of solid fuel (wood chips, textile material, biomass, compost, etc.) a synthesis gas (SinGas), which by capture, filtration, drying acts as a gaseous fuel in order to obtain thermal, electrical and mechanical energy. The paper aims to create an experimental stand in order to obtain synthesis gas (SinGas).*

9. Noise Effects on Seafarer's Health

Authors: stud. Mario PARUSE, stud. Sergiu CÎRLIG

Scientific Advisor: Lecturer Eng. Tiberiu PAZARA, PhD

Institution: "Mircea cel Batran" Naval Academy, Constanta

Abstract: *Onboard commercial ships there are numerous noise sources that affect seafarer's health. Exposure to high noise levels over long periods of time produce hearing damage, internal organs failure, fatigue, sleep disorder. In this paper, the authors discuss about all the noise problems that affect ship's personnel and about what impact has noise over work efficiency. Also, the financial impact is analyzed. Finally, some conclusions and propositions are made.*

10. Calculation and Construction of Auxiliary Naval Generators. Fuel Supply System in Monobloc Variant.

Author: stud. Robert-Cristian STANCIU

Scientific Advisor: Assoc. Prof. Eng. Corneliu MOROIANU, PhD

Institution: "Mircea cel Batran" Naval Academy, Constanta

Abstract: *The main subject of my license paper is the generator's fuel system and some auxiliary calculation. The project will be structured in four chapters. The first chapter will contain the main features of the frigate type 22. In the second one, I will talk about the necessary amount steam for a ship to work properly, while in the third chapter the calculation of steam generator will be presented. The monoblock burner and its fuel system will be described in the last chapter.*

11. Noise Effects on Workers Health From Shipyards

Authors: stud. Larisa TĂNĂSOIU, stud. Bianca TEODORU

Scientific Advisor: Lecturer Eng. Tiberiu PAZARA, PhD

Institution: "Mircea cel Batran" Naval Academy, Constanta

Abstract: *On a shipyard there are numerous noise sources that affect workers health. Exposure to high noise levels over long periods of time produce hearing damage, internal organs failure, fatigue, sleep disorder. The authors discuss about all the noise problems that affect shipyard's*

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DIPLOMĂ

Se acordă studentei:

MARIA BOGDAN

de la *Facultatea de Inginerie* LOCUL III, pentru
rezultate deosebite obținute la Sesiunea de
comunicări a cercurilor științifice studentești,
secțiunea: *Inginerie industrială*.

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TÎRGU – MUREȘ

7 - 11 mai 2018

MINISTERUL EDUCAȚIEI NAȚIONALE



UNIVERSITATEA
Petru Maior
din
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DIPLOMĂ

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MARIA BOGDAN

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comunicări a cercurilor științifice studențești,
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