AWARD REQUEST

1. Candidate

Name: **GRUMEZESCU**
First name: **ALEXANDRU-MIHAI**
PhD from: 2014
Current position: **Full professor**
PhD coordinator from 2021, 17 PhD students
Institution: National University of Science and Technology POLITEHNICA Bucharest
Phone:
E-mail:

2. Edition "Gala Cercetarii Romanesti"
3. Award and category for which you apply (individual or research team): **individual, științe inginerești — Premiul „Henri Coandă";**
4. Team leader, if applicable: **not applicable**
5. The composition of the research team, if applicable (names of the team members, position held, year of the last degree awarded): **not applicable**
6. A description of the most important scientific achievements of the last 5 years (maximum 4 pages, A4 format, Times New Roman characters, 12 points, 1.5 line spacing and 2 cm margins)

The candidate, Alexandru Mihai Grumezescu, started his research career in 2011 as a Ph.D. student at the Faculty of Applied Chemistry and Materials Science, University Politehnica of Bucharest (UPB). Within his field, the candidate has been actively involved in fervent research endeavors, making significant contributions to various scientific topics over the past five years.

Among his pioneering research projects as project leader and principal investigator, the project "Aerogel-based magnetic nanocomposites for water decontamination" emerges as a beacon of innovation. Under the project code PNRR-III-C9-2022-I-231/29.11.2022 (760092/23.05.2023, budget – 1.416.895,72 euros), this initiative has propelled transformative advancements in environmental remediation. Water contamination, exacerbated by industrial pollutants and pathogens, necessitates novel remediation strategies, with nanomaterials offering promising solutions. Leveraging microfluidic devices for precise control over synthesis parameters, the project aims to synthesize aerogel-based magnetic composite systems for water decontamination on a chip. With four primary objectives outlined - theoretical and experimental development, prototype creation, feasibility validation, and result valorization - the project targets a technological maturity level of TRL 4. This achievement promises positive impacts, including specialized human resource acquisition, expertise enhancement, and broader access to cutting-edge technology for water decontamination. In summary, the project represents a remarkable scientific achievement, poised to address critical environmental challenges and foster sustainable water management practices.

One of the most notable recent scientific endeavors is entitled "The multifunctional microfluidic platform of the lab-on-a-chip type for the manufacture of nanoparticles", TE 103/2020 (13993/09.09.2020; 2147/10.09.2020), was allocated a budget of 431,900 lei. The objective of this

initiative was to conceive, construct, and refine a comprehensive lab-on-chip (LoC) apparatus intended for the synthesis of ready-to-use $Fe3O4$ nanoparticles and drug delivery systems.

The project "Cold plasma for fluoride retention improvement and biofilm modulation in dental application" (271PED/2020), addressed the persistent challenges posed by dental caries by proposing a cold plasma-based solution for promoting fluoridation and enhancing fluoride retention within a hydroxyapatite-based enamel-like substrate. Focused on modulating microbial adhesion and biofilm formation while enhancing fluoride retention in an enamel-like model, our initiative aimed to revolutionize dental care. Beginning with a conceptual framework centered on cold plasma treatment (TRL 1-2), our project progressed toward laboratory validation, culminating in the demonstration of plasma's remarkable capability to augment fluoride retention and manipulate microbial biofilm formation within an enamel-like hydroxyapatite-based matrix (TRL 4). This innovative approach holds immense potential for preventing and treating dental caries and enamel deterioration, representing a significant advancement in oral healthcare.

The project "Bioactive nanostructures for innovative therapeutic strategies" (45PCCDI/2018 (874/19.04.2018 – project duration 30 months) and supported by a budget of 130,500 lei (for UPB), aiming to revolutionize therapeutic interventions by developing tissue engineering constructs with antibacterial properties for chronic skin lesions. Leveraging organic polymers, exosomes, and nanoparticles, the project created advanced tissue engineering constructs to harness the regenerative properties of mesenchymal stem cell-derived exosomes and integrate antibacterial organic nanoparticles like chitosan into a biodegradable fibrin hydrogel. The project provided promising groundbreaking approaches to wound healing and tissue regeneration, with implications for patient care and interdisciplinary collaboration in the medical field.

The candidate served as editor or co-editor, contributing to 96 volumes proudly presented by Elsevier. Within the last 5 years alone, he spearheaded 32 volumes, meticulously categorized into captivating series, several of them related to “Materials for Biomedical Engineering” and contributed four standalone volumes in nanomaterials.

In the realm of antimicrobial therapy, groundbreaking advancements raised from the fusion of materials science and biomedicine, presenting sustainable solutions against infectious diseases and environmental degradation. One pioneering method involved crafting electrospun polyethylene terephthalate (PET) nanofibers loaded with silver nanoparticles, offering a novel approach in anti-infective therapy, exhibiting efficacy against various microbial pathogens while mitigating cytotoxicity and inflammation. Additionally, usnic acid-loaded electrospun recycled PET-magnetite nanofibers showed enhanced antimicrobial properties, heralding a paradigm shift in biomaterial engineering. By repurposing PET, these studies not only combat pollution but also pioneer sustainable antimicrobial solutions in healthcare and materials science. In essence, these breakthroughs

emphasize the pivotal role of biomaterial innovation in addressing global health and environmental challenges, fostering a resilient and sustainable future (https://doi.org/10.3390/jcm8071039, https://doi.org/10.3390/polym15153282).

In the realm of nanoparticle synthesis, the candidate has introduced an innovative method for synthesizing MNPs utilizing a microfluidic lab-on-chip (LoC) device, enabling unparalleled control over particle properties. Through systematic adjustment of iron precursor solution concentration and flow rates, the study achieved MNPs with a uniform spherical shape, narrow size distribution, and enhanced thermal stability. Characterization confirms magnetite formation as a single mineral phase, validating the LoC device's efficacy in producing high-quality MNPs tailored for diverse applications.

Simultaneously, the second contribution consisted of microfluidic synthesis and functionalization of MNPs using sulfanilic acid (SA) and 4-sulfobenzoic acid (SBA). By precise control over synthesis parameters, the study allowed the one-step synthesis and functionalization of MNPs, ensuring high uniformity and reproducibility.

These studies collectively underscore the game-changing potential of microfluidic platforms in nanoparticle synthesis, facilitating precise engineering of MNPs with properties crucial for advancing biomedical and pharmaceutical research. By enabling the fine-tuning of MNP characteristics, these pioneering approaches hold promise for addressing critical challenges across various fields, from biomedicine to industry (https://doi.org/10.3390/ma14195906, https://doi.org/10.3390/nano12183160).

The candidate is a member of the editorial board for: Molecules (IF 4.6), Sci, Nanomaterials (IF 5.3), International Journal of Molecular Sciences (IF 5.6), Materials (IF 3.4), and Fibers (IF 3.9).

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Journal	Publisher	Impact Factor (IF)	Special Issue Title and Link
International Journal of Molecular Sciences	MDPI	5.6	Interactions of Nanoparticles with Biomolecules II
Materials	MDPI	3.4	Functionalized Nanomaterials and Structures for Biomedical Applications II
Polymers	MDPI	5.0	Advanced Biodegradable Polymer Scaffolds for Tissue Engineering II
Nanomaterials	MDPI	5.3	Metallic and Metal Oxide Nanohybrids and Their Applications
Fibers	MDPI	3.9	Feature Papers in Fibers

Now Closed

Journal	Publisher	Impact Factor (IF)	Special Issue Title and Link
Polymers (IF 5.0)	MDPI	5.0	Advanced Biodegradable Polymer Scaffolds for Tissue Engineering
Materials (IF 3.4)	MDPI	3.4	Functionalized Nanomaterials and Structures for Biomedical Applications
Nanomaterials (IF 5.3)	MDPI	5.3	Metallic and Metal Oxide Nanoparticles and Their Applications
Applied Sciences (IF 2.7)	MDPI	2.7	New Trends of Silver Nanoparticles in Biomedicine
International Journal of Molecular Sciences	MDPI	5.6	Interactions of Nanoparticles with Biomolecules
Materials (IF 3.4)	MDPI	3.4	Synthesis and Characterization of Nano-Biomaterials and Their Applications
Molecules (IF 4.6)	MDPI	4.6	Cellular and Molecular Bioengineering
Molecules (IF 4.6)	MDPI	4.6	Pharmaceutical Development

Over the past five years, the candidate published 68 review papers, 50 research papers, 35 editorial materials, published in reputable international publishing houses like Elsevier, with eight highly cited papers and one hot paper. Across databases such as Clarivate Analytics, Scopus, and

Google Scholar, the H-index values of 48, 49, and 59, respectively, underscore a substantial influence and productivity in the academic realm. Moreover, the scholarly output has attracted considerable attention, with a total citation count of 3124 and a H-index of 30 only for papers published in the last 5 years.

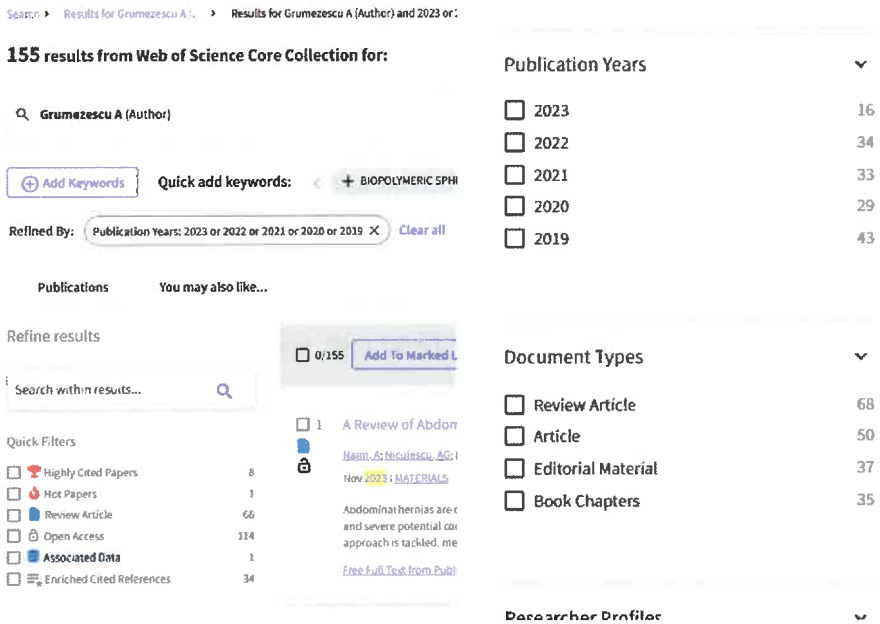

Figure 1. Profile of Grumezescu A on Clarivate Analytics (Web of Science).

7. Narrative curriculum vitae of the "individual" candidate or of each member of the research team, in the case of the "research team" candidate, from which the results of the research activity of the last 5 years can be found, according to the quantitative indicators in annex no. 2 to the regulation and the qualitative assessment criteria provided in annex no. 3 to the regulation.

