Annex no. 1 – Award application*

1. **Candidate**

Name: ANTONIAC

Surname: VASILE IULIAN

PhD from: 2007 (Diploma number 246 / 13.04.2007 – a copy is attached at the end of this document)

Current position: Professor, Dr. Habil. Eng.

Institution: National University of Science and Technology Politehnica Bucharest, Faculty Materials Science and Engineering

Mobile Phone:

E-mail address:

2. **"Gala Cercetării Românești" Edition:** "Gala Cercetării Românești" 2024 Edition
3. **Award and category:** „Henri Coandă" Award, Individual category
4. **Team leader, if appropriate:** not applicable
5. **Research team members, if appropriate:** not applicable

6. Important scientific achievements in the last 5 years.

Prof. Dr. Habil. Vasile Iulian Antoniac (52 years old) obtained his M.E., Ph.D. and Postdoc degrees in Materials Science at University Politehnica of Bucharest. Since 2002, he has been associated with the Materials Science program and Medical Engineering program in the Faculty Materials Science and Engineering, University Politehnica of Bucharest (the former name of the **National University of Science and Technology POLITEHNICA Bucharest**), which is focused on biomaterials obtaining and characterization, medical image processing and the development of new implants for medical applications.

During his career, he developed new design for orthopaedic and dental implants, protocols for biomaterials and implants testing, demonstrating the complementarities of multiple characterization methods, establish protocols for retrieval implant analysis, develop new biodegradable magnesium alloys, innovative coatings or new composite biomaterials, and proved the possibility of gathering reliable data on biomaterials interactions with living tissues using a limited number of testing animals.

The reflection of these contributions in his publications is described briefly below. He published 190 papers in ISI journals (**in the last 5 years, he publish 96 ISI papers, with 57 ISI papers in Q1/Q2 and 19 papers as principal author**), 3 published editorial materials (Recent advances in bioceramics for health, in Frontiers in Bioengineering and Biotechnology, Frontiers Media, IF=5,7 / Q1; Adhesion aspects in biomaterials and medical devices, in Journal of Adhesion Science and Technology, Taylor & Francis, IF=2,3, Q3; Advanced Eco-Technologies and Materials for Environmental and Health Application, in Environmental Engineering and Management Journal, Gh.Asachi Technical Univ. Iasi, IF=1,1, Q4); 5 books as editor in recognized international publisher (2 books in Springer, 1 book in Wiley, 2 books in Trans Tech Publications), 22 book & book chapters, 8 international research projects (4 as partner responsible); 42 national research projects (7 as project manager; 8 as partner responsible, 27 as team member); 10 patents; 84 awards for patents and papers; coordination of students (26 PhD, 78 Master students and 120 undergraduates); Erasmus coordinator (8 agreements, 24 students coordinated, 6 stages in foreign universities); member of the international commission for PhD thesis evaluation or promotion commission in different countries (Romania, Italy, Latvia, Türkiye, Russia); invited professor for teaching in other foreign universities from Israel, China, Portugal, Italy, Türkiye; more than 200 oral and poster presentations at international conferences (62 as plenary invited or keynote speaker). Of course, his career follows a classical evolution for a successful researcher. After he was enrolled in different projects as member and has the opportunity to publish the results, participate at the international conferences, following various

specializations, he was able to make the specific project proposals, join to collaborative international research projects and coordinate his own national projects. He proved his abilities as independent group leader by coordinating 15 national research projects as principal investigator (7 as project manager; 8 as partner responsible) and 4 international projects as partner team leader, in this project proposal domain.

More than 1.500.000 euro was attracted **in the last 5 years**, from the 4 important research projects *Delivering Nanotechnologies, Advanced Materials and Production to REGional Manufacturing*, Interreg Europe Program, Project Code PGI00023 - NMP-REG, (2016-2021), Contract value: 195.075 EURO; *Biogenic Inks combining marine collagen and ionic-doped calcium phosphate for bone tissue engineering*, PC7 Program, ERA-NET Scheme, Contract number 70, (2017-2020), Contract value: 198.636 EURO; *Meta-structures by composite coatings on biodegradable implants made by Mg-Ca alloys for bone regeneration (MAGICBONE)*, PN III, Exploratory Research Projects-contract PCE no.100 (2021-2023), Contract value: 1.198.032 lei (239.606 EURO); *Obtaining and expertization of new biomaterials for medical devices* (MedicalMetMat), PN III–Contract 60PCCDI (2018-2020), Contract value: 5.273.400 lei (1.054.680 EURO).

Based on this, **in the last 5 years** he was able to establish and coordinate two new laboratories (*Biomaterials Laboratory*, and *TEMA-Testing and Expertization of Advanced Materials*), equipped with modern tools like 3D printer, profilometer, durometer, AFM microscope, contact angle, FTIR spectrometer, LM microscope, tack tester, stereomicroscope, equipment's for metallographic sample preparation, corrosion and biodegradation testing).

In the last 5 years, the international visibility of the candidate is proven by the participation as project leader in different international research projects (2 projects as principal investigator for Romanian partner), common publications with various researchers from abroad (Italy, Germany, Israel, USA, France, Russia, Türkiye, China), 16 invited lectures given at the prestigious international conferences (like BIOCERAMICS 31, New Orleans, USA; BRAMAT, Brasov, Romania; BIOMAH 2022, Rome, Italy; BIOMMEDD 2022, Bucharest, Romania; BIOCERAMICS 32, Venice, Italy; ECM 2023, Davos, Switzerland; BIOREMED 2023, Sibiu, Romania; MTM 2023, Istanbul, Türkiye), many awards, participation at the PhD theses or hiring commission as commission member at international level, invited lectures at prestigious universities (Ben-Gurion University of the Negev, Israel; Sichuan University, China; University of Minho, Portugal; Istanbul Technical University, Turkiye).

Also, he was the conference president and main organizer of some important scientific conference in the field of biomaterials and materials engineering like BIOREMED 2019, Craiova, Romania; NACE European Corrosion Management Virtual Conference 2020; BIOMMEDD 2022, Bucharest, Romania; ROMAT 2022, Bucharest, Romania; BIOREMED 2023, Sibiu, Romania.

In the last 5 years, professor Iulian Antoniac was also involved into the university management as Vice Dean of Faculty Materials Science and Engineering and member of the Senate of University Politehnica of Bucharest (2016-2020), Member of the Board of Doctoral School of Materials Science and Engineering Faculty (2016-2020), and now is the Chief Department (Department Metallic Materials Science & Physical Metallurgy (2020-2024) and member of the Senate of University Politehnica of Bucharest (2020-2024).

In the last 5 years, Professor Iulian Antoniac was also involved into the various scientific associations and organizations: he is currently President of the Romanian Society for Biomaterials (SRB), Former President and permanent Member of Executive Committee of the International Society for Ceramics in Medicine (ISCM), member in European Society for Biomaterials (ERB), member in Tissue Engineering and Regenerative Medicine International Society (TERMIS), member in American Society for Mechanical Engineering (ASME); Evaluation Expert in the Nanomedicine field for EURONANOMED (2019-present), Evaluation Expert in the UEFISCDI Materials Science and Engineering Committee (2019-present).

In the last 5 years, his major scientific contribution was into the field of biodegradable magnesium alloys for medical applications. Even he performs research on Biodegradable Magnesium Alloys for Medical Applications since 2010, for the first time in Romania, in the framework of postdoctoral programme POSDRU/89/1.5/S/54785 Project NANOMAT financed by the European Social Fund – HR Development, at the University Politehnica of Bucharest, the main results appear in the last 5 years when his activity on this topic was concretized by more than 20 ISI publications in journals with higher impact factor, like *Bioactive Materials* (KEAI, IF=18,9, Q1), *Journal of Magnesium and Alloy* (KEAI, IF=17,6, Q1), *Regenerative Biomaterials* (Oxford Univ. Press, IF=6,7, Q1), *Ceramics International* (Elsevier, IF=5,2, Q1), 4 research projects, 2 patents, 16 invited lectures at international events with different lectures about the biodegradable magnesium alloys for medical applications.

Some important steps forward at worldwide level on this topic were:

- innovative chemical compositions for biodegradable magnesium alloys potentially used in medicine.

