Annex no. 1 – Award request*

1. **Candidate**

Research team: **Advanced Polymer Materials Group**

Group Leader: **Prof. Horia Iovu**

Doctor of the year (copy of doctor's degree or equivalent is presented): 1996

Position: Professor, Vice-Rector for Doctoral Education Studies

Institution: National University of Science and Technology Politehnica of Bucharest

Phone mobile:

Email address:

2. **"Romanian Research Gala" edition: 2024**
3. **Award and category for which they apply (research team)**: Energy and advanced materials – "Nicolae Vasilescu Karpen" Prize
4. **Team leader**: Prof. Horia Iovu, Leader of the Advanced Polymeric Materials Research Group
5. Components of the research team, if applicable (name of team members, position occupied, year of last diploma awarded):
   1. Horia Iovu, Professor Dr. Eng (Team Leader), PhD diploma 1996
   2. Catalin Zaharia, Professor Dr. Eng, PhD Diploma 2007
   3. Paul Stănescu, Professor Dr. Eng, PhD Diploma 2005
   4. Sorina Gârea, Professor Dr. Eng, PhD Diploma 2007
   5. Mariana Ioniță, Professor Dr. Eng, PhD Diploma 2008
   6. Ștefan Voicu, Professor Dr. Eng, PhD Diploma 2008
   7. Izabela Cristina Stancu, Professor Dr. Eng, PhD Diploma 2003
   8. Adriana Lungu, Associate Professor, PhD Diploma 2009
   9. Celina Damian, Lecturer, PhD Diploma 2012
   10. Adi Ghebaur, Lecturer, PhD Diploma 2012
   11. Brindușa Bășănucă, Lecturer, PhD Diploma 2015
   12. Ionuț Cristian Radu, Lecturer, PhD Diploma 2021
   13. Elena Iuliana Biru, Lecturer, PhD Diploma 2020
   14. Andrada Serafim, Scientific Researcher III, PhD Diploma 2013
   15. Jana Ghițman, Scientific Researcher III, PhD Diploma 2018

16. Marian Verziu, Scientific Researcher III, PhD Diploma 2010
17. Minodora Marin, Research Assistant, PhD Diploma 2023
18. Madalina Oprea, Research Assistant, PhD Diploma 2023
19. Elena Olăreț, Research Assistant, PhD Diploma 2023
20. Mădălina Ioana Necolau, Assistant Professor, MSc Diploma 2020
21. Toader Alin Georgian, Research Assistant, MSc Diploma 2022
22. Andra Onaș, Research Assistant, MSc Diploma 2021
23. Carmen Nicolae, Research Assistant, MSc Diploma 2020
24. Ana Roxana Ștefan, Research Assistant, BSc diploma 2021
25. Adriana Zainea, Research Assistant, MSc diploma 2023
26. Nicoleta Adina Trandaș, Research Assistant, BSc diploma 2021

6. A description of the most important scientific achievements of the last 5 years (max. 4 pages, A4 format, Times New Roman characters, 12 points, line spacing of 1.5 and margins of 2 cm)**.

Prof. Iovu is the Leader of the Advanced Polymer Materials Group (www.apmg.pub.ro) from 2008, which now includes 14 experienced researchers, 14 PhD students, 4 postdocs and 3 MSc students. APMG develops high-quality research in the following areas: polymer-based nanocomposites, biopolymers, polymeric tissue engineering, graphene oxide/carbon nanotube-based hybrids, hybrid dental nanomaterials, modeling and prediction of nanocomposite properties. APMG facilities include 8 laboratories dedicated to the synthesis and characterization of nanomaterials (https://erris.gov.ro/APMG-UPB), which are coordinated by Prof. Iovu. Moreover, Prof. Iovu supervised 25 PhD students who obtained their PhD in Chemical Engineering field.

Main research areas: synthesis of polymer-based nanomaterials, with a particular focus on polybenzoxazine-based nanocomposites; synthesis and characterization of hybrid nanomaterials based on graphene oxide/graphene and biopolymers, 3D printing of biopolymer materials for tissue engineering and regenerative medicine, protein engineering for the development of graphene-based proteins as novel materials for bioengineering. **Prof. Iovu is author/co-author of over 260 papers in international journals, 20 books / book chapters at national or international publishers** (such as Wiley, Elsevier, Taylor and Francis- **see List of publications), 10 patents and has coordinated more than 20 national and international research projects.**

Citations of the Group Leader research considered relevant:

1. M. Ionita, M. A. Pandele, **H. Iovu**, Sodium alginate/graphene oxide composite films with enhanced thermal and mechanical properties. Carbohydr. Polym. **2013**, 94, 339-344. *Cited by: Ding, JH; Zhao, HR; Yu, HB, **Bioinspired strategies for making superior graphene composite coatings**, **Chemical Engineering Journal**, 435(1) 2022, 134808, **IF=15.1.***
2. Cernencu, A. I.; Lungu, A.; Stancu, I.-C.; Serafim, A.; Heggset, E.; Syverud, K.; **Iovu, H.** Bioinspired 3d Printable Pectin-Nanocellulose Ink Formulations. Carbohydr. Polym. **2019**, 220, 12– 21. Cyted by: *Solhi, L; Guccini, V; Heise, K; Solala, I; Niinivaara, E; Xu, WY; Mihhels, K; Kroger, M; Meng, ZJ; Wohlert, J; Tao, H; Cranston, ED; Kontturi, E, **Understanding Nanocellulose-Water Interactions: Turning a Detriment into an Asset**, **CHEMICAL REVIEWS**, 123(5), 2023, pp. 1925-2015, **IF=62.1.***
3. A. I. Cernencu, A. Lungu, I. C. Stancu, A. Serafim, E. Heggset, K. Syverud, **H. Iovu**, Bioinspired 3D printable pectin-nanocellulose ink formulations, Carbohydrate Polymers, 220,

2019, 12-21. Cited by: *Zhou, GQ; Li, MC; Liu, CZ; Wu, QL; Mei, CT,* ***3D Printed Ti3C2Tx MXene/Cellulose Nanofiber Architectures for Solid-State Supercapacitors: Ink Rheology, 3D Printability, and Electrochemical Performance,*** ***Advanced Functional Materials****, 32(14), 2022, 2109593,* ***IF=19****.*

4. A. I. Cernencu, A. Lungu, I. C. Stancu, A. Serafim, E. Heggset, K. Syverud, **H. Iovu**, Bioinspired 3D printable pectin-nanocellulose ink formulations,Carbohydrate Polymers, 220, 2019, 12-21. Cited by: *Wen, Y; Che, QT; Kim, HW; Park, HJ,* ***Potato starch altered the rheological, printing, and melting properties of 3D-printable fat analogs based on inulin emulsion-filled gels,*** ***Carbohydrate Polymers****, 269, 2021, 118285,* ***IF=11.2****.*
5. J. Ghitman, E.I. Biru, R. Stan, **H. Iovu**, Review of hybrid PLGA nanoparticles: future of smart drug delivery and theranostics medicine, Mater. Des., 193 (2020), 108805. Cited by: *Rajana, N; Mounika, A; Chary, PS; Bhavana, V; Urati, A; Khatri, D; Singh, SB; Mehra, NK,* ***Multifunctional hybrid nanoparticles in diagnosis and therapy of breast cancer,*** ***JOURNAL OF CONTROLLED RELEASE****, 352, 2022, 1024-1047,* ***IF=10.8****.*

Prof. Iovu held over 25 plenary lectures at national and international scientific events. **Prof. Iovu has also been a invited speaker at the following prestigious universities**:

1. ETH Zurrich – invited by Prof. Dieter Schluter at the Department of Materials on 12.11.2015; presentation title: ***Polybenzoxazine-based nanocomposites***;
2. University of Valencia – invited by Prof. Julia Perez at the Institut de Ciència Molecular on 15.11.2017; Presentation title: ***From polymer-based nanomaterials to bionanomaterials***;
3. University of Texas at Dallas – invited by Prof. Mihaela Stefan at the Department of Chemistry and Biochemistry on 19.06.2023; Presentation title: ***Advanced drug delivery systems for biomedical applications***.

Prof. Iovu has been a member of several international doctoral committees at foreign universities, such as: **University of Haute-Alsace-France**: May 30, 2018; Supervisor Prof. Dr. Christelle Dellaite; Ph.D. student: Corna-Lenuta Savin; Doctoral thesis title: "***Biomaterials based on modified polysaccharides, micro/nanoparticles and films, for controlled release of active ingredients***".

SIGNIFICANT RESULTS

1. Prof. Iovu is the founder of the Advanced Polymer Materials Group (http://www.apmg.pub.ro/) in NUSTPB since 2008. He continued to coordinate the research team and was involved in coordinating and running more than 35 research projects throughout his career. Following the

coordination of these projects, **Prof. Iovu developed the research infrastructure by attracting young researchers and creating in time more than 20 full-time research jobs.**