The candidate, Alexandru Mihai GRUMEZESCU (AMG), embarked on his research journey in 2011 as a Ph.D. student at the Faculty of Applied Chemistry and Materials Science, University Politehnica of Bucharest (UPB). His doctoral thesis, titled "Composite Biomaterials," was a pioneering endeavor aimed at the synthesis and characterization of various nanostructures. Moreover, it encompassed their bioevaluation to elucidate their antimicrobial potential against both planktonic and biofilm microbial cells. Additionally, the thesis explored their biocompatibility and bioavailability through a comprehensive array of *in vitro* (including cell viability and cell cycle analysis on normal and tumor cells) and *in vivo* tests conducted on holoxenic mice.

Since the inception of his research career, the candidate has exhibited a steadfast dedication to the preparation and characterization of diverse (nano)biomaterials endowed with potent biological activity. In 2012, he embarked on his teaching career at the Politehnica University of Bucharest, Faculty of Applied Chemistry and Materials Science. Initially serving as an associate teaching staff

at the Department of Science and Engineering of Oxide Materials and Nanomaterials from 2012 to 2014, he progressed to the role of Teaching Assistant from 2014 to 2016. Subsequently, from 2016 to 2019, he served as a Lecturer, further enriching the academic landscape with his expertise. His dedication and scholarly contributions were duly recognized, leading to his appointment as an Associate Professor from 2019 to 2023. Demonstrating unparalleled proficiency and leadership in his field, he was promoted to the esteemed position of Professor in the same Department from October 2023 onwards.

Through his relentless pursuit of excellence in research and teaching, AMG has solidified his position as a trailblazer in the realms of biomaterials, nanotechnology, and academia as a whole. His unwavering commitment to advancing scientific knowledge and nurturing the next generation of scholars serves as a beacon of inspiration for aspiring researchers and educators worldwide.

The candidate's academic journey includes a tenure as a Postdoctoral Fellow at the University Politehnica of Bucharest, under the project "POSDRU 132397, Excelenţă în cercetare prin burse doctorale şi postdoctorale (ExcelDOC)," focusing on " Nanostructured materials and surfaces with antimicrobial properties used in the food industry - POSDRU/159/1.5/S/132397."

Post his Ph.D. defense, the candidate's research focus honed in on the development of therapeutic nanoparticles, with particular emphasis on magnetite nanostructures in anti-infective strategies. Key developments include:

- Enhanced delivery of antimicrobial compounds, resulting in a drastic decrease in the minimal inhibition concentration (MIC) of the drug used independently.
- Inhibition of microbial attachment and biofilm development on coated medical surfaces.
- Functionalization of nanostructures with anti-tumor drugs, enhancing the cytotoxic effect of the drugs without inserting any spacer between magnetite and the therapeutic molecule.

These groundbreaking advancements represent promising avenues for developing new strategies to combat microbial infections, especially those involving resistant and biofilm-embedded bacteria. The candidate's tireless dedication to advancing scientific knowledge and addressing pressing global challenges exemplifies their outstanding contributions to the field of nanomedicine and antimicrobial research.

When it comes to quantitative indicators, the candidate excels in the following areas:

No.	Quantitative indicators	Value
1	Scientific documents as main author or co-author classified with the article document type, published in web of science indexed journals JCR quartile Q1 AIS (the last classification available in relation to the year of submission of the application is taken into account) - minimum 7	YES, see Table 1, which lists 9 Q1 articles.
2	Ranking in the top 1% by citations/highly cited researcher in the field of ... (according to the Highly Cited Researchers index, Clarivate)	NO
3	National and international research projects, won through competition, with a value of at least 100,000 euros each and a team of at least 3	YES, see table 2 that lists proofs for a contract as project leader with a

	members, as director/project leader - at least 1;	funding amount 1.416.895,72 euro
4	Researcher/invited teaching staff at prestigious universities abroad - minimum 1	NO
5	Editor-in-chief at a magazine indexed Journal Citation Reports - minimum 1;	NO
6	Cumulative influence score A, calculated according to the formula ...., where *n* is the number of articles published by the candidate in the last 5 years, *AIS*i represents the AIS value of the journal in which article *i* is published (the last classification available in the report is taken into account with the year of submission of the application) and represents the total number of authors of Article *i* – A at least 5	YES, see Table 3, which lists 112 articles with a cumulative AIS of 16.68.

Table 1. Scientific documents as main author or co-author classified with the article document type, published in Web of Science indexed journals JCR quartile Q1 AIS (the last classification available in relation to the year of submission of the application is taken into account) - minimum 7

No.	Article	AIS	Quartile
1	Gherasim, O.; Grumezescu, A.M.; Ficai, A.; Grumezescu, V.; Holban, A.M.; Galateanu, B.; Hudita, A. Composite P(3HB-3HV)-CS Spheres for Enhanced Antibiotic Efficiency. *Polymers* **2021**, *13*, WOS:000651936700001, doi:10.3390/polym13060989.	0.604	Q1
2	Gherasim, O.; Grumezescu, A.M.; Grumezescu, V.; Andronescu, E.; Negut, I.; Bîrca, A.C.; Galateanu, B.; Hudita, A. Bioactive Coatings Loaded with Osteogenic Protein for Metallic Implants. *Polymers* **2021**, *13*, WOS:000737292000001, doi:10.3390/polym13244303.	0.604	Q1
3	Grumezescu, V.; Grumezescu, A.M.; Ficai, A.; Negut, I.; Vasile, B.S.; Galateanu, B.; Hudita, A. Composite Coatings for Osteoblast Growth Attachment Fabricated by Matrix-Assisted Pulsed Laser Evaporation. *Polymers* **2022**, *14*, WOS:000833119200001, doi:10.3390/polym14142934.	0.604	Q1
4	Lee, C.T.; Huang, K.S.; Shaw, J.F.; Chen, J.R.; Kuo, W.S.; Shen, G.X.; Grumezescu, A.M.; Holban, A.M.; Wang, Y.T.; Wang, J.S.; Hsiang, Y.P.; Lin, Y.M.; Hsu, H.H.; Yang, C.H. Trends in the Immunomodulatory Effects of Cordyceps militaris: Total Extracts, Polysaccharides and Cordycepin. *Frontiers in Pharmacology* **2020**, *11*, WOS:000598463800001, doi:10.3389/fphar.2020.575704.	0.992	Q1
5	Modrogan, C.; Caprarescu, S.; Dancila, A.M.; Orbulet, O.D.; Grumezescu, A.M.; Purcar, V.; Raditoiu, V.; Fierascu, R.C. Modified Composite Based on Magnetite and Polyvinyl Alcohol: Synthesis, Characterization, and Degradation Studies of the Methyl Orange Dye from Synthetic Wastewater. *Polymers* **2021**, *13*, WOS:000723769100001, doi:10.3390/polym13223911.	0.604	Q1
6	Niculescu, A.G.; Grumezescu, A.M*. An Up-to-Date Review of Biomaterials Application in Wound Management. *Polymers* **2022**, *14*, WOS:000759510600001, doi:10.3390/polym14030421.	0.604	Q1
7	Radulescu, D.E.; Neacsu, I.A.; Grumezescu, A.M.; Andronescu, E. Novel Trends into the Development of Natural Hydroxyapatite-Based Polymeric Composites for Bone Tissue Engineering. *Polymers* **2022**, *14*, WOS:000769346400001, doi:10.3390/polym14050899.	0.604	Q1
8	Radulescu, D.M.; Neacsu, I.A.; Grumezescu, A.M.; Andronescu, E. New Insights of Scaffolds Based on Hydrogels in Tissue Engineering. *Polymers* **2022**, *14*, WOS:000765172900001, doi:10.3390/polym14040799.	0.945	Q1
9	Stoica, A.E.; Birca, A.C.; Mihaiescu, D.E.; Grumezescu, A.M.; Ficai, A.; Herman, H.; Cornel, B.; Rosu, M.; Gharbia, S.; Holban, A.M.; Vasile, B.S.; Andronescu, E.; Hermenean, A.O. Biocompatibility and Antimicrobial Profile of Acid Usnic-Loaded Electrospun Recycled Polyethylene Terephthalate (PET)-Magnetite Nanofibers. *Polymers* **2023**, *15*, WOS:001046333500001, doi:10.3390/polym15153282.	0.604	Q1

Table 3. Cumulative influence score A, calculated according to the formula $A = \sum_{i=1}^{n} \frac{AIS_i}{n_i}$, where n is the number of articles published by the candidate in the last 5 years, AIS_i represents the AIS value of the journal in which article i is published (the last classification available in the report is taken into account with the year of submission of the application) and represents the total number of authors of Article i – A at least 5.

No	Art	Authors	AIS	AIS/Author
1	Udriste, A.S.; Niculescu, A.G.; Iliuta, L.; Bajeu, T.; Georgescu, A.; Grumezescu, A.M.; Badila, E. Progress in Biomaterials for Cardiac Tissue Engineering and Regeneration. Polymers 2023, 15, WOS:000948210200001, doi:10.3390/polym15051177.	7	0.604	0.08628571
2	Stoica, A.E.; Birca, A.C.; Mihaiescu, D.E.; Grumezescu, A.M.; Ficai, A.; Herman, H.; Cornel, B.; Rosu, M.; Gharbia, S.; Holban, A.M.; Vasile, B.S.; Andronescu, E.; Hermenean, A.O. Biocompatibility and Antimicrobial Profile of Acid Usnic-Loaded Electrospun Recycled Polyethylene Terephthalate (PET)-Magnetite Nanofibers. Polymers 2023, 15, WOS:001046333500001, doi:10.3390/polym15153282.	13	0.604	0.04646154
3	Stoica, A.E.; Bîrca, A.C.; Gherasim, O.; Ficai, A.; Grumezescu, A.M.; Oprea, O.C.; Vasile, B.S.; Balta, C.; Andronescu, E.; Hermenean, A.O. Electrospun Fibrous Silica for Bone Tissue Engineering Applications. Pharmaceutics 2023, 15, WOS:001019518300001, doi:10.3390/pharmaceutics15061728.	10	0.754	0.0754
4	Stoica, A.E.; Albulet, D.; Birca, A.C.; Iordache, F.; Ficai, A.; Grumezescu, A.M.; Vasile, B.S.; Andronescu, E.; Marinescu, F.; Holban, A.M. Electrospun Nanofibrous Mesh Based on PVA, Chitosan, and Usnic Acid for Applications in Wound Healing. International Journal of Molecular Sciences 2023, 24, WOS:001031014000001, doi:10.3390/ijms241311037.	10	1.028	0.1028
5	Radulescu, D.M.; Surdu, V.A.; Ficai, A.; Ficai, D.; Grumezescu, A.M.; Andronescu, E. Green Synthesis of Metal and Metal Oxide Nanoparticles: A Review of the Principles and Biomedical Applications. International Journal of Molecular Sciences 2023, 24, WOS:001089939100001, doi:10.3390/ijms242015397.	6	1.028	0.17133333
6	Puiu, R.A.; Birca, A.C.; Grumezescu, V.; Duta, L.; Oprea, O.C.; Holban, A.M.; Hudita, A.; Galateanu, B.; Balaure, P.C.; Grumezescu, A.M.; Andronescu, E. Multifunctional Polymeric Biodegradable and Biocompatible Coatings Based on Silver Nanoparticles: A Comparative In Vitro Study on Their Cytotoxicity towards Cancer and Normal Cell Lines of Cytostatic Drugs versus Essential-Oil-Loaded Nanoparticles and on Their Antimicrobial and Antibiofilm Activities. Pharmaceutics 2023, 15, WOS:001038852100001, doi:10.3390/pharmaceutics15071882.	11	0.754	0.06854545
7	Preda, M.D.; Popa, M.L.; Neacsu, I.A.; Grumezescu, A.M.; Ginghina, O. Antimicrobial Clothing Based on Electrospun Fibers with ZnO Nanoparticles. International Journal of Molecular Sciences 2023, 24, WOS:000914982900001, doi:10.3390/ijms24021629.	5	1.028	0.2056
8	Popa, M.L.; Preda, M.D.; Neacsu, I.A.; Grumezescu, A.M.; Ginghina, O. Traditional vs. Microfluidic Synthesis of ZnO Nanoparticles. International Journal of Molecular Sciences 2023, 24, WOS:000930402800001, doi:10.3390/ijms24031875.	5	1.028	0.2056
9	Niculescu, A.G.; Morosan, A.; Bîrca, A.C.; Gherasim, O.; Oprea, O.C.; Vasile, B.S.; Purcareanu, B.; Mihaiescu, D.E.; Radulescu, M.; Grumezescu, A.M. Microwave-Assisted Silanization of Magnetite Nanoparticles Pre-Synthesized by a 3D Microfluidic Platform. Nanomaterials 2023, 13, WOS:001095122300001, doi:10.3390/nano13202795.	10	0.707	0.0707
10	Najm, A.; Niculescu, A.G.; Gaspar, B.S.; Grumezescu, A.M.; Beuran, M. A Review of Abdominal Meshes for Hernia Repair-Current Status and Emerging Solutions. Materials 2023, 16, WOS:001120847700001, doi:10.3390/ma16227124.	5	0.51	0.102
11	Dorcioman, G.; Hudita, A.; Galateanu, B.; Craciun, D.; Mercioniu, I.; Oprea, O.C.; Negut, I.; Grumezescu, V.; Grumezescu, A.M.; Ditu,	11	0.754	0.06854545