- contributor on the introduction of the term "Biodegradable metals" into the definitions of biomaterials, together with Franck Witte from Germany and David Williams from U.K., as participant at the meeting *Definitions of Biomaterials for the Twenty-First Century* from Chengdu, China, with 53 participants recognized worldwide as experts on biomaterials.
- novel bioceramics and composite coatings on the surface of biodegradable magnesium alloys in order to reduce their corrosion into the human body.
- innovative orthopedic implant design based on biodegradable magnesium alloys.

Professor Iulian Antoniac have achieved in 2023 the feat of ranking in the ***top 2% of the world's most cited scientists*** according to the latest ELSEVIER report, using the SCOPUS database and h-index, hm-index, adjusted for the number of co-authors, citations in different author positions and a composite index c-score (**position 196049 in the ranking**).

The latest achievement of the Professor Iulian Antoniac was his election as **Fellow of Biomaterials Science and Engineering (FBSE)**, in 2023, which was made by the **International Union of Societies for Biomaterials Science and Engineering (IUSBSE). (http://iusbse.org/aboutus/).** Fellows are recognized for a status of excellent professional standing and high achievements in the field of Biomaterials Science and Engineering. This is the highest honor the global biomaterials community can bestow on outstanding scientists. Iulian Antoniac, at the age of 51, is one of the youngest researchers in the field to be distinguished and is now joining as first Romanian member of this group of less than 500 of the most respected biomaterials scientists world-wide.

7. Curriculum Vitae Iulian Vasile ANTONIAC

- **Current position:** Professor, Dr. Habil. Eng., National University of Science and Technology Politehnica Bucharest, Faculty Materials Science and Engineering, Director of the Department Metallic Materials Science and Engineering, Physical Metallurgy, Team Leader of the Biomaterials Group.

Professor Iulian Vasile ANTONIAC, Dr. Habil., Date of birth: 20 July 1972. Full information available at: https://antoniaciulian.ro/;

https://www.sim.upb.ro//wp-content/uploads/2021/01/pdf/CV/SMMMF/antoniac_i_cv.pdf

- **Education (degrees and diploma)**

• 2015 - Doctor Habil. Degree - PhD supervisor in the field of Materials Engineering – Habilitation thesis: Biomaterials used for orthopaedic implants and their failure analysis.

• 2013 - Postdoctoral Degree in Materials Science and Engineering at University Politehnica of Bucharest (UPB) - Theme: Nanostructured magnesium alloys potentially used for obtaining biodegradable orthopaedic implant.

• 2007 - PhD. Diploma in Materials Engineering at UPB - Doctoral Thesis: Contribution in the field of metallic biomaterials used for femoral component of total hip prosthesis.

• 1998 - Engineer Diploma - at UPB, Materials Science and Engineering Faculty.

- **Specializations**

His knowledge in the field of materials science was improved continuously and strengthened by attending various advanced research training programs performed abroad:

(2004) Metallurgy of metallic biomaterials, University of Geneva & PX Tech Chaux-du-Fonds, Switzerland, Prof.Christian Susz, Dr.Lucien Reclaru;

(2005) Cell-Materials Interactions, University of Porto, Portugal, Prof. Mario Barbosa;

(2006) Training for Biomaterials Integration in Computer – aided Medicine Paradigm, Nova Universidad Lisbon, Portugal;

(2007) Methods for obtaining and characterization of dental alloys, PX Tech, Chaux-du-Fonds, Switzerland, Dr. Lucien Reclaru;

(2008) Biomaterials Intensive Course, Washington University, Seattle, USA, Prof. Buddy Ratner;

(2009) Magnesium alloys: obtaining, processing and characterization, Ben-Gurion University of the Negev and Dead Sea Magnesium Ltd., Beer-Sheeva, Israel, Prof. Dan Eliezer;

(2010) Biomaterials Characterization Methods, Technion - Israel Institute of Technology, Haifa, Israel, Prof. Elazar Gutmanas.

- **Information about the professional experience and jobs**:

University Politehnica of Bucharest (the former name of the National University of Science and Technology POLITEHNICA Bucharest), Faculty Materials Science and Engineering; Didactic activity - **Professor**, Department Metallic Materials Science and Engineering, Physical Metallurgy (since Oct. 2015), **Associate Professor** (Oct. 2013 – Sep. 2015); **Lecturer** (Oct. 2002 – Sep. 2013); Researcher (June 1998 – Mar. 2000); Member of the University Senate (2016-2024); Member of the SIM Faculty Professorial Council (2016-2024); Vice Dean of the SIM Faculty (2016-2020); Member of the Doctoral School SIM Council (2016-2020); Member of the University Senate (2016-2024).

He was an active person on biomaterials scientific community since 2002, when translate the Williams Dictionary on Biomaterials in Romanian and act as founding member and secretary of the Romanian Society for Biomaterials. He works on biomaterials area for more than 20 years, expanding his area of activity from classical metallic biomaterials to bioceramic coatings, from bioceramics to composite materials, from implant design to scaffolds used in tissue regeneration. At this moment, his research group is one professional that assure reliable analysis of biomaterials, medical devices, as well as failed implants in clinical practice, in collaboration with surgeons from orthopaedic, dentistry, neurosurgery and cardiovascular field.

- **Papers as main author or co-author classified with the article document type, published in Web of Science JCR quartile Q1 indexed journals according to AIS): 39 papers.**
- **Ranked in the "World's Top 2% Scientists" for 2023**, according to the latest ELSEVIER report, using the SCOPUS database and h-index, hm-index, adjusted for the number of co-authors, citations in different author positions and a composite index c-score (**position 196049**).
- **National and international research projects, won by competition, with a value more than 100.000 EUR and team members, as project director: 4**
- *Delivering Nanotechnologies, Advanced Materials and Production to REGional Manufacturing*, Interreg Europe Program, Project Code PGI00023 -NMP-REG, (2016-2021). Contract value: 195.075 EURO; *Biogenic Inks combining marine collagen and ionic-doped calcium phosphate for bone tissue engineering*, PC7 Program, ERA-NET Scheme, Contract number 70, (2017-2020), Contract value: 198.636 EURO; *Meta-structures by composite coatings on biodegradable implants made by Mg-Ca alloys for bone regeneration (MAGICBONE)*, PN III, Exploratory Research Projects-contract PCE no.100 (2021-2023), Contract value: 1.198.032 lei (239.606 EURO); *Obtaining and expertization of new biomaterials for medical devices*

(MedicalMetMat), PN III–Contract 60PCCDI (2018-2020), Contract value: 5.273.400 lei (1.054.680 EURO). Also, he collaborates with different industrial partners in the framework of research projects (with companies like Medical Ortovit, Hofigal, IEK Group, Top Metrology, Medist Imaging, Enlife, Vodimedicor, Tenaris). Based on this, **in the last 5 years** he was able to establish and coordinate two new laboratories (*Biomaterials Laboratory*, and *TEMA-Testing and Expertization of Advanced Materials*), equipped with modern tools like 3D printer, profilometer, durimeter, AFM microscope, contact angle, FTIR spectrometer, LM microscope, tack tester, stereomicroscope, equipment's for metallographic sample preparation, corrosion and biodegradation testing).

- **Invited Professor at prestigious universities: 5**

– March 2018, Ben-Gurion University of the Negev, Faculty of Engineering Sciences, Department of Materials Engineering, Israel, at the invitation of Prof. Dan Eliezer (E-mail: deliezer@bgu.ac.il).

– March-April 2019, Sichuan University, Centre for Biomaterials, Chengdu, China at the invitation of Prof. Xingdong Zhang (E-mail: zhangxd@scu.edu.cn).

– May 2020, University of Minho, I3Bs, Guimaraes, Portugal, at the invitation of Prof. Miguel Oliveira (E-mail: miguel.oliveira@dep.uminho.pt).

– May 2015, University of Rome Nicolo Cusano, Rome, Italy, at the invitation of Prof. Ilaria Cacciotti (E-mail: ilaria.cacciotti@unicusano.it).

– April 2022, Istanbul Technical University, Istanbul, Turkiye, at the invitation of Prof. Gultekin Goller (E-mail: goller@itu.edu.tr).