2. Prof. Iovu's research activity has generated significant scientific results recognized nationally and internationally, publishing over 280 WoS rated scientific articles in prestigious polymer journals, with more than 4500 citations internationally https://scholar.google.com/citations?user=nDQvqcgAAAAJ&hl=ro&oi=sra).
3. Prof. Iovu is also the **Editor-in-Chief of WOS-rated Materiale Plastice Journal** https://revmaterialeplastice.ro/RCBoard.asp .
4. Together with his research team, **Prof. Iovu is the organizer of the 3rd International Conference on Bioengineering an Polymer Science** at NUSTPB (http://www.bpc-apmg.upb.ro/). The conference has been organized at the National University of Science and Technology Politehnica Bucharest since 2018 and brings together prestigious researchers at national and international level in the field of polymeric materials and bioengineering, placing Romanian research at international level. Morever, between January 25-28, 2023 Prof. Iovu organized along APMG the **Winter School of Bioengineering**, in collaboration with the Technical University of Madrid within the European Engineering Learning Innovation and Science Alliance (EELISA). The Winter School was hosted by NUSTPB and gathered students and professors from Eelisa – European University members – FAU Erlangen-Nürnberg (Germany), Universidad Politécnica de Madrid (Spain) and NUSTPB (https://upb.ro/calendar-evenimente/eelisa-winter-school-of-bioengineering/).
5. Prof. Iovu was the director of the **INOVABIOMED** project (Innovative technologies for ensuring the quality of materials in health, energy and environment – Center for Innovative Manufacturing Solutions for Smart Biomaterials and BIOMEDICAL Surfaces) with a value of approximately 14,000,000 Euro (66,761,485.81 lei) from European funds (2016-2020), representing **one of the most important scientific and managerial projects in the biomedical field**. The project was won on the first position in the competition Competition: POC-A.1-A.1.1.1- F-2015 (Large Research Infrastructures) and was implemented in NUSTPB, being dedicated to the **development of advanced research** by purchasing 56 high-performance equipment (Nano-FTIR, Micro-CT, Nano-CT, Nanoindenter, TerraHertz, Circular Dichroism, 3D Bioprinter, etc.). Following this research project implemented by Prof. Iovu as project director and his research team, 10 new research laboratories were established in NUSTPB and 6 other research laboratories in the university were modernized.

6. Prof. Iovu is the director of the **eBio-hub project: BIOMEDICAL ENGINEERING RESEARCH CENTER** (2023-2027) won in the Horizon 2021-2027 Program competition - HORIZON-WIDERA-2022-TALENTS-01 with the aim of establishing within NUSTPB a highly competitive interdisciplinary research center in bioengineering operating at the interface between chemistry, biology, IT, micro and nanotechnology and medicine and designed to develop micro solutions, nano and bio-integrated to address major global challenges in the biomedical field. Through coordination and implementation activities (establishment of an interdisciplinary Doctoral Program in Bioengineering, strengthening researchers' mobility and knowledge flow, promoting gender equality and diversity in science, etc.) the eBio-hub will be an example of good practice at international level. The eBio-hub project will be implemented during 2023-2027 and is funded by the European Union, based on the financing contract concluded with the European Research Executive Agency (REA) under the powers delegated by the European Commission, and the total related value is EUR 2,500,000.

POSITIONS AT NATIONAL/INTERNATIONAL LEVEL

- Dean, Faculty of Applied Chemistry and Materials Science (2004-2012)
- Vice-Rector for Doctoral Education, since 2012
- President of the Romanian Society for Biomaterials (2008-2012)
- President of the Commission of Chemical Engineering for awording the National Titles, Diploma and Certificates (CNADTCU)
- Co-Chair of Bologna Fellow-up Group (BFUG) for tertiary education in Europe
- Visiting professor at University of Toulon (France), 2023
- Member of the European Universities Association (EUA) – Innovation Group, 2022.

PROFESSIONAL ASSOCIATIONS

- President of the Section "Organic and Macromolecular Chemistry" of the Romanian Chemistry Society
- Fellow of the Royal Society of Chemistry (FRSC), since 2019
- Member of the Academy of Romanian Scientists (AOSR), since 2018.

AWARDS

- Doctor Honoris Causa – Petroleum-Gas University of Ploiesti, Romania, 2019

Prof. Dr. Horia Iovu – Leader of the Advanced Polymer Materials Group
Curriculum Vitae

Prof. Horia **Iovu**

Gender: Male

e-mail address:

Date of birth: 10th December 1961

Nationality: Romanian

Address:

DEGREES

- 1995, PhD in Polymer Science and Engineering – University Politehnica of Bucharest
- 1986, BSc in Chemical Engineering, Specialization Tehnology of Macromolecular Compunds, Faculty of Industrial Chemistry, University Politehnica of Bucharest, ranked 1st.

DIPLOMAS

- 2019, Doctor Honoris Causa – Petroleum-Gas University of Ploieşti, Romania
- 2004, PhD Supervisor in Chemical Engineering field appointed by the Order of Ministry of Education no. 3003/7.01.2004

SPECIALIZATIONS

- 1994-1995, Manchester Metropolitan University, UK, in the field of Composite Materials
- 2014, Academic Teaching Excellence Course, British Council, Romania

PROFESSIONAL EXPERIENCE

1989-1993: Assistant Professor; 1993-1997: Lecturer; 1997-1999: Associate Professor; 1999-present: Professor, Department of Bioresources and Polymer Science, Faculty of Applied Chemistry and Materials Science, University Politehnica of Bucharest.

Courses taught: The Science of organic materials and composites; Polymeric Biomaterials; Composite Design; Polymer Technology; Carbon-based biomaterials with biomedical applications; Proteins Engineering; Advanced Methods for Characterization of Polymers and Biopolymers.

SCIENTIFIC ACTIVITY

Main research fields: synthesis of polymer-based nanomaterials with a particular focus on polybenzoxazine (PBZ)-based nanocomposites; synthesis and characterization of hybrid nanomaterials

based on graphene/graphene oxide and biopolymers, protein engineering for developing graphene-supported proteins as new materials for bioengineering.