No	Art	Authors	AIS	AIS/Author
	L.M.; Holban, A.M. Magnetite-Based Nanostructured Coatings Functionalized with Nigella sativa and Dicloxacillin for Improved Wound Dressings. Antibiotics-Basel 2023, 12, WOS:000916798900001, doi:10.3390/antibiotics12010059.			
12	Costachescu, B.; Niculescu, A.G.; Grumezescu, A.M.; Teleanu, D.M. Screw Osteointegration-Increasing Biomechanical Resistance to Pull-Out Effect. Materials 2023, 16, WOS:001062329400001, doi:10.3390/ma16165582.	4	0.51	0.1275
13	Burdusel, A.C.; Neacsu, I.A.; Birca, A.C.; Chircov, C.; Grumezescu, A.M.; Holban, A.M.; Curutiu, C.; Ditu, L.M.; Stan, M.; Andronescu, E. Microwave-Assisted Hydrothermal Treatment of Multifunctional Substituted Hydroxyapatite with Prospective Applications in Bone Regeneration. Journal of Functional Biomaterials 2023, 14, WOS:001038744800001, doi:10.3390/jfb14070378.	10	0.752	0.0752
14	Bîrca, A.C.; Gherasim, O.; Niculescu, A.G.; Grumezescu, A.M.; Neacsu, I.A.; Chircov, C.; Vasile, B.S.; Oprea, O.C.; Andronescu, E.; Stan, M.S.; Curutiu, C.; Ditu, L.M.; Holban, A.M. A Microfluidic Approach for Synthesis of Silver Nanoparticles as a Potential Antimicrobial Agent in Alginate-Hyaluronic Acid-Based Wound Dressings. International Journal of Molecular Sciences 2023, 24, WOS:001036215100001, doi:10.3390/ijms241411466.	13	1.028	0.07907692
15	Birca, A.C.; Chircov, C.; Niculescu, A.G.; Hildegard, H.; Balta, C.; Rosu, M.; Mladin, B.; Gherasim, O.; Mihaiescu, D.E.; Vasile, B.S.; Grumezescu, A.M.; Andronescu, E.; Hermenean, A.O. H₂O₂-PLA-(Alg)₂Ca Hydrogel Enriched in Matrigel® Promotes Diabetic Wound Healing. Pharmaceutics 2023, 15, WOS:000958741600001, doi:10.3390/pharmaceutics15030857.	13	0.754	0.058
16	Teleanu, R.I.; Preda, M.D.; Niculescu, A.G.; Vladâcenco, O.; Radu, C.I.; Grumezescu, A.M.; Teleanu, D.M. Current Strategies to Enhance Delivery of Drugs across the Blood-Brain Barrier. Pharmaceutics 2022, 14, WOS:000801717900001, doi:10.3390/pharmaceutics14050987.	7	0.754	0.10771429
17	Teleanu, R.I.; Niculescu, A.G.; Roza, E.; Vladâcenco, O.; Grumezescu, A.M.; Teleanu, D.M. Neurotransmitters-Key Factors in Neurological and Neurodegenerative Disorders of the Central Nervous System. International Journal of Molecular Sciences 2022, 23, WOS:000808851300001, doi:10.3390/ijms23115954.	6	1.028	0.17133333
18	Teleanu, D.M.; Niculescu, A.G.; Lungu, II; Radu, C.I.; Vladâcenco, O.; Roza, E.; Costachescu, B.; Grumezescu, A.M.; Teleanu, R.I. An Overview of Oxidative Stress, Neuroinflammation, and Neurodegenerative Diseases. International Journal of Molecular Sciences 2022, 23, WOS:000808965900001, doi:10.3390/ijms23115938.	9	1.028	0.11422222
19	Radulescu, D.M.; Neacsu, I.A.; Grumezescu, A.M.; Andronescu, E. New Insights of Scaffolds Based on Hydrogels in Tissue Engineering. Polymers 2022, 14, WOS:000765172900001, doi:10.3390/polym14040799.	4	0.604	0.151
20	Radulescu, D.E.; Neacsu, I.A.; Grumezescu, A.M.; Andronescu, E. Novel Trends into the Development of Natural Hydroxyapatite-Based Polymeric Composites for Bone Tissue Engineering. Polymers 2022, 14, WOS:000769346400001, doi:10.3390/polym14050899.	4	0.604	0.151
21	Popescu, R.C.; Vasile, B.S.; Savu, D.I.; Mogosanu, G.D.; Bejenaru, L.E.; Andronescu, E.; Grumezescu, A.M.; Mogoanta, L. Influence of Polymer Shell Molecular Weight on Functionalized Iron Oxide Nanoparticles Morphology and In Vivo Biodistribution. Pharmaceutics 2022, 14, WOS:000856718100001, doi:10.3390/pharmaceutics14091877.	8	0.754	0.09425
22	Paduraru, D.N.; Niculescu, A.G.; Bolocan, A.; Andronic, O.; Grumezescu, A.M.; Bîrla, R. An Updated Overview of Cyclodextrin-Based	6	0.754	0.12566667

No	Art	Authors	AIS	AIS/Author
	Drug Delivery Systems for Cancer Therapy. Pharmaceutics 2022, 14, WOS:000845693100001, doi:10.3390/pharmaceutics14081748.			
23	Paduraru, D.N.; Ion, D.; Niculescu, A.G.; Musat, F.; Andronic, O.; Grumezescu, A.M.; Bolocan, A. Recent Developments in Metallic Nanomaterials for Cancer Therapy, Diagnosing and Imaging Applications. Pharmaceutics 2022, 14, WOS:000764651600001, doi:10.3390/pharmaceutics14020435.	7	0.754	0.10771429
24	Niculescu, A.G.; Mihaiescu, D.E.; Grumezescu, A.M. A Review of Microfluidic Experimental Designs for Nanoparticle Synthesis. International Journal of Molecular Sciences 2022, 23, WOS:000839003800001, doi:10.3390/ijms23158293.	3	1.028	0.34266667
25	Niculescu, A.G.; Grumezescu, A.M. Applications of Chitosan-Alginate-Based Nanoparticles-An Up-to-Date Review. Nanomaterials 2022, 12, WOS:000757651000001, doi:10.3390/nano12020186.	2	0.707	0.3535
26	Niculescu, A.G.; Grumezescu, A.M. An Up-to-Date Review of Biomaterials Application in Wound Management. Polymers 2022, 14, WOS:000759510600001, doi:10.3390/polym14030421.	2	0.604	0.302
27	Niculescu, A.G.; Grumezescu, A.M. Novel Tumor-Targeting Nanoparticles for Cancer Treatment-A Review. International Journal of Molecular Sciences 2022, 23, WOS:000795335200001, doi:10.3390/ijms23095253.	2	1.028	0.514
28	Niculescu, A.G.; Chircov, C.; Grumezescu, A.M. Magnetite nanoparticles: Synthesis methods-A comparative review. Methods 2022, 199, 16-27, WOS:000760757900004, doi:10.1016/j.ymeth.2021.04.018.	3	1.528	0.50933333
29	Mercan, D.A.; Niculescu, A.G.; Grumezescu, A.M. Nanoparticles for Antimicrobial Agents Delivery-An Up-to-Date Review. International Journal of Molecular Sciences 2022, 23, WOS:000887349700001, doi:10.3390/ijms232213862.	3	1.028	0.34266667
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98	Balasa, A.F.; Chircov, C.; Grumezescu, A.M. Marine Biocompounds for Neuroprotection-A Review. Marine Drugs 2020, 18, WOS:000551180900002, doi:10.3390/md18060290.	3	0.7	0.23333333
99	Balasa, A.F.; Chircov, C.; Grumezescu, A.M. Body Fluid Biomarkers for Alzheimer's Disease-An Up-To-Date Overview. Biomedicines 2020, 8, WOS:000584117300001, doi:10.3390/biomedicines8100421.	3	0.802	0.26733333
100	Teleanu, R.I.; Gherasim, O.; Gherasim, T.G.; Grumezescu, V.; Grumezescu, A.M.; Teleanu, D.M. Nanomaterial-Based Approaches for Neural Regeneration. Pharmaceutics 2019, 11, WOS:000475330500018, doi:10.3390/pharmaceutics11060266.	6	0.754	0.12566667
101	Teleanu, R.I.; Chircov, C.; Grumezescu, A.M.; Volceanov, A.; Teleanu, D.M. Antioxidant Therapies for Neuroprotection-A Review. Journal of Clinical Medicine 2019, 8, WOS:000498398500157, doi:10.3390/jcm8101659.	5	0.908	0.1816
102	Teleanu, D.M.; Negut, I.; Grumezescu, V.; Grumezescu, A.M.; Teleanu, A.I. Nanomaterials for Drug Delivery to the Central Nervous System. Nanomaterials 2019, 9, WOS:000465603800009, doi:10.3390/nano9030371.	5	0.707	0.1414
103	Teleanu, D.M.; Chircov, C.; Grumezescu, A.M.; Volceanov, A.; Teleanu, R.I. Contrast Agents Delivery: An Up-to-Date Review of	5	0.707	0.1414