- **Editorial activity**:

Editor in Chief for *Materials Science Forum*, ISSN 0255-5476, Publisher: TRANS TECH PUBLICATIONS LTD, (**https://www.scientific.net/MSF/Editors**)

Abstracted/Indexed in: SCOPUS, REAXYS, Chimica, Inspec (IET, Institution of Engineering Technology), Chemical Abstracts Service (CAS), Google Scholar, GeoRef, NASA Astrophysics Data System (ADS), INIS Atomindex (International Nuclear Information System), ProQuest, Ulrichsweb EBSCOhost Research Databases, Zetoc, EVISA, Index Copernicus Journals Master List, WorldCat (OCLC), CEABA, Polymer Library, ESTEC, StahlLit.

Journal Impact Factor™ 0.399, JRC Category: Materials Science, Multidisciplinary, Source: Journal Citation Reports 2005.

Editorial Board Member (according to the ISI Web of Science – editorial Board Membership https://www.webofscience.com/wos/author/record/218597): *Materials Science Forum** (Editor in Chief), *Bioactive Materials* (KEAI, IF=18,9, Q1), Bioceramics, Biomanufacturing Reviews,

Congress ESB, Heliyon, *Journal of Adhesion Science and Technology* (Taylor & Francis, IF=2,3, Q3), Scientific Bulletin of Valahia University-Materials and Mechanics, *Regenerative Biomaterials* (Oxford Univ. Press, IF=6,7, Q1), *Materials* (MDPI, IF=3,4, Q2), World Biomaterials Congress.

Editor for Recent advances in bioceramics for health, in Frontiers in Bioengineering and Biotechnology (Frontiers Media, IF=5,7 / Q1).

Editor for Adhesion aspects in biomaterials and medical devices, in Journal of Adhesion Science and Technology (Taylor & Francis, IF=2,3 / Q3).

Editor for Advanced Eco-Technologies and Materials for Environmental and Health Application, in Environmental Engineering and Management Journal (Gh.Asachi Technical Univ Iasi, IF=1,1 / Q4).

Editor for Biomaterials Performance in Clinical Cases and Failure Analysis of Implants in Materials (MDPI, IF=3,4 / Q2).

Editor for Processing, Characterization and Testing of Alloys and Metal Matrix Composites for Biomedical Applications in Metals (MDPI, IF=2,9 / Q2).

Editor for State-of-the-Art Materials Science and Engineering in Romania 2022 in Materials (MDPI, IF=3,4 / Q2).

Editor for State-of-the-Art Materials Science and Engineering in Romania 2023 in Materials (MDPI, IF=3,4 / Q2).

- **Reviewer for more than 30 ISI international journals (according to the ISI Web of Science–https://www.webofscience.com/wos/author/record/218597:** Bioactive Materials, Materials & Design, Ceramic International, Journal of Materials Science:Materials in Medicine, Bioengineering, European Polymer Journal, Materials Chemistry and Physics, Nanomaterials, Biofabrication, Materials, Coatings, Biomedical Materials, Pharmaceutics, Journal of Bioactive and Compatible Polymers, International Journal of Adhesion and Adhesives, Journal of Adhesion Science and Technology; Saudi Journal of Biological Sciences, Biomedical Physics & Engineering Express, Materials Research Express, Journal of Biomedical Materials Research Part A, Crystals, Diagnostics, International Journal of Applied Ceramic Technology, Applied Physics A, Applied Sciences, International Journal of Molecular Sciences, Biomolecules, Journal of the American Ceramic Society, Polymers, Pharmaceuticals, Advances in Polymer Technology, Advanced Engineering Materials.
- **In the last 5 years, Professor Iulian Vasile ANTONIAC published 96 ISI papers, with 57 ISI papers in Q1/Q2 and 19 papers as principal author.**
- **Sum of individual AIS in last 5 years – 6.2272**

- **Papers as main author or co-author classified with the article document type, published in Web of Science JCR quartile Q1 indexed journals according to AIS): 39 papers.**

1. Petrova A; Mamin G; Gnezdilov O; Fadeeva I; Antonova O; Forysenkova A; **Antoniac IV**; Rau JV; Gafurov M; Magnetic Resonance-Based Analytical Tools to Study Polyvinylpyrrolidone-Hydroxyapatite Composites, POLYMERS, Volume 15, Issue 22, 2023, DOI10.3390/polym15224445, Accession Number WOS:001120790700001, FI = 5 (Q1), ***AIS = 0.604 (Q1).***

2. Bololoi AE; Geambazu LE; **Antoniac IV**; Bololoi RV; Manea CA; Cojocaru VD; Patroi D; Solid-State Processing of CoCrMoNbTi High-Entropy Alloy for Biomedical Applications, MATERIALS, Volume 16, Issue 19, 2023, DOI10.3390/ma16196520, Accession Number WOS:001089169100001, FI = 3.4 (Q2), ***AIS = 0.510 (Q1 - METALLURGY & METALLURGICAL ENGINEERING – SCIE.)***

3. Dawod N; Miculescu M; **Antoniac IV**; Miculescu F; Agop-Forna D; Metal-Ceramic Compatibility in Dental Restorations According to the Metallic Component Manufacturing Procedure, MATERIALS, Volume 16, Issue 16, 2023, DOI10.3390/ma16165556, Accession Number WOS:001057632700001, FI = 3.4 (Q2), ***AIS = 0.510 (Q1 - METALLURGY & METALLURGICAL ENGINEERING - SCIE).***

4. Bita T; Antoniac A; Ciuca I; Miculescu M; Cotrut CM; Paltanea G; Dura H; Corneschi I; **Antoniac I***; Carstoc ID; Bodog AD; Effect of Fluoride Coatings on the Corrosion Behavior of Mg-Zn-Ca-Mn Alloys for Medical Application, MATERIALS, Volume 16, Issue 13, 2023, DOI10.3390/ma16134508, Accession Number WOS:001031202600001, FI = 3.4 (Q2), ***AIS = 0.510 (Q1 - METALLURGY & METALLURGICAL ENGINEERING - SCIE).***

5. Dragomir L; Antoniac A; Manescu V; Robu A; Dinu M; Pana I; Cotrut CM; Kamel E; **Antoniac I**; Rau JV; Vladescu A; Preparation and characterization of hydroxyapatite coating by magnetron sputtering on Mg-Zn-Ag alloys for orthopaedic trauma implants, CERAMICS INTERNATIONAL, Volume 49, Issue 16, Page 26274-26288, 2023, DOI10.1016/j.ceramint.2023.05.116, Accession Number WOS:001027803600001, FI = 5.2 (Q1), ***AIS = 0.588 (Q1).***

6. Forysenkova AA; Fadeeva IV; Deyneko DV; Gosteva AN; Mamin GV; Shurtakova DV; Davydova GA; Yankova VG; **Antoniac IV**; Rau JV; Polyvinylpyrrolidone-Alginate-Carbonate Hydroxyapatite Porous Composites for Dental Applications, MATERIALS, Volume 16, Issue 12, 2023, DOI 10.3390/ma16124478, Accession Number WOS:001014542200001, FI = 3.4 (Q2), ***AIS = 0.510 (Q1 - METALLURGY & METALLURGICAL ENGINEERING - SCIE).***

7. Fadeeva IV; Deyneko DV; Knotko AV; Olkhov AA; Slukin PV; Davydova GA; Trubitsyna TA; Preobrazhenskiy II; Gosteva AN; **Antoniac IV**; Rau JV; Antibacterial Composite Material Based on Polyhydroxybutyrate and Zn-Doped Brushite Cement, POLYMERS, Volume 15, Issue 9, 2023, DOI10.3390/polym15092106, Accession Number WOS:000987404000001, FI = 5 (Q1), ***AIS = 0.604 (Q1).***

8. Gharbi A; Oudadesse H; Ashammakhi N; Cheikhrouhou-Koubaa W; Blaeser A; Rau JV; **Antoniac I**; Derbel N; El Feki H; Thermodynamic behavior of bioactive glass in relationship with high fluorine content, CERAMICS INTERNATIONAL, Volume 49, Issue 11, Page 18238-18247, 2023, DOI10.1016/j.ceramint.2023.02.194, Accession Number WOS:000989385000001, FI = 5.2 (Q1), ***AIS = 0.588 (Q1).***