Prof. Iovu is the Group Leader of Advanced Polymer Materials Group (www.apmg.pub.ro) since 2008 which includes now 14 experienced researchers, 14 PhDs and 5 postdocs. The APMG develops high-quality research in the following fields: polymer-based nanocomposites, biopolymers, tissue engineering, polymer scaffolds, hybrids based on graphene oxide/carbon nanotubes, hybrid dental nanomaterials, modelling and predicting of hybrid nanocomposite properties. The APMG facilities include 8 laboratories devoted to synthesis and characterisation of nanomaterials (https://erris.gov.ro/APMG-UPB), which are coordinated by Prof. Iovu. Moreover, Prof. Iovu has supervised 25 PhD students who got the PhD title in Chemical Engineering.

SCIENTIFIC OUTPUT

Prof. Iovu has authored/co-authored more than 260 papers in international journals, 20 books/book chapters at national or international publishers (1 in Wiley, 2 in Elsevier, 1 in Taylor and Francis), 10 patents and he coordinated more than 20 national and international research projects. He presented more than 25 plenary lectures at national and international scientific events. Prof. Iovu also has been an invited speaker to the following prestige universities:

1. ETH Zurrich – invited by Prof. Dieter Schluter in the Department of Materials on 12.11.2015; title of presentation: ***Polybenzoxazine-based nanocomposites***;
2. University of Valencia – invited by Prof. Julia Perez at the Instituto de Ciencia Molecular on 15.11.2017; title of presentation: ***From polymer-based nanomaterials to bionanomaterials***;
3. University of Texas at Dallas – invited by Prof. Mihaela Stefan at the Department of Chemistry and Biochemistry on 19.06.2023; Presentation title: ***Advanced drug delivery systems for biomedical applications***.

Prof. Iovu was member of many international commission of doctorate candidates at foreign universities, such as: Universite de Haute –Alsace-France: 30 May 2018; Supervisor Prof dr. Christelle Dellaite; PhD candidate: Corna-Lenuta Savin; Thesis title: "***Biomateriaux a base de polysaccharides modifies, micro/nanoparticules et films, pour la liberation controllee de principes actifs***".

SCIENTOMETRIC INDICATORS

- Publications: 274 (total), 80 (main author)
- H-index: 30 (Web of Science), 32 (Scopus), 35 (Google Scholar)

POSITIONS AT NATIONAL/INTERNATIONAL LEVEL

- Dean, Faculty of Applied Chemistry and Materials Science (2004-2012)

- Vice-Rector for Doctoral Education, since 2012
- President of the Romanian Society for Biomaterials (2008-2012)
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- President of the Section "Organic and Macromolecular Chemistry" of the Romanian Chemistry Society
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- Member of the Academy of Romanian Scientists (AOSR), since 2018.

AWARDS

- Doctor Honoris Causa – Petroleum-Gas University of Ploiesti, Romania, 2019

SHORT BIO

Prof. Horia Iovu is the Head of the Advanced Polymeric Materials Group (APMG)-**Faculty of Chemical Engineering and Biotechnology. Prof. Iovu is also the Director of UPB Council for Doctoral Education (Provost position)** and one of the top scientists in UPB. Prof. Iovu`s research activity generated significant scientific results recognized nationally and internationally. Prof. Iovu was directly involved and coordinated more than 20 research projects during his career. He founded the APMG (http://www.apmg.pub.ro/) in UPB in 2008, and continued to coordinate the research team. Along with his research team, **Profesor Iovu is the organizer of the 3rd International Conference on Bioengineering an Polymer Science** at UPB (http://www.bpc-apmg.upb.ro/). The conference has been organized at the National University of Science and Technology Politehnica Bucharest since 2018 and brings together prestigious researchers at national and international level in the field of polymeric materials and bioengineering, placing Romanian research at international level.

The primary research interest of Prof. Iovu is related to chemical engineering and material science: personalized design of scaffolds for regenerative medicine; smart nanostructured systems for controlled release; polymer/carbon-based nanocomposites for biosensors; characterization of hybrid materials as potential drug delivery systems and the design and construction of 3D structures for biomedical applications using 3D-bioprinting, electrospinning. **Prof. Iovu was the director of the INOVABIOMED project** (Innovative technologies for ensuring the quality of materials in health, energy and environment – Center

for Innovative Manufacturing Solutions for Smart Biomaterials and BIOMEDICAL Surfaces) with a value of approximately 14,000,000 Euro (66,761,485.81 lei) from European funds (2016-2020), representing **one of the most important scientific and managerial projects in the biomedical field**. The project was won on the first position in the competition Competition: POC-A.1-A.1.1.1- F-2015 (Large Research Infrastructures) and was implemented in NUSTPB, being dedicated to the **development of advanced research** by purchasing 56 high-performance equipment (Nano-FTIR, Micro-CT, Nano-CT, Nanoindenter, TerraHertz, Circular Dichroism, 3D Bioprinter, etc.). Following this research project implemented by Prof. Iovu as project director and his research team, 10 new research laboratories were established in NUSTPB and 6 other research laboratories in the university were modernized.