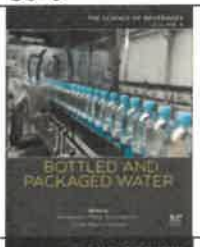
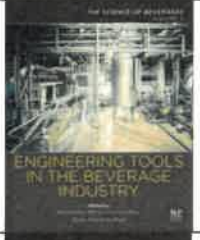
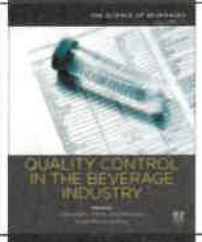
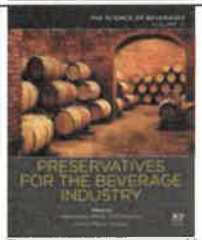
No	Art	Authors	AIS	AIS/Author
	Nanodiagnostics in Neuroimaging. Nanomaterials 2019, 9, WOS:000467768800058, doi:10.3390/nano9040542.			
104	Teleanu, D.M.; Chircov, C.; Grumezescu, A.M.; Teleanu, R.I. Neurotoxicity of Nanomaterials: An Up-to-Date Overview. Nanomaterials 2019, 9, WOS:000459737200096, doi:10.3390/nano9010096.	4	0.707	0.17675
105	Teleanu, D.M.; Chircov, C.; Grumezescu, A.M.; Teleanu, R.I. Neuronanomedicine: An Up-to-Date Overview. Pharmaceutics 2019, 11, WOS:000466897800003, doi:10.3390/pharmaceutics11030101.	4	0.754	0.1885
106	Popescu, E.L.; Balasoiu, M.; Cristea, O.M.; Stoica, A.E.; Oprea, O.C.; Vasile, B.S.; Grumezescu, A.M.; Bancescu, G.; Busuioc, C.J.; Mogosanu, G.D.; Streba, C.T.; Mogoanta, L. Study of antimicrobial effects of functionalized silver nanoparticles. Romanian Journal of Morphology and Embryology 2019, 60, 939-946, WOS:000505600500025.	12	0.196	0.01633333
107	Negut, I.; Visan, A.I.; Popescu, C.; Cristescu, R.; Ficai, A.; Grumezescu, A.M.; Chifiriuc, M.C.; Boehm, R.D.; Yamaleyeva, D.; Taylor, M.; Narayan, R.J.; Chrisey, D.B. Successful Release of Voriconazole and Flavonoids from MAPLE Deposited Bioactive Surfaces. Applied Sciences-Basel 2019, 9, WOS:000460696500172, doi:10.3390/app9040786.	12	0.413	0.03441667
108	Lungu, II; Grumezescu, A.M.; Volceanov, A.; Andronescu, E. Nanobiomaterials Used in Cancer Therapy: An Up-To-Date Overview. Molecules 2019, 24, WOS:000496242300132, doi:10.3390/molecules24193547.	4	0.659	0.16475
109	Grumezescu, V.; Negut, I.; Gherasim, O.; Birca, A.C.; Grumezescu, A.M.; Hudita, A.; Galateanu, B.; Costache, M.; Andronescu, E.; Holban, A.M. Antimicrobial applications of MAPLE processed coatings based on PLGA and lincomycin functionalized magnetite nanoparticles. Applied Surface Science 2019, 484, 587-599, WOS:000471830700065, doi:10.1016/j.apsusc.2019.04.112.	10	0.865	0.0865
110	Grumezescu, A.M.; Stoica, A.E.; Dima-Balcescu, M.S.; Chircov, C.; Gharbia, S.; Balta, C.; Rosu, M.; Herman, H.; Holban, A.M.; Ficai, A.; Vasile, B.S.; Andronescu, E.; Chifiriuc, M.C.; Hermenean, A. Electrospun Polyethylene Terephthalate Nanofibers Loaded with Silver Nanoparticles: Novel Approach in Anti-Infective Therapy. Journal of Clinical Medicine 2019, 8, WOS:000479003300123, doi:10.3390/jcm8071039.	14	0.908	0.06485714
111	Chircov, C.; Grumezescu, A.M.; Holban, A.M. Magnetic Particles for Advanced Molecular Diagnosis. Materials 2019, 12, WOS:000477043900122, doi:10.3390/ma12132158.	3	0.51	0.17
112	Balaure, P.C.; Holban, A.M.; Grumezescu, A.M.; Mogosanu, G.D.; Balseanu, T.A.; Stan, M.S.; Dinischiotu, A.; Volceanov, A.; Mogoanta, L. In vitro and in vivo studies of novel fabricated bioactive dressings based on collagen and zinc oxide 3D scaffolds. International Journal of Pharmaceutics 2019, 557, 199-207, WOS:000457290600023, doi:10.1016/j.ijpharm.2018.12.063.	9	0.715	0.07944444
			Total AIS	**16.687432**

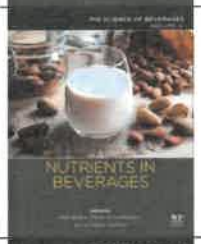
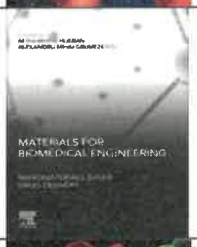
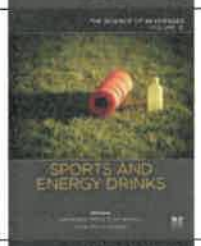
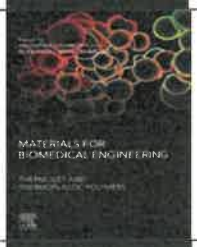
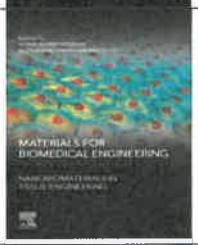
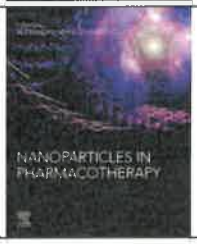
In terms of qualitative evaluation criteria, the candidate demonstrates excellence in the following aspects:

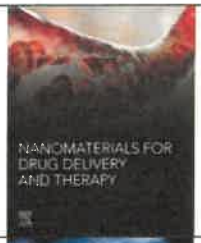
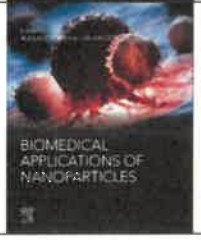
Below, the qualitative findings concerning the **C1** indicator are outlined, encompassing books released by esteemed international publishing entities, articles featured in JCR Q1 journals (AIS classification), and granted invention patents.

Regarding books, the comprehensive list of 32 titles edited under the auspices of Elsevier is detailed in Table 1.

Table 4. Books published by prestigious international publishing houses.

No.	Cover	Details	No.	Cover	Details
1		Alexandru Mihai Grumezescu, Alina Maria Holban: Nanoengineering in the Beverage Industry, ISBN: 9780128172841, Academic Press, USA, 2019	17		Alexandru Mihai Grumezescu, Alina Maria Holban: Bottled and Packaged Water, ISBN: 9780128157046, Academic Press, USA, 2019
2		Alexandru Mihai Grumezescu, Alina Maria Holban: Biotechnological Progress and Beverage Consumption, ISBN: 9780128172858, Academic Press, USA, 2019	18		Alexandru Mihai Grumezescu, Alina Maria Holban: Engineering Tools in the Beverage Industry, ISBN: 9780128156988, Academic Press, USA, 2019
3		Alexandru Mihai Grumezescu, Alina Maria Holban: Safety Issues in Beverage Production, ISBN: 9780128166802, Academic Press, USA, 2019	19		Valentina Grumezescu, Alexandru Mihai Grumezescu: Materials for Biomedical Engineering, ISBN: 9780081028155, Elsevier, USA, 2019
4		Alexandru Mihai Grumezescu, Alina Maria Holban: Quality Control in the Beverage Industry, ISBN: 9780128166826, Academic Press, USA, 2019	20		Alina Maria Holban, Alexandru Mihai Grumezescu: Materials for Biomedical Engineering: Organic Micro and Nanostructures, ISBN: 9780128184349, Elsevier, USA, 2019
5		Alexandru Mihai Grumezescu, Alina Maria Holban: Trends in Beverage Packaging, ISBN: 9780128166840, Academic Press, USA, 2019	21		Alina Maria Holban, Alexandru Mihai Grumezescu: Materials for Biomedical Engineering: Bioactive Materials for Antimicrobial, Anticancer, and Gene Therapy, ISBN: 9780128184363, Elsevier, USA, 2019
6		Alexandru Mihai Grumezescu, Alina Maria Holban: Preservatives and Preservation Approaches in Beverages, ISBN: 9780128166864, Academic Press, USA, 2019	22		Valentina Grumezescu, Alexandru Mihai Grumezescu: Materials for Biomedical Engineering: Bioactive Materials, Properties, and Applications, ISBN: 9780128184325, Elsevier, USA, 2019
7		Alexandru Mihai Grumezescu, Alina Maria Holban: Natural Beverages, ISBN: 9780128166901, Academic Press, USA, 2019	23		Valentina Grumezescu, Alexandru Mihai Grumezescu: Materials for Biomedical Engineering: Absorbable Polymers, ISBN: 9780128184165, Elsevier, USA, 2019

No.	Cover	Details	No.	Cover	Details
8		Alexandru Mihai Grumezescu, Alina Maria Holban: Value-Added Ingredients and Enrichments of Beverages, ISBN: 9780128166888, Academic Press, USA, 2019	24		Valentina Grumezescu, Alexandru Mihai Grumezescu: Materials for Biomedical Engineering: Biopolymer Fibers, ISBN: 9780128168738, Elsevier, USA, 2019
9		Alexandru Mihai Grumezescu, Alina Maria Holban: Nutrients in Beverages, ISBN: 9780128169254, Academic Press, USA, 2019	25		Alina Maria Holban, Alexandru Mihai Grumezescu: Materials for Biomedical Engineering: Hydrogels and Polymer-based Scaffolds, ISBN: 9780128169025, Elsevier, USA, 2019
10		Alexandru Mihai Grumezescu, Alina Maria Holban: Functional and Medicinal Beverages, ISBN: 9780128172636, Academic Press, USA, 2019	26		Alina Maria Holban, Alexandru Mihai Grumezescu: Materials for Biomedical Engineering: Nanomaterials-based Drug Delivery, ISBN: 9780128169148, Elsevier, USA, 2019
11		Alexandru Mihai Grumezescu, Alina Maria Holban: Sports and Energy Drinks, ISBN: 9780128165294, Academic Press, USA, 2019	27		Valentina Grumezescu, Alexandru Mihai Grumezescu: Materials for Biomedical Engineering: Thermoset and Thermoplastic Polymers, ISBN: 9780128168752, Elsevier, USA, 2019
12		Alexandru Mihai Grumezescu, Alina Maria Holban: Milk-Based Beverages, ISBN: 9780128157114, Academic Press, USA, 2019	28		Alina Maria Holban, Alexandru Mihai Grumezescu: Materials for Biomedical Engineering: Nanobiomaterials in Tissue Engineering, ISBN: 9780128169100, Elsevier, USA, 2019
13		Alexandru Mihai Grumezescu, Alina Maria Holban: Caffeinated and Cocoa Based Beverages, ISBN: 9780128158654, Academic Press, USA, 2019	29		Alexandru Mihai Grumezescu: Nanoparticles in Pharmacotherapy, ISBN: 9780128166284, William Andrew, USA, 2019
14		Alexandru Mihai Grumezescu, Alina Maria Holban: Alcoholic Beverages, ISBN: 9780128157015, Academic Press, USA, 2019	30		Alexandru Mihai Grumezescu: Nanoarchitectonics in Biomedicine, ISBN: 9780128172612, William Andrew, USA, 2019

No.	Cover	Details	No.	Cover	Details
15		Alexandru Mihai Grumezescu, Alina Maria Holban: Non-alcoholic Beverages, ISBN: 9780128157022, Academic Press, USA, 2019	31		Alexandru Mihai Grumezescu: Nanomaterials for Drug Delivery and Therapy, ISBN: 9780128166291, Elsevier, USA, 2019
16		Alexandru Mihai Grumezescu, Alina Maria Holban: Fermented Beverages, ISBN: 9780128157039, Academic Press, USA, 2019	32		Alexandru Mihai Grumezescu: Biomedical Applications of Nanoparticles, ISBN: 97801281663 07, William Andrew, USA, 2019

The presentation of articles published within the JCR Q1 zone is delineated in Table 5.