9. Streza A; Antoniac A; Manescu V; Paltanea G; Robu A; Dura H; Verestiuc L; Stanica E; Voicu SI; **Antoniac I***; Cristea MB; Dragomir BR; Rau JV; Manolea MM; Effect of Filler Types on Cellulose-Acetate-Based Composite Used as Coatings for Biodegradable Magnesium Implants for Trauma, MATERIALS, Volume 16, Issue 2, 2023, DOI 10.3390/ma16020554, Accession Number WOS: 000928381600001, FI = 3.4 (Q2), ***AIS = 0.510 (Q1 - METALLURGY & METALLURGICAL ENGINEERING - SCIE).***

10. Chen HW; Yuan B; Zhao R; Yang X; Xiao ZW; Aurora A; Iulia BA; Zhu XD; **Iulian AV***; Zhang XD; Evaluation on the corrosion resistance, antibacterial property and osteogenic activity of biodegradable Mg-Ca and Mg-Ca-Zn-Ag alloys, JOURNAL OF MAGNESIUM AND ALLOYS, Volume 10, Issue 12, 3380-3396, 2022, DOI 10.1016/j.jma.2021.05.013, Accession NumberWOS:000911252800006, **FI = 17.6 (Q1),** ***AIS = 2.012 (Q1).***

11. Antoniac I; Manescu V; Paltanea G; Antoniac A; Nemoianu IV; Petrescu MI; Dura H; Bodog AD; Additive Manufactured Magnesium-Based Scaffolds for Tissue Engineering, MATERIALS, Volume 15, Issue 23, 2022, DOI10.3390/ma15238693, Accession Number WOS:000897445600001, FI = 3.4 (Q2), ***AIS = 0.510 (Q1 - METALLURGY & METALLURGICAL ENGINEERING - SCIE).***

12. Yuan B; Chen HW; Zhao R; Deng XG; Chen G; Yang X; Xiao ZW; Aurora A; Iulia BA; Zhang K; Zhu XD; **Iulian AV***; Hai S; Zhang, XD; Construction of a magnesium hydroxide/graphene oxide/hydroxyapatite composite coating on Mg-Ca-Zn-Ag alloy to inhibit bacterial infection and promote bone regeneration, BIOACTIVE MATERIALS, Volume 18, 354-367, 2022, DOI 10.1016/j.bioactmat.2024.02.030, Accession Number WOS:000788641300001, **FI = 18.9 (Q1),** ***AIS = 2.593 (Q1).***

13. Manescu V; **Antoniac I**; Antoniac A; Paltanea G; Miculescu M; Bita AI; Laptoiu S; Niculescu M; Stere A; Paun C; Cristea MB; Failure Analysis of Ultra-High Molecular Weight Polyethylene Tibial Insert in Total Knee Arthroplasty, MATERIALS, Volume 15, Issue 20, 2022, DOI 10.3390/ma15207102, Accession Number WOS:000872807700001, FI = 3.4 (Q2), ***AIS = 0.510 (Q1 - METALLURGY & METALLURGICAL ENGINEERING - SCIE).***

14. Gheorghita D; Grosu E; Robu A; Ditu LM; Deleanu IM; Pircalabioru GG; Raiciu AD; Bita AI; Antoniac A; **Antoniac VI**; Essential Oils as Antimicrobial Active Substances in Wound Dressings, MATERIALS, Volume 15, Issue 19, 2022, DOI 10.3390/ma15196923, Accession Number WOS:000866914900001, FI = 3.4 (Q2), ***AIS = 0.510 (Q1 - METALLURGY & METALLURGICAL ENGINEERING - SCIE).***

15. Robu A; Ciocoiu R; Antoniac A; **Antoniac I**; Raiciu AD; Dura H; Forna N; Cristea MB; Carstoc ID; Bone Cements Used for Hip Prosthesis Fixation: The Influence of the Handling Procedures on Functional Properties Observed during In Vitro Study, MATERIALS, Volume 15, Issue 9, 2022, DOI 10.3390/ma15092967, Accession Number WOS:000796111800001, FI = 3.4 (Q2), ***AIS = 0.510 (Q1 - METALLURGY & METALLURGICAL ENGINEERING - SCIE).***

16. Bita AI; **Antoniac I**; Miculescu M; Stan GE; Leonat L; Antoniac A; Constantin B; Forna N; Electrochemical and In Vitro Biological Evaluation of Bio-Active Coatings Deposited by Magnetron Sputtering onto Biocompatible Mg-0 .8Ca Alloy, MATERIALS, Volume 15, Issue 9, 2022, DOI 10.3390/ma15093100, Accession Number WOS:000795475600001, FI = 3.4 (Q2), ***AIS = 0.510 (Q1 - METALLURGY & METALLURGICAL ENGINEERING - SCIE).***

17. Moldovan H; **Antoniac I**; Gheorghita D; Safta MS; Preda S; Broasca M; Badila E; Fronea O; Scafa-Udriste A; Cacoveanu M; Molnar A; Costache VS; Zaharia O; Biomaterials as Haemostatic Agents in Cardiovascular Surgery: Review of Current Situation and Future Trends, POLYMERS, Volume 14, Issue 6, 2022, DOI 10.3390/polym14061189, Accession Number WOS:000776311300001, FI = 5 (Q1), ***AIS = 0.604 (Q1).***

18. Antoniac I; Miculescu M; Manescu V; Stere A; Quan PH; Paltanea G; Robu A; Earar K; Magnesium-Based Alloys Used in Orthopedic Surgery, MATERIALS, Volume 15, Issue 3, 2022, DOI 10.3390/ma15031148, Accession Number WOS:000756544000001, FI = 3.4 (Q2), ***AIS = 0.510 (Q1 - METALLURGY & METALLURGICAL ENGINEERING - SCIE).***

19. Quan PH; **Antoniac I**; Miculescu F; Antoniac A; Manescu V; Robu A; Bita AI; Miculescu M; Saceleanu A; Bodog AD; Saceleanu V; Fluoride Treatment and In Vitro Corrosion Behavior of Mg-Nd-Y-Zn-Zr Alloys Type, MATERIALS, Volume 15, Issue 2, 2022, DOI 10.3390/ma15020566,

Accession Number WOS:000757583600001, FI = 3.4 (Q2), ***AIS = 0.510 (Q1 - METALLURGY & METALLURGICAL ENGINEERING - SCIE).***

20. Robu A; Antoniac A; Grosu E; Vasile E; Raiciu AD; Iordache F; **Antoniac VI**; Rau JV; Yankova VG; Ditu LM; Saceleanu V; Additives Imparting Antimicrobial Properties to Acrylic Bone Cements, MATERIALS, Volume 14, Issue 22, 2021, DOI 10.3390/ma14227031, Accession Number WOS:000727445400001, FI = 3.4 (Q2), ***AIS = 0.510 (Q1 - METALLURGY & METALLURGICAL ENGINEERING - SCIE).***

21. Manescu V; Paltanea G; **Antoniac I**; Vasilescu M; Magnetic Nanoparticles Used in Oncology, MATERIALS, Volume 14, Issue 20, Number article 5948, 2021, DOI: 10.3390/ma14205948, Accession Number WOS:000716317000001, FI = 3.4 (Q2), ***AIS = 0.510 (Q1 - METALLURGY & METALLURGICAL ENGINEERING - SCIE).***

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23. Chirca O; Biclesanu C; Florescu A; Stoia DI; Pangica AM; Burcea A; Vasilescu M; **Antoniac IV**; Adhesive-Ceramic Interface Behavior in Dental Restorations. FEM Study and SEM Investigation, MATERIALS, Volume 14, Issue 17, Number article 5048, 2021, DOI: 10.3390/ma14175048, Accession Number WOS:000694396800001, FI = 3,4 (Q2), ***AIS = 0.510 (Q1 - METALLURGY & METALLURGICAL ENGINEERING - SCIE).***

24. Antoniac I; Adam R; Bita A; Miculescu M; Trante O; Petrescu IM; Pogarasteanu M; Comparative Assessment of In Vitro and In Vivo Biodegradation of Mg-1Ca Magnesium Alloys for Orthopedic Applications, MATERIALS, Volume 14, Issue 1, Number article 84, 2021, DOI: 10.3390/ma14010084, Accession Number WOS:000606152800001, FI = 3.4 (Q2), ***AIS = 0.510 (Q1 - METALLURGY & METALLURGICAL ENGINEERING - SCIE).***