Prof. Iovu is the director of the eBio-hub project: BIOMEDICAL ENGINEERING RESEARCH CENTER (2023-2027) won in the Horizon 2021-2027 Program competition - HORIZON-WIDERA-2022-TALENTS-01 with the aim of establishing within NUSTPB a highly competitive interdisciplinary research center in bioengineering operating at the interface between chemistry, biology, IT, micro and nanotechnology and medicine and designed to develop micro solutions, nano and bio-integrated to address major global challenges in the biomedical field. Through coordination and implementation activities (establishment of an interdisciplinary Doctoral Program in Bioengineering, strengthening researchers' mobility and knowledge flow, promoting gender equality and diversity in science, etc.) the eBio-hub will be an example of good practice at international level. The eBio-hub project will be implemented during 2023-2027 and is funded by the European Union, based on the financing contract concluded with the European Research Executive Agency (REA) under the powers delegated by the European Commission, and the total related value is EUR 2,500,000.

I. Q1 - WOS Publications considering AIS (min 7)

1. Vlasceanu, GM; Iovu, H; Ionita, M, Graphene inks for the 3D printing of cell culture scaffolds and related molecular arrays, COMPOSITES PART B-ENGINEERING, 162, 712-723, 2019. https://doi.org/10.1016/j.compositesb.2019.01.010 , Q1, AIS=1.678

2. Cernencu, AI; Lungu, A; Stancu, IC; Serafim, A; Heggset, E; Syverud, K; Iovu, H, Bioinspired 3D printable pectin-nanocellulose ink formulations, CARBOHYDRATE POLYMERS, 220, 12-21, 2019. https://doi.org/10.1016/j.carbpol.2019.05.026, Q1, AIS=1.238

3. Vintila, I.S., Iovu, H., Alcea, A., Cucuruz, A., Mandoc, A.C., Vasile, B.S., The synthetization and analysis of dicyclopentadiene and ethylidene-norbornene microcapsule systems (2020) Polymers, 12 (5), art. no. 1052, . https://doi.org/10.3390/POLYM12051052 , Q1, AIS=0.604

4. Serafim, A., Cecoltan, S., Olăreț, E., Dragusin, D.-M., Vasile, E., Popescu, V., Mastalier, B.S.M., Iovu, H., Stancu, I.-C., Bioinspired hydrogel coating based on methacryloyl gelatin bioactivates

polypropylene meshes for abdominal wall repair (2020) Polymers, 12 (8), art. no. 1677, . https://doi.org/10.3390/POLYM12081677, Q1, AIS=0.604

5. Ghitman, J., Biru, E.I., Stan, R., Iovu, H., Review of hybrid PLGA nanoparticles: Future of smart drug delivery and theranostics medicine (2020) Materials and Design, 193, art. no. 108805, . https://doi.org/10.1016/j.matdes.2020.108805 Q1, AIS=1.437

6. Bîru, E.I., Gârea, S.A., Iovu, H., Innovative hyperbranched polybenzoxazine-based graphene oxide—poly(Amidoamines) nanomaterials (2020) Polymers, 12 (10), art. no. 2424, pp. 1-18. https://doi.org/10.3390/polym12102424 , Q1, AIS=0.604

7. Curti, F., Stancu, I.-C., Voicu, G., Iovu, H., Dobrita, C.-I., Ciocan, L.T., Marinescu, R., Iordache, F. Development of 3D bioactive scaffolds through 3D printing using wollastonite– gelatin inks (2020) Polymers, 12 (10), art. no. 2420, pp. 1-15. https://doi.org/10.3390/polym12102420, Q1, AIS=0.604

8. Pandele, A.M., Iovu, H., Orbeci, C., Tuncel, C., Miculescu, F., Nicolescu, A., Deleanu, C., Voicu, S.I., Surface modified cellulose acetate membranes for the reactive retention of tetracycline (2020) Separation and Purification Technology, 249, art. no. 117145, . https://doi.org/10.1016/j.seppur.2020.117145 , Q1, AIS=0.997

9. Onaș, A.M., Bîru, I.E., Gârea, S.A., Iovu, H., Novel bovine serum albumin protein backbone reassembly study: Strongly twisted β-sheet structure promotion upon interaction with go-pamam (2020) Polymers, 12 (11), art. no. 2603, pp. 1-14. https://doi.org/10.3390/polym12112603 Q1, AIS=0.604

10. Olăreț, E., Drăguşin, D.-M., Serafim, A., Lungu, A., Şelaru, A., Dobranici, A., Dinescu, S., Costache, M., Boerașu, I., Vasile, B.Ş., Steinmüller-Nethl, D., Iovu, H., Stancu, I.-C., Electrospinning fabrication and cytocompatibility investigation of nanodiamond particles- gelatin fibrous tubular scaffolds for nerve regeneration, (2021) Polymers, 13 (3), art. no. 407, pp. 1-18. https://doi.org/10.3390/polym13030407 Q1, AIS=0.604