Table 5. List of JCR Q1 articles published in the last 5 years

No	Art	AIS Quartile
1	Udriste, A.S.; Niculescu, A.G.; Iliuta, L.; Bajeu, T.; Georgescu, A.; Grumezescu, A.M.; Badila, E. Progress in Biomaterials for Cardiac Tissue Engineering and Regeneration. Polymers 2023, 15, WOS:000948210200001, doi:10.3390/polym15051177.	Q1
2	Stoica, A.E.; Birca, A.C.; Mihaiescu, D.E.; Grumezescu, A.M.; Ficai, A.; Herman, H.; Cornel, B.; Rosu, M.; Gharbia, S.; Holban, A.M.; Vasile, B.S.; Andronescu, E.; Hermenean, A.O. Biocompatibility and Antimicrobial Profile of Acid Usnic-Loaded Electrospun Recycled Polyethylene Terephthalate (PET)-Magnetite Nanofibers. Polymers 2023, 15, WOS:001046333500001, doi:10.3390/polym15153282.	Q1
3	Radulescu, D.M.; Neacsu, I.A.; Grumezescu, A.M.; Andronescu, E. New Insights of Scaffolds Based on Hydrogels in Tissue Engineering. Polymers 2022, 14, WOS:000765172900001, doi:10.3390/polym14040799.	Q1
4	Radulescu, D.E.; Neacsu, I.A.; Grumezescu, A.M.; Andronescu, E. Novel Trends into the Development of Natural Hydroxyapatite-Based Polymeric Composites for Bone Tissue Engineering. Polymers 2022, 14, WOS:000769346400001, doi:10.3390/polym14050899.	Q1
5	Niculescu, A.G.; Grumezescu, A.M. An Up-to-Date Review of Biomaterials Application in Wound Management. Polymers 2022, 14, WOS:000759510600001, doi:10.3390/polym14030421.	Q1
6	Niculescu, A.G.; Chircov, C.; Grumezescu, A.M. Magnetite nanoparticles: Synthesis methods-A comparative review. Methods 2022, 199, 16-27, WOS:000760757900004, doi:10.1016/j.ymeth.2021.04.018.	Q1
7	Grumezescu, V.; Grumezescu, A.M.; Ficai, A.; Negut, I.; Vasile, B.S.; Galateanu, B.; Hudita, A. Composite Coatings for Osteoblast Growth Attachment Fabricated by Matrix-Assisted Pulsed Laser Evaporation. Polymers 2022, 14, WOS:000833119200001, doi:10.3390/polym14142934.	Q1
8	Badila, A.E.; Radulescu, D.M.; Ilie, A.; Niculescu, A.G.; Grumezescu, A.M.; Radulescu, A.R. Bone Regeneration and Oxidative Stress: An Updated Overview. Antioxidants 2022, 11, WOS:000764481600001, doi:10.3390/antiox11020318.	Q1
9	Spirescu, V.A.; Chircov, C.; Grumezescu, A.M.; Andronescu, E. Polymeric Nanoparticles for Antimicrobial Therapies: An up-to-date Overview. Polymers 2021, 13, WOS:000628407700001, doi:10.3390/polym13050724.	Q1
10	Modrogan, C.; Caprarescu, S.; Dancila, A.M.; Orbulet, O.D.; Grumezescu, A.M.; Purcar, V.; Raditoiu, V.; Fierascu, R.C. Modified Composite Based on Magnetite and Polyvinyl Alcohol: Synthesis, Characterization, and Degradation Studies of the Methyl Orange Dye from Synthetic Wastewater. Polymers 2021, 13, WOS:000723769100001, doi:10.3390/polym13223911.	Q1
11	Gherasim, O.; Grumezescu, A.M.; Grumezescu, V.; Andronescu, E.; Negut, I.; Bîrca, A.C.; Galateanu, B.; Hudita, A. Bioactive Coatings Loaded with Osteogenic Protein for Metallic Implants. Polymers 2021, 13, WOS:000737292000001, doi:10.3390/polym13244303.	Q1
12	Gherasim, O.; Grumezescu, A.M.; Ficai, A.; Grumezescu, V.; Holban, A.M.; Galateanu, B.; Hudita, A. Composite P(3HB-3HV)-CS Spheres for Enhanced Antibiotic Efficiency. Polymers 2021, 13, WOS:000651936700001, doi:10.3390/polym13060989.	Q1

13	Lee, C.T.; Huang, K.S.; Shaw, J.F.; Chen, J.R.; Kuo, W.S.; Shen, G.X.; Grumezescu, A.M.; Holban, A.M.; Wang, Y.T.; Wang, J.S.; Hsiang, Y.P.; Lin, Y.M.; Hsu, H.H.; Yang, C.H. Trends in the Immunomodulatory Effects of Cordyceps militaris: Total Extracts, Polysaccharides and Cordycepin. Frontiers in Pharmacology 2020, 11, WOS:000598463800001, doi:10.3389/fphar.2020.575704.	Q1

With regard to patent applications, they are itemized as follows:

1. **RO 136024 A0** - Metodă cu plasmă la presiune atmosferică pentru îndepărtarea biofilmelor microbiene dezvoltate pe diferite substraturi, Inventatori: Maya Simionescu, Irina Domnica Titorencu, Ana Maria Roşca, Raluca Ţuţuianu, Mădălina Daniela Iacomi, Vasile Prună, Ioan Lascăr, Ionel Alexandru Checheriţă, Tiberiu Paul Neagu, Laurenţiu Mogoantă, George-Dan Mogoşanu, George- Dan Mogoşanu, Nicolae-Daniel Pirici, Costin Teodor Streba, Alexandra Cătălina Bîrcă, Alexandra Cristina Burduşel, Alexandra Elena Stoica, Alexandru Mihai Grumezescu, Cristina Chircov.

2. **RO 135361 A0** - Hidrogeluri polimerice compozite cu proprietăți antibacteriene și cicatrizante și procedeu de obținere a acestora, Inventatori: Alina Maria Holban, Maria-Elena Zarif, Sorin Vizireanu, Saşa Alexandra Yehia, Alexandra Birca, Alexandru Mihai Grumezescu, Alexandru-Titus Farcasiu, Carmen Curutiu, Lia Mara Ditu, Mariana Carmen Chifiriuc, Gheorghe Dinescu.

Below, the qualitative results pertaining to the **C2** indicator are delineated, focusing on the quality of citations in indexed journals within the Journal Citation Reports Q1, as determined by the influence score.

Table 6. H-index and number of citations in different databases

	Clarivate Analytics	Scopus	Google Scholar
Citations	9471	11404	16455
H-index	48	49	59

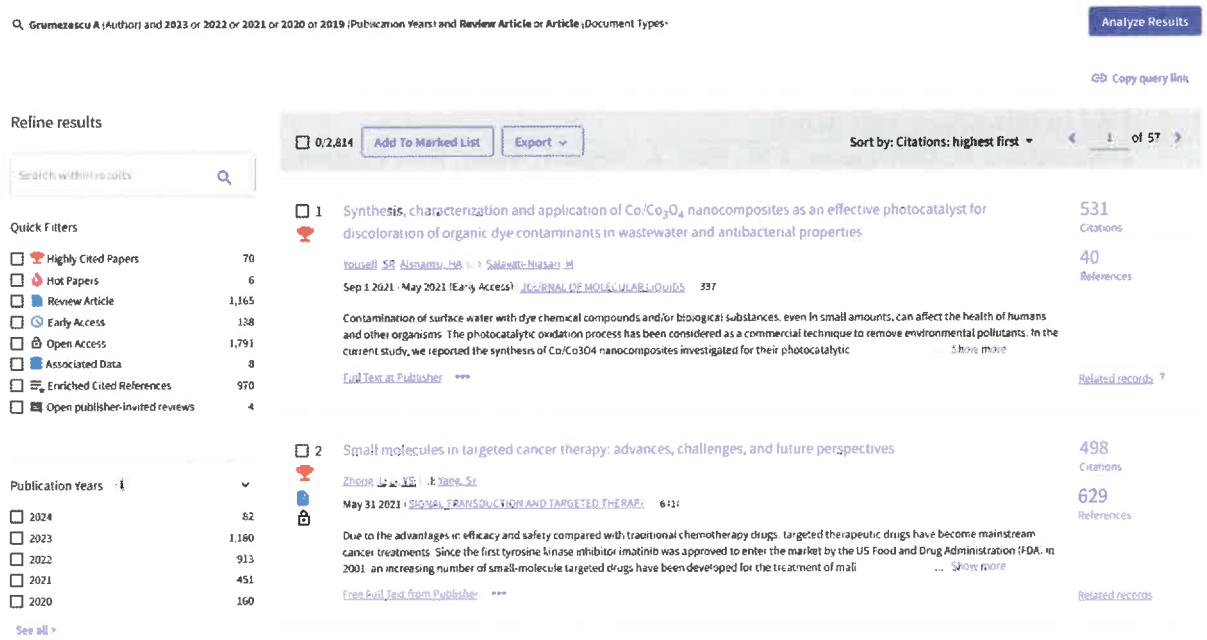


Figure 3. Distribution of citations according to Clarivate analytics.

According to Clarivate Analytics, indexed works have garnered a total of 9471 citations across 7077 articles. In the last 5 years, the published papers have brought together 3124 distributed as follows: published papers by AMG are presented as citations/references in 70 highly cited papers, 6 hot papers, and 1165 review papers (Figure 3).

As for the **C3** indicator, it denotes the ability to attract research funding or collaborate with public and/or private research organizations, assessed through the number and value of research projects won.

Among the notable scientific advancements of the past half-decade, the candidate has emerged as a driving force, spearheading numerous pioneering research projects as the principal investigator and project leader.

One standout achievement from the last five years is the groundbreaking project led by AMG, heralded for its transformative potential in the realm of nanotechnology. This innovative initiative culminated in the development of a multifunctional microfluidic platform of the lab-on-a-chip (LoC) type for nanoparticle manufacturing, titled **"The multifunctional microfluidic platform of the lab-on-a-chip type for the manufacture of nanoparticles"**, TE 103/2020 (13993/09.09.2020; 2147/10.09.2020), with a budget of 431,900 lei.