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26. Fadeeva IV; Kalita VI; Komlev DI; Radiuk AA; Fomin AS; Davidova GA; Fursova NK; Murzakhanov FF; Gafurov MR; Fosca M; **Antoniac IV**; Barinov SM; Rau JV; In Vitro Properties of Manganese-Substituted Tricalcium Phosphate Coatings for Titanium Biomedical Implants Deposited by Arc Plasma, MATERIALS, Volume 13, Issue 19, Article Number 4411, 2020, Accession Number WOS:000586426000001, FI = 3.4 (Q2), ***AIS = 0.510 (Q1 - METALLURGY & METALLURGICAL ENGINEERING - SCIE).***

27. Istrate B; Rau JV; Munteanu C; **Antoniac IV**; Saceleanu V; Properties and in vitro assessment of ZrO^2-based coatings obtained by atmospheric plasma jet spraying on biodegradable Mg-Ca and Mg-Ca-Zr alloys, CERAMICS INTERNATIONAL, Volume 46, Issue 10, 15897-15906, 2020, DOI: 10.1016/j.ceramint.2020.03.138, Accession Number WOS:000533512000020, FI = 5.2 (Q1), ***AIS = 0.588 (Q1).***

28. Costache VS; Meekel JP; Costache A; Melnic T; Solomon C; Chitic AM; Bucurenciu C; Moldovan H; **Antoniac I**; Candea G; Yeung KK; Geometric Analysis of Type B Aortic Dissections Shows Aortic Remodeling After Intervention Using Multilayer Stents, MATERIALS, Volume 13, Issue 10, Article Number 2274, 2020, DOI: 10.3390/ma13102274, Accession Number WOS:000539277000066, FI = 3.4 (Q2), ***AIS = 0.510 (Q1 - METALLURGY & METALLURGICAL ENGINEERING - SCIE).***

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30. Nica M; Cretu B; Ene D; **Antoniac I**; Gheorghita D; Ene R: Failure Analysis of Retrieved Osteosynthesis Implants, MATERIALS, Volume 13, Issue 5, Article Number 1201, 2020, DOI: 10.3390/ma13051201, Accession Number WOS:000524060200179, FI = 3.4 (Q2), ***AIS = 0.510 (Q1 - METALLURGY & METALLURGICAL ENGINEERING - SCIE).***

31. Antoniac I; Miculescu F; Cotrut C; Ficai A ; Rau JV; Grosu E; Antoniac A; Tecu C; Cristescu I; Controlling the Degradation Rate of Biodegradable Mg-Zn-Mn Alloys for Orthopedic Applications by Electrophoretic Deposition of Hydroxyapatite Coating, MATERIALS, Volume 13, Issue 2, Article Number 263, 2020, DOI: 10.3390/ma13020263, Accession Number

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33. Gheorghe D; Pencea I; **Antoniac IV**; Turcu RN; Investigation of the Microstructure, Hardness and Corrosion Resistance of a New 58Ag24Pd11Cu2Au2Zn1.5In1.5Sn Dental Alloy, MATERIALS, Volume 12, Issue 24, 2019, DOI10.3390/ma12244199, Accession Number WOS:000507308200177, FI = 3.4 (Q2), ***AIS = 0.510 (Q1 - METALLURGY & METALLURGICAL ENGINEERING - SCIE).***

34. Dascalu CA; Maidaniuc A; Pandele AM; Voicu SI; Machedon-Pisu T; Stan GE; Cimpean A; Mitran V; **Antoniac IV**; Miculescu F; Synthesis and characterization of biocompatible polymer-ceramic film structures as favorable interface in guided bone regeneration, APPLIED SURFACE SCIENCE, Volume 494, 335-352, 2019, DOI: 10.1016/j.apsusc.2019.07.098, Accession Number WOS: 000487838900040, **FI = 6.7 (Q1),** ***AIS = 0.865 (Q1 - MATERIALS SCIENCE, COATINGS & FILMS - SCIE).***

35. Antoniac IV; Stoia DI; Ghiban B; Tecu C; Miculescu F; Vigaru C; Saceleanu V; Failure Analysis of a Humeral Shaft Locking Compression Plate Surface Investigation and Simulation by Finite Element Method, MATERIALS, Volume 12, Issue 7, 1-18, Article Number 1128, 2019, DOI: 10.3390/ma12071128, Accession Number WOS: 000465500700127, FI = 3.4 (Q2), ***AIS = 0.510 (Q1 - METALLURGY & METALLURGICAL ENGINEERING - SCIE).***

36. Cojocaru FD; Balan V; Popa M; Lobiuc A; Antoniac A; **Antoniac IV**; Verestiuc L; Biopolymers - Calcium phosphates composites with inclusions of magnetic nanoparticles for bone tissue engineering, INTERNATIONAL JOURNAL OF BIOLOGICAL MACROMOLECULES, Volume 125, 612-620, 2019, DOI: 10.1016/j.ijbiomac.2018.12.083, Accession Number WOS: 000458222000067, FI = 8.2 (Q1), ***AIS = 0.918 (Q1 - CHEMISTRY, APPLIED - SCIE).***

37. Antoniac I; Popescu D; Zapciu A; Antoniac A; Miculescu F; Moldovan H; Magnesium Filled Polylactic Acid (PLA) Material for Filament Based 3D Printing, MATERIALS, Volume 12, Issue 5, 1-13, Article Number 719, 2019, DOI: 10.3390/ma12050719, Accession Number WOS:

000462543700035, FI = 3.4 (Q2), ***AIS = 0.510 (Q1 - METALLURGY & METALLURGICAL ENGINEERING - SCIE).***

38. Mocanu AC; Stan GE; Maidaniuc A; Miculescu M; **Antoniac IV**; Ciocoiu RC; Voicu SI; Mitran V; Cimpean A; Miculescu F; Naturally-Derived Biphasic Calcium Phosphates through Increased Phosphorus-Based Reagent Amounts for Biomedical Applications, MATERIALS, Volume 12, Issue 3, 1-17, Article Number 381, 2019, DOI: 10.3390/ma12030381, Accession Number WOS: 000460768000050, FI = 3.4 (Q2), ***AIS = 0.510 (Q1 - METALLURGY & METALLURGICAL ENGINEERING - SCIE).***

39. Buzatu M; Geanta V; Stefanoiu R; Butu M; Petrescu MI; Buzatu M; **Antoniac I**; Iacob G; Niculescu F; Ghica SI; Moldovan H; Investigations into Ti-15Mo-W alloys developed for medical applications, MATERIALS, Volume 12, Issue 1, 1-10, Article Number 147, 2019, DOI: 10.3390/ma12010147, Accession Number WOS: 000456410200147, FI = 3.4 (Q2), ***AIS = 0.510 (Q1 - METALLURGY & METALLURGICAL ENGINEERING - SCIE).***

- **Patents: 10 (4 in the last 5 years)**
- **Books and books chapters: 22**

Relevant books:

- Antoniac Iulian, **Bioceramics and biocomposites: from research to clinical practice**, Publisher John Wiley & Sons, Inc., Hoboken, New Jersey, **373 pages**, ISBN 9781119372134, 2019.
- Antoniac Iulian, **Handbook of Bioceramics and Biocomposites**, Publisher Springer International Publishing, Cham, **1386 pages**, ISBN 978-3-319-12459-9, 2016.
- Antoniac Iulian, **Biologically Responsive Biomaterials for Tissue Engineering**, Publisher Springer Science+Business Media, New York, in Springer Series in Biomaterials Science and Engineering, **254 pages**, ISBN 978-1-4899-9256-7, 2013.

In the last 5 years, the candidate demonstrated exceptional achievements, evidence of creative independent thinking, in the field of science, related to the biodegradable magnesium alloys for medical applications. He was nominee in 2023 for the award **International Magnesium Award for Distinguished Scientists** given by the **International Magnesium Science & Technology** for researchers under the age of 60 who have made significant and innovative contributions to research or industrialization of magnesium and magnesium alloys, based on his contributions: more than 20 ISI publications in journals with higher impact factor, like *Bioactive Materials* (KEAI, IF=18,9, Q1), *Journal of Magnesium and Alloy* (KEAI, IF=17,6, Q1), *Regenerative Biomaterials* (Oxford Univ.