11. Lungu, A., Cernencu, A.I., Dinescu, S., Balahura, R., Mereuta, P., Costache, M., Syverud, K., Stancu, I.C., Iovu, H., Nanocellulose-enriched hydrocolloid-based hydrogels designed using a Ca2+ free strategy based on citric acid (2021) Materials and Design, 197, art. no. 109200, . https://doi.org/10.1016/j.matdes.2020.109200 Q1, AIS=1.437

12. Lungu, A., Cernencu, A.I., Vlasceanu, G.M., Florea, N.M., Ionita, M., Iovu, H., 3D POSS cages decorated 2D graphenic sheets: A versatile platform for silicon-carbonaceous nano-additives

design (2021) Composites Part B: Engineering, 207, art. no. 108578, . https://doi.org/10.1016/j.compositesb.2020.108578 Q1, AIS=1.650

13. Alexa, R.L., Iovu, H., Ghitman, J., Serafim, A., Stavarache, C., Marin, M.-M., Ianchis, R. 3D-printed gelatin methacryloyl-based scaffolds with potential application in tissue engineering (2021) Polymers, 13 (5), art. no. 727, pp. 1-17. https://doi.org/10.3390/polym13050727 Q1, AIS=0.604

14. Olăreț, E., Bălănucă, B., Onaș, A.M., Ghițman, J., Iovu, H., Stancu, I.-C., Serafim, A. Double-cross-linked networks based on methacryloyl mucin (2021) Polymers, 13 (11), art. no. 1706, . https://doi.org/10.3390/polym13111706 Q1, AIS=0.604

15. Dziadek, M., Charuza, K., Kudlackova, R., Aveyard, J., D'Sa, R., Serafim, A., Stancu, I.-C., Iovu, H., Kerns, J.G., Allinson, S., Dziadek, K., Szatkowski, P., Cholewa-Kowalska, K., Bacakova, L., Pamula, E., Douglas, T.E.L. Modification of heat-induced whey protein isolate hydrogel with highly bioactive glass particles results in promising biomaterial for bone tissue engineering (2021) Materials and Design, 205, art. no. 109749, . https://doi.org/10.1016/j.matdes.2021.109749 , Q1, AIS=1.437

16. Stavarache, C.E., Ghebaur, A., Dinescu, S., Samoilă, I., Vasile, E., Vlasceanu, G.M., Iovu, H., Gârea, S.A. 5-aminosalicylic acid loaded chitosan-carrageenan hydrogel beads with potential application for the treatment of inflammatory bowel disease (2021) Polymers, 13 (15), art. no. 2463, . https://doi.org/10.3390/polym13152463 Q1, AIS=0.604

17. Mihai, A.I.V., Gârea, S.A., Vasile, E., Ghebaur, A., Iovu, H. Hybrid hosts based on sodium alginate and porous clay heterostructures for drug encapsulation (2021) Polymers, 13 (16), art. no. 2803, . https://doi.org/10.3390/polym13162803 Q1, AIS=0.604

18. Alexa, R.L., Ianchis, R., Savu, D., Temelie, M., Trica, B., Serafim, A., Vlasceanu, G.M., Alexandrescu, E., Preda, S., Iovu, H. 3D printing of alginate-natural clay hydrogel-based nanocomposites (2021) Gels, 7 (4), art. no. 211, . https://doi.org/10.3390/gels7040211 , Q1, AIS=0.626

19. Voicu, A.I., Gârea, S.A., Ghebaur, A., Nistor, C.L., Sârbu, A., Vasile, E., Mitran, R., Iovu, H. New nanocarriers based on Porous Clay Heterostructures (PCH) designed for methotrexate delivery (2021) Microporous and Mesoporous Materials, 328, art. no. 111434, . https://doi.org/10.1016/j.micromeso.2021.111434 , Q1, AIS=0.662

20. Cojocaru, E., Ghitman, J., Pircalabioru, G.G., Stavarache, C., Serafim, A., Vasile, E., Iovu, H. Electrospun Nanofibrous Membranes Based on Citric Acid-Functionalized Chitosan Containing rGO-TEPA with Potential Application in Wound Dressings (2022) Polymers, 14 (2), art. no. 294, . https://doi.org/10.3390/polym14020294 Q1, AIS=0.604

21. Necolau, M.I., Damian, C.M., Fierăscu, R.C., Chiriac, A.-L., Vlăsceanu, G.M., Vasile, E., Iovu, H. Layered clay–graphene oxide nanohybrids for the reinforcement and fire-retardant properties of polyurea matrix (2022) Polymers, 14 (1), art. no. 66, . https://doi.org/10.3390/polym14010066 , Q1, AIS=0.604