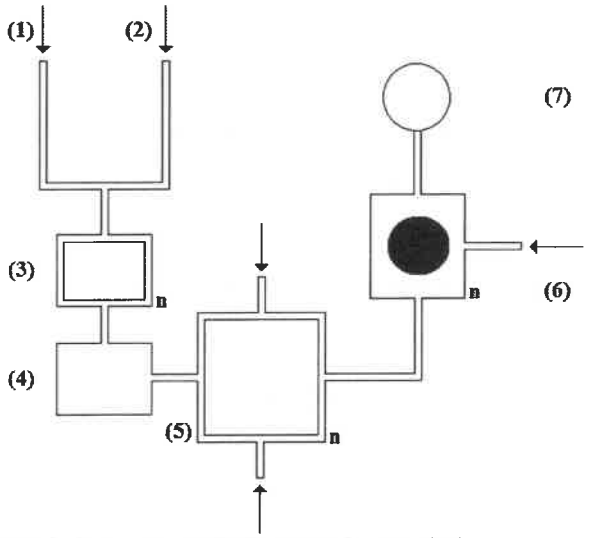


Figure 1. The first configuration for the LoC device proposed for the synthesis of NPs – **(1)** and **(2)** central inlets; **(3)** homogenization circuit(s); **(4)** collecting chamber; **(5)** precipitation and/or functionalization circuit(s); **(6)** washing chamber(s); **(7)** collecting vessel; **n** – shows that the number of the circuits/chambers can be adjusted to optimize the process.

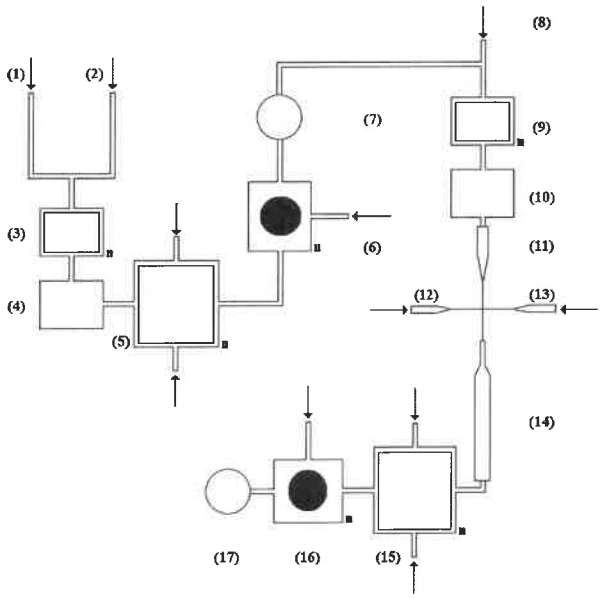


Figure 2. The first configuration for the LoC device proposed for the synthesis of NPs – **(1)** and **(2)** central inlets; **(3)** homogenization circuit(s); **(4)** collecting chamber; **(5)** precipitation and/or functionalization circuit(s); **(6)** washing chambers; **(7)** collecting vessel; **(8)** side inlet for polymer solution; **(9)** homogenization circuit(s); **(10)** collecting chamber; **(11)** middle inlet for the dispersed phase; **(12)** and **(13)** side inlets for the continuous phase; **(14)** outlet containing the microemulsions; **(15)** precipitation circuit(s); **(16)** washing chambers; **(17)** collecting vessel; **n** – shows that the number of the circuits/chambers can be adjusted to optimize the process.

This project holds significant implications across various sectors, particularly in healthcare, where nanotechnology offers promising breakthroughs. Despite nanotechnology's immense potential,

challenges such as limited control of properties and the need for specialized personnel have impeded its widespread adoption. However, this project stands as a beacon of hope, offering a potential solution to these hurdles.

At its core, the project harnesses LoC devices to revolutionize nanoparticle synthesis and drug delivery systems. Leveraging past expertise, the candidate embarked on designing and fabricating an all-in-one LoC device tailored for magnetite nanoparticle synthesis. Additionally, it's aimed to develop a LoC device capable of fabricating polymeric microparticles encapsulating these nanoparticles in a single step. The project's objectives encompassed LoC device fabrication, magnetite nanoparticle synthesis and optimization, and hybrid drug delivery system development. Thorough material characterization ensured precise assessment of physico-chemical properties, ensuring device reproducibility. By pioneering this innovative approach, the project signifies a paradigm shift in nanotechnology, transitioning from variability towards reproducibility. It lays the groundwork for standardized nanomaterial synthesis, unlocking new horizons in disease diagnosis, prevention, treatment, and monitoring. In summary, the development of this multifunctional microfluidic platform represents one of the most significant scientific achievements of the past five years, poised to reshape nanotechnology and drive transformative advancements with profound societal implications (figures 1 and 2).

Amidst the remarkable scientific endeavors of the past half-decade, the groundbreaking project titled "**Aerogel-based magnetic nanocomposites for water decontamination**" (PNRR-III-C9-2022-I- 231/29.11.2022 (760092/23.05.2023), budget – 1.416.895,72 euros) stands out as a beacon of innovation, ushering in transformative advancements in the realm of environmental remediation. Water contamination, a global challenge exacerbated by industrial pollutants and pathogenic microorganisms, demands novel remediation strategies. In recent years, nanomaterials have emerged as promising adsorbents for addressing water pollution. Leveraging microfluidic devices as synthesis platforms offers precise control over synthesis parameters, facilitating the production of nanostructures with tailored properties. Despite significant strides, the synthesis of aerogels via microfluidics remains in its infancy, with no reported aerogel-based composites for water decontamination. This project aims to bridge this research gap by synthesizing an aerogel-based magnetic composite system for water decontamination on a chip. The project delineates four primary objectives: gaining knowledge on theoretical and experimental development, developing a functional prototype, validating the prototype's feasibility, and valorizing the results to enhance project impact. The successful execution of the project will culminate in the functional validation of an aerogel prototype obtained through microfluidic methods, reaching a technological maturity level of TRL 4. This achievement will catalyze positive impacts across various domains, including the acquisition of specialized human resources by the host institution, the project team's expertise enhancement in

microfluidic reactors and magnetic composites synthesis, and the broader scientific community's access to cutting-edge technology for water decontamination, with significant potential for industrial application. In summary, the development of aerogel-based magnetic nanocomposites for water decontamination stands as one of the most remarkable scientific achievements of the past five years, poised to tackle critical environmental challenges and foster sustainable water management practices.

Another innovative initiative is the project "**Cold plasma for fluoride retention improvement and biofilm modulation in dental application**" (271PED/2020, budget of 120,000 Lei for UPB), seeking to pioneer a cold plasma-based solution focused on modulating microbial adhesion and biofilm formation while enhancing fluoride retention in an enamel-like model. Our methodology revolved around rigorously testing cold plasma's efficacy in promoting fluoridation and enhancing fluoride retention within a hydroxyapatite-based enamel-like substrate, aiming to evaluate cold plasma's impact on microbial biofilm development under diverse conditions. Commencing with a conceptual framework centered on cold plasma treatment (TRL 1-2), the project embarks on a journey towards laboratory validation, culminating in the demonstration of plasma's remarkable capability to augment fluoride retention and manipulate microbial biofilm formation within an enamel-like hydroxyapatite-based matrix (TRL 4). This groundbreaking approach holds immense promise for preventing and treating dental caries and enamel deterioration, marking a significant advancement in oral healthcare.

One of the most noteworthy scientific endeavors of recent years is the project "**Bioactive nanostructures for innovative therapeutic strategies**" (45PCCDI/2018 (874/19.04.2018 – project duration 30 months, 130,500 lei for UPB), aiming to revolutionize therapeutic interventions by developing tissue engineering constructs with antibacterial properties to address chronic skin lesions. Chronic wound healing and scar formation pose significant challenges in soft tissue injury treatment. The project seeks to combat these challenges by leveraging organic polymers, exosomes, and nanoparticles to develop advanced tissue engineering constructs. These constructs will harness the regenerative properties of mesenchymal stem cell-derived exosomes and incorporate antibacterial organic nanoparticles like chitosan into a biodegradable organic fibrin hydrogel. By integrating cutting-edge research findings into practical applications, the project aims to significantly enhance wound healing outcomes and minimize scar tissue formation. Ultimately, the project's success holds the promise of introducing groundbreaking approaches to wound healing and tissue regeneration, with far-reaching implications for patient care and interdisciplinary collaboration in the medical field.

As for the **C4** indicator related to the professional prestige, assessed by the degree of recognition/appreciation of the candidate's scientific activity within the international academic community.

In the capacity of Editor, the candidate is a member of the editorial board of esteemed journals, including but not limited to Molecules (IF 4.6), Sci, Nanomaterials (IF 5.3), International Journal of

Molecular Sciences (IF 5.6), Materials (IF 3.4), Fibers (IF 3.9). The editorial acumen of the candidate extends to the successful oversight of eight special issues, thereby demonstrating an adeptness in curating and managing scholarly content with finesse, underscoring a commitment to fostering innovation and advancing knowledge in his research field.

Over the preceding quinquennium, the candidate has wielded a profound influence upon the academic landscape, as evidenced by his publication portfolio spanning various formats and esteemed outlets. With 68 review papers, 50 research papers, 35 editorial materials disseminated through reputable international publishing houses such as Elsevier, the candidate's scholarly contributions have been both extensive and diverse. Moreover, the recognition of his work is proved by the 8 highly cited papers and 1 hot paper, attesting the far-reaching influence of their research pursuits.

Quantitative metrics further corroborate the scholarly impact of the candidate. Across databases such as Clarivate Analytics, Scopus, and Google Scholar, his H-index values of 48, 49, and 59, respectively, with a total citation count of 3124 and a H-index of 30 pertaining solely to papers published within the last 5 years highlight the breadth and depth of the candidate's contributions but also affirm his leading authority within his research field.

In addition, the candidate boasts recognition as a 2013 GTIS (Green Technology Invention Society) Fellow, Taiwan, and a 2015 BS (Biotechnology Society) Fellow, Taiwan, further accentuating his standing as a recognized expert within the academic and scientific communities.

Regarding the **C5** indicator, which pertains to the training of young researchers with remarkable achievements, the most deserving among them are listed in Table 8.