Press, IF=6,7, Q1), *Ceramics International* (Elsevier, IF=5,2, Q1), 4 research projects, 2 patents, 16 invited lectures at international events with different lectures about the biodegradable magnesium alloys for medical applications. Also, some important steps forward at worldwide level on this topic were proposed by the candidate: innovative chemical compositions for biodegradable magnesium alloys potentially used in medicine; novel bioceramics and composite coatings on the surface of biodegradable magnesium alloys in order to reduce their corrosion into the human body; innovative orthopaedic implant design based on biodegradable magnesium alloys.

- **H-index: 34 on Google Scholar (3826 citations), 32 on Scopus (3056 citations), 29 on ISI Web of Science (2500 times cited).**
- **Awards**: **Daniel Bunea Award**, Romanian Society for Biomaterials, Romania (2005); **SRB-Excellence Award**, Romanian Society for Biomaterials, Romania (2012); **BIOCERAMICS 27 Award**, ISCM, Indonesia (2015), **IMMC Award**, UCTEA Chamber of Metallurgical and Materials Engineers, Türkiye (2016), **ISCM-Excellence Award**, ISCM, U.S.A. (2016), **BIOMAH Award**, CNR, Italy (2022), **MTM Award**, Istanbul Technical University, Türkiye (2023), many awards for presentations at conferences and for patents at international innovation fairs.
- **Oral communications**: >200 (***62 invited lectures as plenary/keynote speaker***) on all continents (in Australia, Austria, Belgium, Brazil, China, Croatia, Czechia, Denmark, Egypt, Finland, France, Germany, Greece, Iceland, Indonesia, Ireland, Israel, Italy, Japan, Latvia, Malta, Montenegro, Netherlands, Poland, Portugal, Romania, Serbia, South Korea, Spain, Switzerland, Tunisia, Turkiye, United Kingdom, United States).
- **Member of Ph.D. Thesis defense committees** in Romania (31 thesis at various universities - National University of Science and Technology Politehnica Bucharest, Technical University of Cluj-Napoca, Technical University Gheorghe Asachi Iasi, University of Medicine and Pharmacy Carol Davila Bucharest, University Titu Maiorescu Bucharest, University of Medicine and Pharmacy Victor Babes Timisoara, University of Medicine and Pharmacy Gr.T.Popa Iasi), Italy (2 thesis, University of Genoa, 2013), Latvia (1 thesis, Riga Technical University, 2018), Türkiye (1 thesis, Istanbul Technical University, 2020), Russia (1 thesis, Skoltech-Skolkovo Institute of Science and Technology, 2023).
- **Affiliation at Professional Societies**:

Romanian Society for Biomaterials-SRB (***president***), International Society for Ceramics in Medicine-ISCM (***Board Members and Past President***), European Society for Biomaterials-ESB (***member of the Affiliated Societies Council***), Tissue Engineering and Regenerative Medicine International

Society-TERMIS, American Society for Mechanical Engineering-ASME, Romanian Electron Microscopy Society-REMS.

- **"Fellow of Biomaterials Science and Engineering (FBSE)",** the highest honor the global biomaterials community can bestow on outstanding scientists (less that 500 of the most respected biomaterials scientists world-wide).
- **Member of the National Council for Attesting Titles, Diplomas and Certificates (CNATDCU), Materials Engineering Committee (2020-2024)**
- **Member of the Romanian Academy of Scientists**, section Technical Sciences.
- **Conference president and main organizer of some important scientific conference** in the field of biomaterials and materials engineering like BIOREMED 2019, Craiova, Romania; NACE European Corrosion Management Virtual Conference 2020; BIOMMEDD 2022, Bucharest, Romania; ROMAT 2022, Bucharest, Romania; BIOREMED 2023, Sibiu, Romania. During the conference BIOMMEDD 2022, it was organized one of the very important meeting between representative Romanian government (Ministry of Research, Ministry of Education, Ministry of Health), representative Romanian government and worldwide representative of the scientist from biomaterials and medical devices (USA, Switzerland, Italy, Greece, Korea, Türkiye, France, Germany) at the Palace of Parliament, an important step forward to develop some new programs in order to increase the Romanian contribution to the field of biomaterials and medical devices.
- **He creates and manages his own biomaterials group that now have 10 permanent members and more than 20 PhD and master students**, which perform an independent research activity into dedicated laboratories for the characterization and testing various biomaterials, medical devices & surgical instruments grouped into the ***Biomaterials Research Center (BIOMAT)*** from Faculty Materials Science and Engineering, National University of Science and Technology POLITEHNICA Bucharest. Under his coordination, 11 PhD students finished their doctoral studies and published their research in high-ranking journals as first authors (like Robu Alina, Dragomir Lavinia, Streza Alexandru, Gheorghita Daniela, Dawod Nazem). The main principle for the group related to each research project was to perform research at high level, and dissemination of the results obtained by conference presentations and publications in good journals. Also, he organizes different small events for young researchers like summer schools and workshops.

Prof.univ.habil.dr.ing. Iulian Vasile Antoniac

30.01.2024

8. List of publications of the candidate Iulian Vasile ANTONIAC

- In the last 5 years, 96 ISI papers, with 57 ISI papers in Q1/Q2 and 19 papers as principal author **(4 publications are in the "Q1- rank 1" journals; 3 publications are in journals with an impact factor more than 17).**
- https://www.webofscience.com/wos/author/record/218597,53711342
- **Sum of individual AIS in last 5 years – 6.2272**
- **Relevant 10 publications are marked in blue.**

1. Manescu, V; **Antoniac, I;** Antoniac, A; Laptoiu, D; Paltanea, G; Ciocoiu, R; Nemoianu, IV; Gruionu, LG; Dura, H; Bone Regeneration Induced by Patient-Adapted Mg Alloy-Based Scaffolds for Bone Defects: Present and Future Perspectives, BIOMIMETICS, Volume 8, Issue 8, 2023, DOI 10.3390/biomimetics8080618, WOS:001131224100001, FI = 4.5 (Q1), AIS = 0.652 (Q2 - ENGINEERING, MULTIDISCIPLINARY - SCIE).

2. Petrova A; Mamin G; Gnezdilov O; Fadeeva I; Antonova O; Forysenkova A; **Antoniac IV**; Rau JV; Gafurov M; Magnetic Resonance-Based Analytical Tools to Study Polyvinylpyrrolidone-Hydroxyapatite Composites, POLYMERS, Volume 15, Issue 22, 2023, DOI 10.3390/polym15224445, Accession Number WOS:001120790700001, FI = 5 (Q1), ***AIS = 0.604 (Q1).***

3. Streza A; Antoniac A; Manescu V; Ciocoiu R; Cotrut CM; Miculescu M; Miculescu F; **Antoniac I**; Fosca M; Rau JV; Dura H; In Vitro Studies Regarding the Effect of Cellulose Acetate-Based Composite Coatings on the Functional Properties of the Biodegradable Mg3Nd Alloys, BIOMIMETICS, Volume 8, Issue 7, 2023, DOI 10.3390/biomimetics8070526, Accession Number WOS:001120752900001, FI = 4.5 (Q1), AIS = 0.652 (Q2 - ENGINEERING, MULTIDISCIPLINARY - SCIE).

4. Gheorghita, D; Antoniac, I; Moldovan, H; Antoniac, A; Grosu, E; Motelica, L; Ficai, A; Oprea, O; Vasile, E; Ditu, LM; Raiciu, AD; Influence of Lavender Essential Oil on the Physical and Antibacterial Properties of Chitosan Sponge for Hemostatic Applications, INTERNATIONAL JOURNAL OF MOLECULAR SCIENCES, Volume 24, Issue 22, 2023, DOI 10.3390/ijms242216312, Accession Number WOS:001119878000001, FI = 5,6 (Q1), AIS = 1.028 (Q2).

5. Robu M; Radulescu B; Margarint I; Stiru O; **Antoniac I**; Gheorghita D; Voica C; Nica C; Cacoveanu M; Iliuta L; Iliescu VA; Moldovan H; Surgical Strategy for Sternal Closure in Patients with Surgical Myocardial Revascularization Using Mammary Arteries, JOURNAL OF

CARDIOVASCULAR DEVELOPMENT AND DISEASE, Volume 10, Issue 11, 2023, DOI 10.3390/jcdd10110457, Accession Number WOS:001113695400001, FI = 2,4 (Q3), AIS = 0.716 (Q3).