22. Biru, E.I., Necolau, M.I., Zainea, A., Iovu, H. Graphene Oxide–Protein-Based Scaffolds for Tissue Engineering. Recent Advances and Applications (2022) Polymers, 14 (5), art. no. 1032, . https://doi.org/10.3390/polym14051032 Q1, AIS=0.604

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27. Miron, A., Sarbu, A., Zaharia, A., Sandu, T., Iovu, H., Fierascu, R.C., Neagu, A.-L., Chiriac, A.-L., Iordache, T.-V. A Top-Down Procedure for Synthesizing Calcium Carbonate-Enriched Chitosan from Shrimp Shell Wastes (2022) Gels, 8 (11), art. no. 742, . https://doi.org/10.3390/gels8110742 , Q1, AIS=0.626

28. Cernencu, A.I., Dinu, A.I., Dinescu, S., Truşcă, R., Istodorescu, M., Lungu, A., Stancu, I.C., Iovu, H. Inorganic/Biopolymers Hybrid Hydrogels Dual Cross-Linked for Bone Tissue Regeneration (2022) Gels, 8 (12), art. no. 762, . https://doi.org/10.3390/gels8120762 Q1, AIS=0.626

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31. Cojocaru E., Ghitman J., Pircalabioru G.G., Zaharia A., Iovu H., Sarbu A., Electrospun/3D-Printed Bicomponent Scaffold Co-Loaded with a Prodrug and a Drug with Antibacterial and Immunomodulatory Properties, Polymers (2023), 15 (13), art. no. 2854 https://doi.org/10.3390/polym15132854 Q1, AIS=0.604

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II. Selection of important projects coordinated (considering 1 EUR = 5 lei):

Project (team>3 members)	**Position**	**Duration**	**Managed budget**
Innovative technologies for ensuring the quality of materials in health, energy and environment – Center for Innovative Manufacturing Solutions for Smart Biomaterials and Surfaces BIOMEDicals (INOVABIOMED), 145/26.10.2016, SMIS 107066	Project Manager	26.11.2016-26.04.2020	66.551.981,41 lei **13.310.396,2 EUR**
New nanocomposites based on benzoxazines and functionalized graphene oxide, PCE 9/2017	Project Manager	2017-2019	850.000,00 lei **170.000,00 EUR**
Precise cross-sectional measurements by developing new γ-ray beam characterization methods at ELI-NP, ELI-06/01.10.2020	Project responsible	2020-2022	250.000,00 lei 50.000,00 EUR
Innovative 3D printed nanaocomposite constructions obtained from marine resources, PED 332/2020	Project responsible	2020-2022	180.000,00 lei 36.000,00 EUR
Smart materials for medical applications, 39PCCDI/2018	Project Manager	2018-2021	5.287.500,00 lei

			1.057.500,00 EUR
EBIO-HUB: CHAIR OF RESEARCH CENTRE IN BIOMEDICAL ENGINEERING, Project 101087007 — eBio-hub	Project Manager	01.01.2023-31.12.2027	**2.500.000,00 EUR**
EBIO-HUB: CHAIR OF RESEARCH CENTRE IN BIOMEDICAL ENGINEERING	Project Manager	01.11.2023-31.12.2027	2.500.000,00 lei **500.000,00 EUR**

III. Prof. Iovu also has been an invited speaker to the following prestige universities:

1. ETH Zurrich – invited by Prof. Dieter Schluter in the Department of Materials on 12.11.2015; title of presentation: ***Polybenzoxazine-based nanocomposites***;
2. University of Valencia – invited by Prof. Julia Perez at the Instituto de Ciencia Molecular on 15.11.2017; title of presentation: ***From polymer-based nanomaterials to bionanomaterials***;
3. University of Texas at Dallas – invited by Prof. Mihaela Stefan at the Department of Chemistry and Biochemistry on 19.06.2023; Presentation title: ***Advanced drug delivery systems for biomedical applications***.

IV. **Prof. Iovu is also the Editor-in-Chief of WOS-rated Materiale Plastice Journal** https://revmaterialeplastice.ro/RCBoard.asp .

V. AIS "A" value for aticles published in the last 5 years (min 5):

$$A = \sum_{i=1}^{n} \frac{AIS_i}{n_i} = 7.57$$

List of publications

Prof. Horia Iovu, FRSC

Leader of the Advanced Polymer Materials Group
SCIENTOMETRIC INDICATORS

- Publications: 274 (total), 80 (main author)
- H-index: 30 (Web of Science), 32 (Scopus), 35 (Google Scholar)

A. PhD thesis

H. Iovu, Homopolymerization of dienic monomers with lanthanide-based catalytic systems, University Politehnica of Bucharest, 1995.