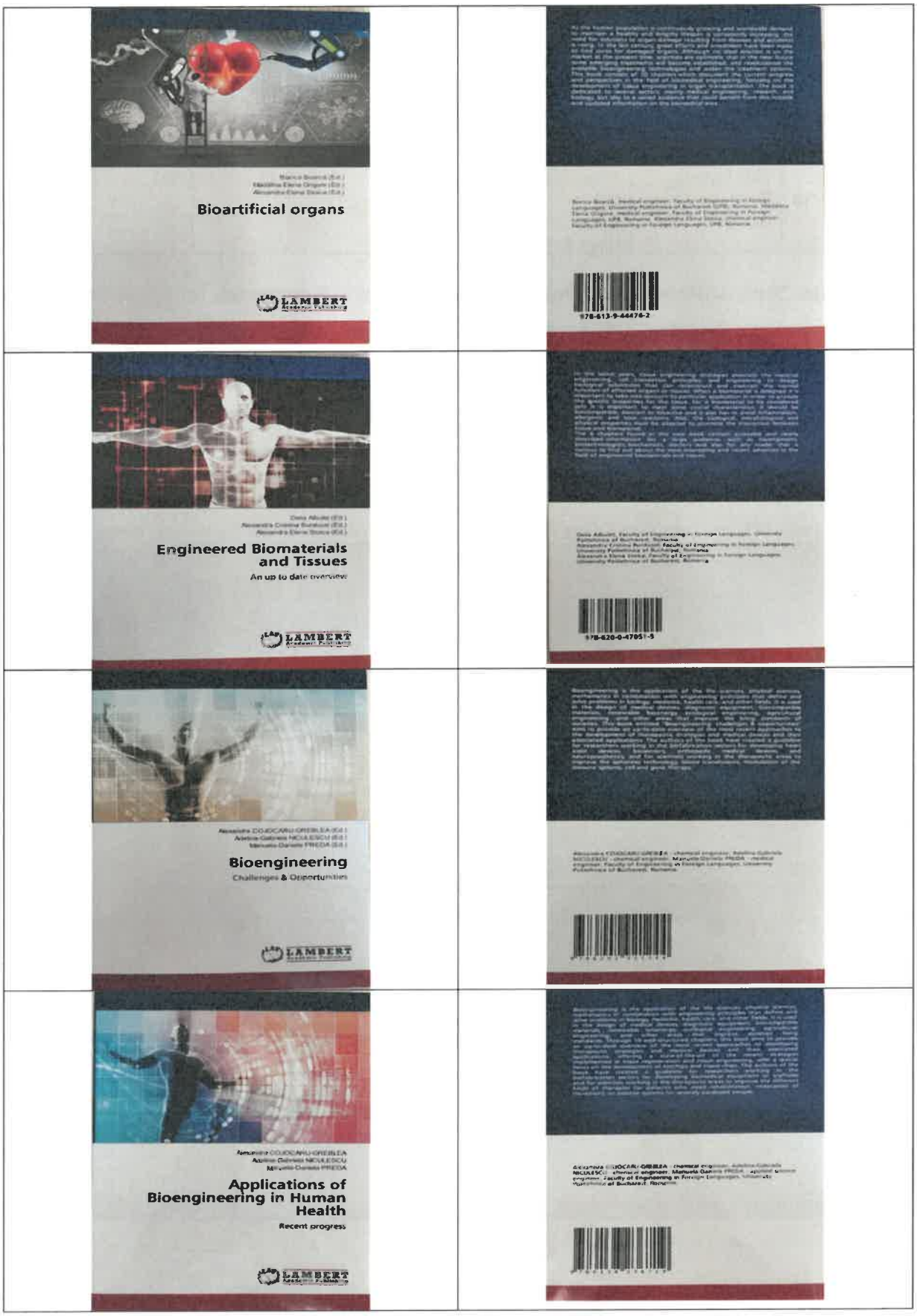
Table 8. Information on young researchers, including their positions, interaction modes, number of articles, H-Index, number of citations, and age. Young researchers from the last 5 years.

Young Researcher	Position	Interaction Mode	Number of Articles	H-Index	Number of Citations	Age
Oana Gherasim	PhD, Scientific Researcher INFLPR	Thesis supervisor for bachelor's and master's degrees, and member of the doctoral supervision committee	27	11	1133	33
Roxana Popescu	PhD, Lecturer at UPB	Thesis supervisor for bachelor's and master's degrees, and member of the doctoral supervision committee	62	18	823	33
Cristina Chircov	PhD, Assistant Professor, UPB	Thesis supervisor for master's degrees, and member of the doctoral supervision committee	50	23	2102	28
Adelina Niculescu	PhD Student, Research Assistant UPB	Thesis supervisor for master's degrees, and doctoral supervisor	49	19	1254	26
Alexandra Burdusel	PhD Student, Research Assistant UPB	Thesis supervisor for master's degrees, and member of the doctoral supervision committee	10	4	950	29

Young Researcher	Position	Interaction Mode	Number of Articles	H-Index	Number of Citations	Age
Alexandra Stoica (Oprea)	PhD	Thesis supervisor for bachelor's and master's degrees, and member of the doctoral supervision committee	29	17	788	31
Alexandra Catalina Birca	PhD Student, Research Assistant UPB	Thesis supervisor for bachelor's and master's degrees, and member of the doctoral supervision committee	48	15	944	29

Since 2017, AMG has established a Master's program in Biomaterials for Tissue Engineering at the Faculty of Engineering in Foreign Languages. Within this Master's program, he is teaching a course on Advanced Biomaterials, where, under his guidance, students have successfully published (from 2019 – onwards) international book chapters every year. The publications are consolidated in books edited by the students themselves, with a selection presented in Table 9 from publications by LAP (Lambert Academic Publishing).

Table 9. Catalog of books authored by students enrolled in the Biomaterials for Tissue Engineering master's program.



Another indicator highlighting involvement in training young researchers is the significant

number of undergraduate, master's, and doctoral students engaged in research activities and scientific document drafting, including articles, literature reviews, and book chapters. The most notable publications from the past 5 years, where students are among the co-authors, are presented in Table 10. From 112 publications from the past 5 years, in 95 of them (~84%), students were involved.

Table 10. A compilation of scholarly articles featuring student involvement over the past five years. The name of the students is underlined.

No	Articles
1	Udriste, A.S.; **Niculescu, A.G.**; Iliuta, L.; Bajeu, T.; Georgescu, A.; Grumezescu, A.M.; Badila, E. Progress in Biomaterials for Cardiac Tissue Engineering and Regeneration. Polymers 2023, 15, WOS:000948210200001, doi:10.3390/polym15051177.
2	**Stoica, A.E.**; **Birca, A.C.**; Mihaiescu, D.E.; Grumezescu, A.M.; Ficai, A.; Herman, H.; Cornel, B.; Rosu, M.; Gharbia, S.; Holban, A.M.; Vasile, B.S.; Andronescu, E.; Hermenean, A.O. Biocompatibility and Antimicrobial Profile of Acid Usnic-Loaded Electrospun Recycled Polyethylene Terephthalate (PET)-Magnetite Nanofibers. Polymers 2023, 15, WOS:001046333500001, doi:10.3390/polym15153282.
3	**Stoica, A.E.**; **Bîrca, A.C.**; **Gherasim, O.**; Ficai, A.; Grumezescu, A.M.; Oprea, O.C.; Vasile, B.S.; Balta, C.; Andronescu, E.; Hermenean, A.O. Electrospun Fibrous Silica for Bone Tissue Engineering Applications. Pharmaceutics 2023, 15, WOS:001019518300001, doi:10.3390/pharmaceutics15061728.
4	**Stoica, A.E.**; **Albulet, D.**; **Birca, A.C.**; Iordache, F.; Ficai, A.; Grumezescu, A.M.; Vasile, B.S.; Andronescu, E.; Marinescu, F.; Holban, A.M. Electrospun Nanofibrous Mesh Based on PVA, Chitosan, and Usnic Acid for Applications in Wound Healing. International Journal of Molecular Sciences 2023, 24, WOS:001031014000001, doi:10.3390/ijms241311037.
5	**Puiu, R.A.**; **Birca, A.C.**; Grumezescu, V.; Duta, L.; Oprea, O.C.; Holban, A.M.; Hudita, A.; Galateanu, B.; Balaure, P.C.; Grumezescu, A.M.; Andronescu, E. Multifunctional Polymeric Biodegradable and Biocompatible Coatings Based on Silver Nanoparticles: A Comparative In Vitro Study on Their Cytotoxicity towards Cancer and Normal Cell Lines of Cytostatic Drugs versus Essential-Oil-Loaded Nanoparticles and on Their Antimicrobial and Antibiofilm Activities. Pharmaceutics 2023, 15, WOS:001038852100001, doi:10.3390/pharmaceutics15071882.
6	**Preda, M.D.**; **Popa, M.I.** .; Neacsu, I.A.; Grumezescu, A.M.; Ginghina, O. Antimicrobial Clothing Based on Electrospun Fibers with ZnO Nanoparticles. International Journal of Molecular Sciences 2023, 24, WOS:000914982900001, doi:10.3390/ijms24021629.
7	**Popa, M.I.**; **Preda, M.D.**; Neacsu, I.A.; Grumezescu, A.M.; Ginghina, O. Traditional vs. Microfluidic Synthesis of ZnO Nanoparticles. International Journal of Molecular Sciences 2023, 24, WOS:000930402800001, doi:10.3390/ijms24031875.
8	**Niculescu, A.G.**; Morosan, A.; **Bîrca, A.C.**; **Gherasim, O.**; Oprea, O.C.; Vasile, B.S.; Purcareanu, B.; Mihaiescu, D.E.; Radulescu, M.; Grumezescu, A.M. Microwave-Assisted Silanization of Magnetite Nanoparticles Pre-Synthesized by a 3D Microfluidic Platform. Nanomaterials 2023, 13, WOS:001095122300001, doi:10.3390/nano13202795.
9	Najm, A.; **Niculescu, A.G.**; Gaspar, B.S.; Grumezescu, A.M.; Beuran, M. A Review of Abdominal Meshes for Hernia Repair-Current Status and Emerging Solutions. Materials 2023, 16, WOS:001120847700001, doi:10.3390/ma16227124.
10	Costachescu, B.; **Niculescu, A.G.**; Grumezescu, A.M.; Teleanu, D.M. Screw Osteointegration-Increasing Biomechanical Resistance to Pull-Out Effect. Materials 2023, 16, WOS:001062329400001, doi:10.3390/ma16165582.
11	**Burdusel, A.C.**; Neacsu, I.A.; **Birca, A.C.**; **Chircov, C.**; Grumezescu, A.M.; Holban, A.M.; Curutiu, C.; Ditu, L.M.; Stan, M.; Andronescu, E. Microwave-Assisted Hydrothermal Treatment of Multifunctional Substituted Hydroxyapatite with Prospective Applications in Bone Regeneration. Journal of Functional Biomaterials 2023, 14, WOS:001038744800001, doi:10.3390/jfb14070378.
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15	Teleanu, R.I.; **Niculescu, A.G.**; Roza, E.; Vladâcenco, O.; Grumezescu, A.M.; Teleanu, D.M. Neurotransmitters-Key Factors in Neurological and Neurodegenerative Disorders of the Central Nervous System. International Journal of Molecular Sciences 2022, 23, WOS:000808851300001, doi:10.3390/ijms23115954.
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18	Paduraru, D.N.; **Niculescu, A.G.**; Bolocan, A.; Andronic, O.; Grumezescu, A.M.; Bîrla, R. An Updated Overview of Cyclodextrin-Based Drug Delivery Systems for Cancer Therapy. Pharmaceutics 2022, 14, WOS:000845693100001, doi:10.3390/pharmaceutics14081748.
19	Paduraru, D.N.; Ion, D.; **Niculescu, A.G.**; Musat, F.; Andronic, O.; Grumezescu, A.M.; Bolocan, A. Recent Developments in Metallic Nanomaterials for Cancer Therapy, Diagnosing and Imaging Applications. Pharmaceutics 2022, 14, WOS:000764651600001, doi:10.3390/pharmaceutics14020435.
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22	**Niculescu, A.G.**; Grumezescu, A.M. An Up-to-Date Review of Biomaterials Application in Wound Management. Polymers 2022, 14, WOS:000759510600001, doi:10.3390/polym14030421.
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27	Hudita, A.; Grumezescu, V.; **Gherasim, O.**; Grumezescu, A.M.; Dorcioman, G.; Negut, I.; Oprea, O.C.; Vasile, B.S.; Galateanu, B.; Curutiu, C.; Holban, A.M. MAPLE Processed Nanostructures for Antimicrobial Coatings. International Journal of Molecular Sciences 2022, 23, WOS:000897271800001, doi:10.3390/ijms232315355.
28	**Florea, D.A.**; Grumezescu, V.; **Bîrca, A.C.**; Vasile, B.S.; Musat, M.; **Chircov, C.**; Stan, M.S.; Grumezescu, A.M.; Andronescu, E.; Chifiriuc, M.C. Design, Characterization, and Antibacterial Performance of MAPLE-Deposited Coatings of Magnesium Phosphate-Containing Silver Nanoparticles in Biocompatible Concentrations. International Journal of Molecular Sciences 2022, 23, WOS:000833833900001, doi:10.3390/ijms23147910.
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49	**Puiu, R.A.**; Balaure, P.C.; Constantinescu, E.; Grumezescu, A.M.; Andronescu, E.; Oprea, O.C.; Vasile, B.S.; Grumezescu, V.; Negut, I.; Nica, I.C.; Stan, M.S. Anti-Cancer Nanopowders and MAPLE-Fabricated Thin Films Based on SPIONs Surface Modified with Paclitaxel Loaded β-Cyclodextrin. Pharmaceutics 2021, 13, WOS:000701408500001, doi:10.3390/pharmaceutics13091356.
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Scopus ID: 36503987100
Researcher ID: I-8181-2012, I-8181-2012
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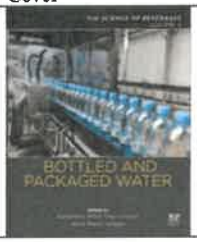
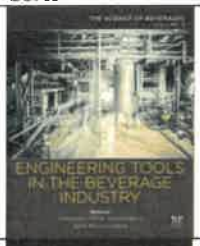
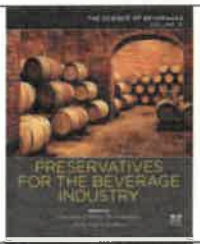
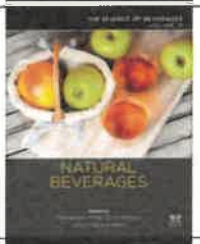
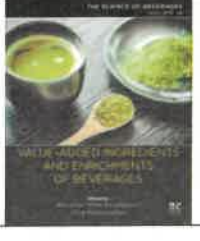
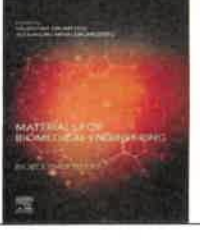
1		Alexandru Mihai Grumezescu, Alina Maria Holban: Nanoengineering in the Beverage Industry, ISBN: 9780128172841, Academic Press, USA, 2019	17		Alexandru Mihai Grumezescu, Alina Maria Holban: Bottled and Packaged Water, ISBN: 9780128157046, Academic Press, USA, 2019