6. Izci A; Yavas B; **Antoniac I**; Goller G; Investigation of the Effects of Spark Plasma Sintering Parameters on Equiatomic CoCrFeNiMo High Entropy Alloy, JOURNAL OF MATERIALS ENGINEERING AND PERFORMANCE, Nov.2023, DOI 10.1007/s11665-023-08872-8, Accession Number WOS:001096900400001, FI = 2.3 (Q3), AIS = 0.311 (Q4).

7. Bololoi AE; Geambazu LE; **Antoniac IV**; Bololoi RV; Manea CA; Cojocaru VD; Patroi D; Solid-State Processing of CoCrMoNbTi High-Entropy Alloy for Biomedical Applications, MATERIALS, Volume 16 Issue 19, 2023, DOI 10.3390/ma16196520, Accession Number WOS:001089169100001, FI = 3.4 (Q2), ***AIS = 0.510 (Q1 - METALLURGY & METALLURGICAL ENGINEERING - SCIE).***

8. Dawod N; Miculescu M; **Antoniac IV**; Miculescu F; Agop-Forna D; Metal-Ceramic Compatibility in Dental Restorations According to the Metallic Component Manufacturing Procedure, MATERIALS, Volume 16, Issue 16, 2023, DOI 10.3390/ma16165556, Accession Number WOS:001057632700001, FI = 3.4 (Q2), ***AIS = 0.510 (Q1 - METALLURGY & METALLURGICAL ENGINEERING - SCIE).***

9. Serboiu CS; Alius C; Dumitru A; Tapoi D; Costache M; Nica AE; Alexandra-Ana M; **Antoniac I**; Gradinaru S; Gallbladder Pancreatic Heterotopia-The Importance of Diagnostic Imaging in Managing Intraoperative Findings, MEDICINA-LITHUANIA, Volume 59 Issue 8, 2023, DOI 10.3390/medicina59081407, Accession Number WOS:001057155700001, FI = 2.6 (Q3), AIS = 0.521 (Q3).

10. Dragomir L; **Antoniac I***; Manescu V; Antoniac A; Miculescu M; Trante O; Streza A; Cotrut CM; Forna DA; Microstructure and Corrosion Behaviour of Mg-Ca and Mg-Zn-Ag Alloys for Biodegradable Hard Tissue Implants, CRYSTALS, Volume 13, Issue 8, 2023, DOI 10.3390/cryst13081213, Accession Number WOS:001056853000001, FI = 2.7 (Q2), AIS = 0.423 (Q3).

11. Radoi MA; Osiac E; Lascu LC; Gîngu O; Mitrut I; Salan AI; Mercut R; **Antoniac I**; Manolea HO; A digital approach for the analysis of the optical coherence tomography evaluation of hydroxyapatite - based bone graft materials, ROMANIAN JOURNAL OF ORAL REHABILITATION, Volume 15, Issue 3, Page 42-53, 2023, Accession Number WOS:001083914900004, FI = 0.7 (Q4), AIS = 0.

12. Gharbi A; Oudadesse H; el Feki H; Cheikhrouhou-Koubaa W; Chatzistavrou X; Rau J; Heinämäki J; **Antoniac I**; Ashammakhi N; Derbel N; High Boron Content Enhances Bioactive Glass Biodegradation, JOURNAL OF FUNCTIONAL BIOMATERIALS, Volume 14 Issue 7, 2023, DOI 10.3390/jfb14070364, Accession Number WOS:001038543200001, FI = 4.8 (Q2), AIS = 0.752 (Q2).

13. Gheorghita D; Moldovan H; Robu A; Bita AI; Grosu E; Antoniac A; Corneschi I.; **Antoniac I***; Bodog AD; Bacila CI; Chitosan-Based Biomaterials for Hemostatic Applications: A Review of Recent Advances, INTERNATIONAL JOURNAL OF MOLECULAR SCIENCES, Volume 24, Issue 13, 2023, DOI 10.3390/ijms241310540, Accession Number WOS:001037279600001, FI = 5,6 (Q1), AIS = 1.028 (Q2).

14. Georgeanu VA; Gingu O; **Antoniac IV**; Manolea HO; Current Options and Future Perspectives on Bone Graft and Biomaterials Substitutes for Bone Repair, from Clinical Needs to Advanced Biomaterials Research, APPLIED SCIENCES-BASEL, Volume 13, Issue 14, 2023, DOI 10.3390/app13148471, Accession Number WOS:001034959100001, FI = 2.7 (Q2), AIS = 0.413 (Q3).

15. Bita T; Antoniac A; Ciuca I; Miculescu M; Cotrut CM; Paltanea G; Dura H; Corneschi I; **Antoniac I***; Carstoc ID; Bodog AD; Effect of Fluoride Coatings on the Corrosion Behavior of Mg-Zn-Ca-Mn Alloys for Medical Application, MATERIALS, Volume 16, Issue 13, 2023, DOI 10.3390/ma16134508, Accession Number WOS:001031202600001, FI = 3.4 (Q2), ***AIS = 0.510 (Q1 - METALLURGY & METALLURGICAL ENGINEERING - SCIE).***

16. Dragomir L; Antoniac A; Manescu V; Robu A; Dinu M; Pana I; Cotrut CM; Kamel E; **Antoniac I**; Rau JV; Vladescu A; Preparation and characterization of hydroxyapatite coating by magnetron sputtering on Mg-Zn-Ag alloys for orthopaedic trauma implants, CERAMICS INTERNATIONAL, Volume 49, Issue 16, Page 26274-26288, 2023, DOI 10.1016/j.ceramint.2023.05.116, Accession Number WOS:001027803600001, FI = 5.2 (Q1), ***AIS = 0.588 (Q1).***

17. Forysenkova AA; Fadeeva IV; Deyneko DV; Gosteva AN; Mamin GV; Shurtakova DV; Davydova GA; Yankova VG; **Antoniac IV**; Rau JV; Polyvinylpyrrolidone-Alginate-Carbonate Hydroxyapatite Porous Composites for Dental Applications, MATERIALS, Volume 16, Issue 12, 2023, DOI 10.3390/ma16124478, Accession Number WOS:001014542200001, FI = 3.4 (Q2), ***AIS = 0.510 (Q1 - METALLURGY & METALLURGICAL ENGINEERING - SCIE).***

18. Fosca M; Streza A; **Antoniac IV**; Vadala G; Rau JV; Ion-Doped Calcium Phosphate-Based Coatings with Antibacterial Properties, JOURNAL OF FUNCTIONAL BIOMATERIALS, Volume

14, Issue 5, 2023, DOI 10.3390/jfb14050250, Accession Number WOS:000997261800001, FI = 4.8 (Q2), AIS = 0.752 (Q2).

19. Fadeeva IV; Deyneko DV; Knotko AV; Olkhov AA; Slukin PV; Davydova GA; Trubitsyna TA; Preobrazhenskiy II; Gosteva AN; **Antoniac IV**; Rau JV; Antibacterial Composite Material Based on Polyhydroxybutyrate and Zn-Doped Brushite Cement, POLYMERS, Volume 15, Issue 9, 2023, DOI 10.3390/polym15092106, Accession Number WOS:000987404000001, FI = 5 (Q1), ***AIS = 0.604 (Q1).***

20. Gharbi A; Oudadesse H; Ashammakhi N; Cheikhrouhou-Koubaa W; Blaeser A; Rau JV; **Antoniac I**; Derbel N; El Feki H; Thermodynamic behavior of bioactive glass in relationship with high fluorine content, CERAMICS INTERNATIONAL, Volume 49, Issue 11, Page 18238-18247, 2023, DOI 10.1016/j.ceramint.2023.02.194, Accession Number WOS:000989385000001, FI = 5.2 (Q1), ***AIS = 0.588 (Q1).***

21. Forna DA; Robu A; Budacu C; Petre M; Topoliceanu C; Dana SM; Stamatin O; **Antoniac I**; Forna N; Study regarding the role of barrier membranes in guided bone regeneration techniques, ROMANIAN JOURNAL OF ORAL REHABILITATION, Volume 15, Issue 2, Page 13-25, 2023, Accession Number WOS:001035463900002, FI = 0.7 (Q4), AIS = 0.