B. Books and chapters in books published in the last 10 years

1. S.A. Gârea, H. Iovu, Capitol intitulat: Following the nanocomposites synthesis by Raman Spectroscopy and X-Ray Photoelectron Spectroscopy (XPS), publicat în cartea intitulată Characterization Techniques for Polymer Nanocomposites, Editor Vikas Mitall, ISBN978-3-527-33148-2 , Editura Wiley-VCH,Weinheim, 2012.
2. S.A. Gârea, H. Iovu, A.Ghebaur, Capitol intitulat: Hybrid Materials Based on Polymer Matrix and Layered Silicates, publicat în cartea Nanotechnology In Polymers, Editori Vijay Kumar Thakur şi A. S. Singha, ISBN: 1-933699-90-6; Editura Studium Press LLC U.S.A, Februarie 2012.
3. Izabela Cristina Stancu, Adriana Lungu, Madalina G. Albu, Horia Iovu,Concept and design of polymer scaffolds with controlled biodegradability and porosity for tissue engineering applications capitol in volumul: Advanced biocompatible structures for prospective bioengineering: Concepts and strategies, Editura Academiei Romane; Editori: Marieta Costache; Maya Simionescu; ISBN: 978-973-27-2317-3, pg. 55-73, 2013.
4. I.C.Stancu, A. Lungu and H. Iovu, "Hydrogels for bone regeneration" in: "Biomaterials for Bone Regeneration. Novel Techniques and Applications", edited by Peter Debruel and Sandra Van Vlierberghe, Woodhead Publishing Series in Biomaterials: Number 75, Elsevier, 2014, ISBN 978-0-85709-804-7
5. S.A. Gârea, H. Iovu, Capitol intitulat: Drug Delivery Systems, Polymer and Layered Silicate-Based, Encyclopedia of Biomedical Polymers and Polymeric Biomaterials, Editura Taylor and Francis, 2014, DOI: 10.1081/E-EBPP-120049946.
6. S.A.Garea, C. Andronescu, H. Iovu" "Polybenzoxazine-clay nanocomposites," in "Advanced and Emerging Polybenzoxazine Science and Technology," Ishida, H.; Froimowicz, P. Eds. Elsevier, Amsterdam (2016).
7. M. Ionita, L. E. Crica, G. Vlasceanu, H. Iovu, Capitol intitulat: An Introduction to Computer Simulation Methods for Biomaterials Design, publicat in cartea: Biomedical Engineering; Introduction to current approaches, ISBN 978-606-23-0582-6, Editura PRINTECH, Bucuresti, 2016.
8. Garea, SA; Andronescu, C; Iovu, H, Capitol intitulat: Polybenzoxazine-Clay Nanocomposites, publicat in ADVANCED AND EMERGING POLYBENZOXAZINE SCIENCE AND TECHNOLOGY, Elsevier, ISBN:978-0-12- 804185-7; 978-0-12-804170-3, Amsterdam, 2017.
9. Garea, SA; Voicu, AI; Iovu, H, capitol intitulat: Clay-Polymer Nanocomposites for Controlled Drug Release, publicat in: CLAY-POLYMER NANOCOMPOSITES, ISBN:978-0-323-46161-0; 978-0-323-46153-5, Elsevier,
Amsterdam, 2017.

C. WOS/BDI indexed papers

1. M. Dimonie , V. Fieroiu , G. Hubca , V. Gruber , E. G. Badea , M. Vladulescu , A. Verestoy, H. Iovu, I. Vasile , Aspects concerning the polymerization of isoprene with lanthanide based catalysts, Rev. Roum. Chim., 34(1) , 1989, 5-13.

2. H. Iovu , M. Teodorescu , I. Calinescu , New compounds obtained by condensation of pyperazine with formaldehyde , Rev. Roum. Chim., 39(6) , 1994 , 653-657.

3. M. Dimonie , G. Hubca , E. Simionescu , E. G. Badea , H. Iovu , I. Vasile and S. Stan , Rev. Roum. Chim. , 40(1), 1995, 83-92.

4. C. Oprescu , G. Hubca , M. Dimonie , D. Racoti and H. Iovu , Some aspects regarding ring-opening copolymerization of cycloolefines , Rev. Roum. Chim., 41(1-2), 1996, 131-140.

5. O. Novac , O. Novac , H. Iovu , M. Teodorescu , I. Calinescu , Studiul caracteristicilor fizico-mecanice ale unor structuri de tip sandwich cu faguri metalici , Materiale plastice 32(2) , 1995 , 112-115.

6. O. Novac , D. Anton , O. Novac , H. Iovu , I. Calinescu , Studiul comportarii reologice a unor sisteme disperse de pulberi metalice in lianti polimerici , Materiale plastice, 30(4), 1993 , 282-285.

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9. R. Avram , I. Calinescu , H. Iovu , Oxidarea cumenului in prezenta bromurii de n- alchil piridiniu , Revista de Chimie , 47(1), 1996, 10-14.

10. C. Daescu , H. Iovu , Z. Stanoiev , I. Macarie , Agenti de dispersie rezolici , Revista de Chimie , 45(11) , 1994 , 960-964.

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13. G. Hubca , M. Tomescu , H. Iovu , Spectral Study of Modified Polyvinylic Alcohol submitted to chemical and heat treatments , Journal of Applied Polymer Science, 58, 1675-1680, 1995. https://doi.org/10.1002/app.1995.070581003

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