No.	Cover	Details	No.	Cover	Details
2		Alexandru Mihai Grumezescu, Alina Maria Holban: Biotechnological Progress and Beverage Consumption, ISBN: 9780128172858, Academic Press, USA, 2019	18		Alexandru Mihai Grumezescu, Alina Maria Holban: Engineering Tools in the Beverage Industry, ISBN: 9780128156988, Academic Press, USA, 2019
3		Alexandru Mihai Grumezescu, Alina Maria Holban: Safety Issues in Beverage Production, ISBN: 9780128166802, Academic Press, USA, 2019	19		Valentina Grumezescu, Alexandru Mihai Grumezescu: Materials for Biomedical Engineering, ISBN: 9780081028155, Elsevier, USA, 2019
4		Alexandru Mihai Grumezescu, Alina Maria Holban: Quality Control in the Beverage Industry, ISBN: 9780128166826, Academic Press, USA, 2019	20		Alina Maria Holban, Alexandru Mihai Grumezescu: Materials for Biomedical Engineering: Organic Micro and Nanostructures, ISBN: 9780128184349, Elsevier, USA, 2019
5		Alexandru Mihai Grumezescu, Alina Maria Holban: Trends in Beverage Packaging, ISBN: 9780128166840, Academic Press, USA, 2019	21		Alina Maria Holban, Alexandru Mihai Grumezescu: Materials for Biomedical Engineering: Bioactive Materials for Antimicrobial, Anticancer, and Gene Therapy, ISBN: 9780128184363, Elsevier, USA, 2019
6		Alexandru Mihai Grumezescu, Alina Maria Holban: Preservatives and Preservation Approaches in Beverages, ISBN: 9780128166864, Academic Press, USA, 2019	22		Valentina Grumezescu, Alexandru Mihai Grumezescu: Materials for Biomedical Engineering: Bioactive Materials, Properties, and Applications, ISBN: 9780128184325, Elsevier, USA, 2019
7		Alexandru Mihai Grumezescu, Alina Maria Holban: Natural Beverages, ISBN: 9780128166901, Academic Press, USA, 2019	23		Valentina Grumezescu, Alexandru Mihai Grumezescu: Materials for Biomedical Engineering: Absorbable Polymers, ISBN: 9780128184165, Elsevier, USA, 2019
8		Alexandru Mihai Grumezescu, Alina Maria Holban: Value-Added Ingredients and Enrichments of Beverages, ISBN: 9780128166888, Academic Press, USA, 2019	24		Valentina Grumezescu, Alexandru Mihai Grumezescu: Materials for Biomedical Engineering: Biopolymer Fibers, ISBN: 9780128168738, Elsevier, USA, 2019

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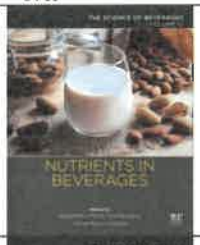
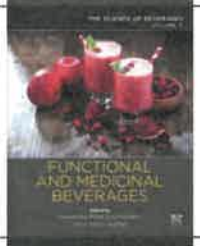
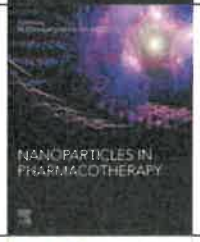
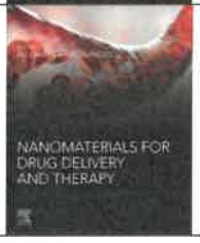
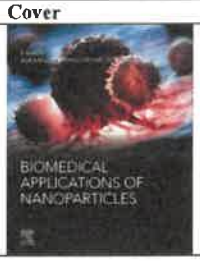
9		Alexandru Mihai Grumezescu, Alina Maria Holban: Nutrients in Beverages, ISBN: 9780128169254, Academic Press, USA, 2019	25		Alina Maria Holban, Alexandru Mihai Grumezescu: Materials for Biomedical Engineering: Hydrogels and Polymer-based Scaffolds, ISBN: 9780128169025, Elsevier, USA, 2019
10		Alexandru Mihai Grumezescu, Alina Maria Holban: Functional and Medicinal Beverages. ISBN: 9780128172636, Academic Press, USA, 2019	26		Alina Maria Holban, Alexandru Mihai Grumezescu: Materials for Biomedical Engineering: Nanomaterials-based Drug Delivery, ISBN: 9780128169148, Elsevier, USA, 2019
11		Alexandru Mihai Grumezescu, Alina Maria Holban: Sports and Energy Drinks, ISBN: 9780128165294, Academic Press, USA, 2019	27		Valentina Grumezescu, Alexandru Mihai Grumezescu: Materials for Biomedical Engineering: Thermoset and Thermoplastic Polymers, ISBN: 9780128168752, Elsevier, USA, 2019
12		Alexandru Mihai Grumezescu, Alina Maria Holban: Milk-Based Beverages, ISBN: 9780128157114, Academic Press, USA, 2019	28		Alina Maria Holban, Alexandru Mihai Grumezescu: Materials for Biomedical Engineering: Nanobiomaterials in Tissue Engineering, ISBN: 9780128169100, Elsevier, USA, 2019
13		Alexandru Mihai Grumezescu, Alina Maria Holban: Caffeinated and Cocoa Based Beverages, ISBN: 9780128158654, Academic Press, USA, 2019	29		Alexandru Mihai Grumezescu: Nanoparticles in Pharmacotherapy, ISBN: 9780128166284, William Andrew, USA, 2019
14		Alexandru Mihai Grumezescu, Alina Maria Holban: Alcoholic Beverages, ISBN: 9780128157015, Academic Press, USA, 2019	30		Alexandru Mihai Grumezescu: Nanoarchitectonics in Biomedicine, ISBN: 9780128172612, William Andrew, USA, 2019
15		Alexandru Mihai Grumezescu, Alina Maria Holban: Non-alcoholic Beverages, ISBN: 9780128157022, Academic Press, USA, 2019	31		Alexandru Mihai Grumezescu: Nanomaterials for Drug Delivery and Therapy, ISBN: 9780128166291, Elsevier, USA, 2019

No.	Cover	Details	No.	Cover	Details
16		Alexandru Mihai Grumezescu, Alina Maria Holban: Fermented Beverages. ISBN: 9780128157039, Academic Press, USA, 2019	32		Alexandru Mihai Grumezescu: Biomedical Applications of Nanoparticles. ISBN: 97801281663 07, William Andrew, USA, 2019

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

(i). **The multifunctional microfluidic platform of the lab-on-a-chip type for the manufacture of nanoparticles**, TE 103/2020 (13993/09.09.2020; 2147/10.09.2020), with a budget of 431,900 lei – principal investigator.

(ii). **Aerogel-based magnetic nanocomposites for water decontamination**" (PNRR-III-C9-2022-I- 231/29.11.2022 (760092/23.05.2023), budget – 1.416.895,72 euros – project leader.

(iii). **Cold plasma for fluoride retention improvement and biofilm modulation in dental application**" (271PED/2020, budget of 120,000 Lei for UPB – responsible from the partner.

(iv). **Bioactive nanostructures for innovative therapeutic strategies**" (45PCCDI/2018 (874/19.04.2018 – project duration 30 months, 130,500 lei for UPB – responsible from the partner.

10. List of patents (applications)

(i). **RO 136024 A0** - Metodă cu plasmă la presiune atmosferică pentru îndepărtarea biofilmelor microbiene dezvoltate pe diferite substraturi, Inventatori: Maya Simionescu, Irina Domnica Titorencu, Ana Maria Roşca, Raluca Ţuţuianu, Mădălina Daniela Iacomi, Vasile Prună, Ioan Lascăr, Ionel Alexandru Checheriţă, Tiberiu Paul Neagu, Laurenţiu Mogoantă, George-Dan Mogoşanu, George- Dan Mogoşanu, Nicolae-Daniel Pirici, Costin Teodor Streba, Alexandra Cătălina Bîrcă, Alexandra Cristina Burduşel, Alexandra Elena Stoica, Alexandru Mihai Grumezescu, Cristina Chircov.

(ii). **RO 135361 A0** - Hidrogeluri polimerice compozite cu proprietăți antibacteriene și cicatrizante și procedeu de obținere a acestora, Inventatori: Alina Maria Holban, Maria-Elena Zarif, Sorin Vizireanu, Saşa Alexandra Yehia, Alexandra Birca, Alexandru Mihai Grumezescu, Alexandru-Titus Farcasiu, Carmen Curutiu, Lia Mara Ditu, Mariana Carmen Chifiriuc, Gheorghe Dinescu.