22. Paltanea G; Manescu V; **Antoniac I***; Antoniac A; Nemoianu IV; Robu A; Dura H; A Review of Biomimetic and Biodegradable Magnetic Scaffolds for Bone Tissue Engineering and Oncology, INTERNATIONAL JOURNAL OF MOLECULAR SCIENCES, Volume 24, Issue 5, 2023, DOI 10.3390/ijms24054312, Accession Number WOS:000948111600001, FI = 5.6 (Q1), AIS = 1.028 (Q2).

23. Antoniac I; Manescu V; Antoniac A; Paltanea G; Magnesium-based alloys with adapted interfaces for bone implants and tissue engineering, REGENERATIVE BIOMATERIALS, Volume 10, 2023, DOI 10.1093/rb/rbad095, Accession Number WOS:001105738200001, FI = 6.7 (Q1), AIS = 0.854 (Q2).

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9. List of research projects won by the candidate Iulian Vasile ANTONIAC and their value.

Director of the international research projects

1. Interreg Europe Program, Project Code PGI00023 -NMP-REG, *Delivering Nanotechnologies, Advanced Materials and Production to REGional Manufacturing*, **Project Director UPB** (2016-2021). Contract value: 195.075 EURO
2. Frame 7 – PC7 Program, ERA-NET Scheme, Contract number 70/2017, *Biogenic Inks combining marine collagen and ionic-doped calcium phosphate for bone tissue engineering*, **Project Director UPB** (2017-2020). Contract value: 198.636 EURO
3. FP7-NMP-2007-LARGE-1, Project number 293104: *Novel biofunctional polymer scaffolds and techniques for the regeneration and repair of degenerate intervertebral disc*, Acronym - Disc Regeneration, **Project Director UPB** (2008-2012). Contract value: 407.000 EURO

Director of the national research projects

1. Contract PCE 100/2021, *Meta-structures formed by composite coatings of biodegradable Mg-Ca alloy implants for bone regeneration (MAGICBONE)*, PN III – Cercetare fundamentala si de frontiera, Proiecte de cercetare exploratorie, **Project Director** (2021-2023). Contract value: 1.198.032 lei (239.606 EURO).
2. Contract 60PCCDI/2018, *Obtaining and expertise of new biocompatible materials for medical applications* (MedicalMetMat), PN III – Dezvoltarea sistemului national de cercetare-dezvoltare, **Project Director UPB** (2018-2020). Contract value: 5.273.400 lei (1.054.680 EURO).
3. Contract 206/10.07.2018, PN-III-P1-1.1-MC2018-0615, *CBECIMAT Mobility Project,* **Project Director** (2018). Contract value: 7.700 lei (1.540 EURO).
4. Contract 22BM/2018, PN-III-P3-3.1-PM-RO-CN-2018-0201, *Composite scaffolds with biological functions for bone tissue engineering*, **Project Director** (2018-2019). Contract value: 33.360 lei (6.672 EURO).
5. Contract 122BG/2016, *Avant-garde formulations based on eugenol nanocapsule with addressability in dentistry (NANOEUCAPS)*, PN III – Increasing the competitiveness of the Romanian economy through research, development and innovation, **Project Director UPB** (2016-2018). Contract value: 440.001 lei (88.000 EURO).

6. Contract 271/2014, *Obtaining bioresorbable magnesium alloy implants, usable in ankle and foot surgery*, PN II-- Partnerships in priority areas, Field 7, **Project Director** (2014-2017). Contract value: 1.400.000 lei (280.000 EURO).
7. Contract 132 /2014, *Biomimetic magnetic scaffolds as an alternative strategy for bone tissue engineering and repair,* PN II-- Partnerships in priority areas, Field 4, **Project Director UPB** (2014-2017). Contract value: 1.380.000 lei (276.000 EURO).
8. Contract 72-192/01.10.2008, *Resorbable implants used in arthroscopy made of biomimetic biomaterials* - PROGRAM 4-Partnerships in priority areas; Field 7, **Project Director** (2008-2011). Contract value: 2.000.000 lei (400.000 EURO).
9. Contract 72-180/01.10.2008, *Nanostructured materials for functionalizing the surfaces of joint endoprostheses with reduced wear,* PROGRAM 4-Partnerships in priority areas; Field 7, **Project Director UPB** (2008-2011). Contract value: 2.000.000 lei (400.000 EURO).
10. Contract 42-132/01.10.2008, *Medical device for the treatment of joint diseases based on nanomaterials and the effects of the magnetic field,* PROGRAM 4-Partnerships in priority areas; Field 4, **Project Director UPB** (2008-2011). Contract value: 1.900.000 lei (380.000 EURO).
11. Contract 235/2006, *Biofunctionalization of the implant surface for osteosynthesis,* PROGRAM CEEX RELANSIN, **Project Director** (2006-2009). Contract value: 1.400.000 lei (280.000 EURO).
12. Contract 165/2006, *The development of innovative techniques in abdominal surgery based on the use of biointegrable structures and the development of new methods for evaluating their biodegradability,* PROGRAM CEEX-VIASAN, **Project Director UPB** (2006-2009). Contract value: 1.500.000 lei (300.000 EURO).
13. Contract 269/2006, *Complementary methods of testing biomaterials used in arthroplasty, in order to limit in vivo tests,* PROGRAM CEEX-RELANSIN, **Project Director UPB** (2006-2009). Contract value: 1.600.000 lei (320.000 EURO).
14. Contract 2146/2004, *The range of autostatic retractors with multiple surgical applications*, PROGRAM PNCDI-RELANSIN, **Project Director** (2004-2007). Contract value: 1.550.000 lei (300.000 EURO).
15. Contract 267/2004, *The creation and development of a modern equipment for the packaging of portioned food products, using the top sealing method*, PROGRAM PNCDI-AGRAL, **Project Director UPB** (2004-2007). Contract value: 1.500.000 lei (300.000 EURO).

10. List of patents of the candidate Iulian Vasile ANTONIAC

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2. **Antoniac VI**; Rau J; Semenescu A; Dawod N; Geantă V; Voiculescu I; Mateş IM; Şolea MR; Co-Cr type dental alloy with corrosion resistance and high biocompatibility, OSIM Patent RO134131B1/ 29.09.2023 (BOPI nr.9/2023).
3. **Antoniac VI**; Rau J; Semenescu A; Dawod N; Geantă V; Voiculescu I; Mateş IM; Şolea MR; Co-Cr type alloy alloyed with ruthenium, for metal-ceramic dental prostheses, OSIM Patent RO134132B1 /29.09.2023 (BOPI nr.9/2023).
4. **Antoniac I**; Mohan AG; Semenescu A; Doicin CV; Ulmeanu ME; Costoiu MC; Cavalu S; Murzac R; Doicin IE; Saceleanu MV; Mates IM; Cranial implant with osseointegration structures and functional coating, OSIM Patent 132417/2019.
5. **Antoniac I**; Semenescu A; Orban HB; Adam R; Mates IM; Multimaterial rod for external fixation device; OSIM Patent 131543/2019.cannulated screw for ligament fixation; OSIM Patent 128477/2015.
6. Popescu D; Amza CG; Laptoiu DC; Amza G; Semenescu A; **Antoniac I**; Cicic DT; Method and intelligent system based on X rays for training surgeons in inserting pedicle screws, OSIM Patent 128174/2015.
7. Moldovan M; Musat O; **Antoniac VI**; Prejmerean C; Trif M; Sarosi C; Boboia S; Silaghi-Dumitrescu L; Biomimetic biodegradable composition meant for osseous implants, OSIM Patent RO127484-A2/2012.
8. Alionte CG; Alupei COD; **Antoniac VI**; Ghiban B; Ghiban N; Hadar A; Ionescu LV; Laptoiu DC; Marin A; Semenescu A; Orthopedical screw rod and process for increasing bio-compatibility, OSIM Patent RO125357-A0/2010.
9. Bunea D; Orban G; Moldovan L; **Antoniac VI**; Gheorghiu D; Semenescu A; Femoral component for total hip prosthesis, OSIM Patent 117890B/2002.
10. Semenescu A; Bunea D; Ranea C; **Antoniac I**; Discontinuous regenerative firing plant; OSIM Patent 117972/2002.