

## Application form

### 1. Candidate surname: POPA

**First name:** Marcel

PhD since 1991, defence of the doctoral thesis in 1989, confirmed in 1991 by the Ministry of Education and Research (a copy of the PhD diploma presented in the annex)

Current position: Prof.*em*.PhD.eng.*dr.H.C.* and scientific researcher

<https://icpm.tuiasi.ro/departamente/polimeri-naturali-si-sintetici/?lang=en>

Institution: "Gheorghe Asachi" Technical University from Iasi

Mobile phone:

E-mail address:

### 2. Edition « Gala Cercetării Românești » : 2024

### 3. Application for the following award and category:

**Award "Nicolae Vasilescu Karpen" in the scientific field Energy and Advanced Materials, category Individual Candidate**

4. Team leader (if applicable) : not applicable

5. Team members, if applicable: not applicable

### 6. Description of the most important scientific achievements in the last 5 years

I have been carrying out research activity for over 5 decades, starting with 1972 when I became a university assistant. During this period, I approached and contributed to the development of several research directions in the field of polymers. Referring strictly to the last 5 years, the research activity was oriented towards obtaining **advanced materials**, with applications especially in the field of **medicine (biomaterials), non-conventional energy, food and environmental protection**.

In the field of **biomaterials**, the main concern was the development of polymer-biologically active principle systems (drugs, enzymes) in different forms: hydrogels (films), micro/nanoparticles, micro/nanocapsules. I am among the pioneers of the "Bioactive Polymers" field in Romania, since 1982. I have developed in recent years materials and systems of an innovative nature, intended for the treatment of various diseases. Hydrogels represent a group of materials with the ability to include hydrophilic biological products and to release them sustained and/or in precisely controlled doses. An original thermosensitive hydrogel, has been designed for the treatment of **eye diseases** (for

example, open-angle glaucoma). When placing an insert based on this hydrogel containing drug, in the conjunctival sac of the eye, at physiological temperature, the hydrogel contracts and expels the included drug, in a precisely controlled manner, as proven by *in vivo* tests on volunteer patients (M. Hamcerencu, ... M. Popa, s.a., *Polymer Bulletin*, 77, 741-755, 2020; M. Hamcerencu, M. Popa, s.a., *Polymer International*, 69, 11, 1051-1057, 2020. This type of system is a high interest as proven by the **19** citations accumulated in just 3 years. For the treatment of some skin conditions (dermatological diseases) I designed an original hydrogel based on modified polysaccharides, which was the subject of a doctoral thesis of a student from Algeria, defended in 2021 (M. Dellali... M. Popa, *Molecules*, 26, 2185, 2021- **14** citations). Original hydrogels, with applications in dentistry, for the prevention/treatment of bacterial infections that cause periodontitis, were obtained in the framework of two theses coordinated by me and defended in 2022 (C. Mihalache...M. Popa, s.a., *Polymer International*, 69, 11, 1152-1160, 2020 – **13** citations; N. Baranov, M. Popa, s.a., *Molecules*, 26, 2735, 2021; D.M.Rata... M. Popa, s.a., *Pharmaceutics*, 13, 2079, 2021). Tests on experimental animals, and in some cases on volunteer human patients, validated my idea. Original drug-carrying hydrogels for the treatment of digestive disorders, with oral administration, were obtained in the framework of another doctoral thesis that I coordinated, defended in 2022. The *in vitro* testing proved their ability to be used for this purpose (A.I. Gugoasa, ... M. Popa, *Polymers* 15,490,2023)

Since 2000, I developed a new direction of research that I continued, with important results, in the last 5 years. It is about the developing of systems with applications in nanomedicine. In this context, I specify that I am the co-editor (as well as the author of several chapters) of one of the first books in the world dedicated to nanomedicine (Polymeric Nanomedicine, Ed. BENTHAM, 2013). I coordinated the activity of several PhD students developing innovative nanoparticulate systems, through new obtaining techniques. Micro/nanoparticles loaded with drugs, which can be administered by parenteral and especially by intravenous way, can reach the affected organs by *passive targeting*. For these applications, microparticles based on methacrylic polymers were synthesized by using an original process, and proved their ability to be loaded and to release antimicrobial drugs in a sustained manner (S. Vasiliu ... M. Popa s.a., *Chemistry Select*, 4 (32), 9331-9338, 2019; S. Vasiliu, ..., M. Popa, *Polymer International*, 69, 11, 1066-1080, 2020; A.I. Gugoasa...M. Popa, *Polymers*, 14, 4151, 2022). Curcumin is a polyphenol well-known for its antioxidant activity, and hence with therapeutic potential against cancer. With a post-doctoral student we developed particulate systems through a method with a novelty character. Such orally administrable systems have proven their ability to encapsulate curcumin, to protect it when passing through the digestive tract (pH<3) and to release it in the colon, thus targeting colon cancer (C.E. Iurciuc-Tincu, ... M. Popa, *International Journal of Biological Macromolecules*, Vol.147, 15 March,

2020, 629-642 – 63 citations; C.E.Iurciuc (Tincu)... M.Popa, *International Journal of Molecular Sciences*, 22, 3075, 2021). The obtained results, appreciated by the international scientific community (62 citations accumulated in 3 years), are the basis of a PED type project proposal that will be submitted to the recently launched UEFISCDI competition. Through an original process microcapsules were obtained in order to immobilize dexamethasone (D.M. Rata, ... M. Popa, *International Journal of Pharmaceutics*, 639, 122971, 2023). Drug-carrying nanoparticles based on original polysaccharide derivatives were also obtained by an original method, within a thesis (defended in 2020), the aim being to obtain a system capable of being administered in the eyeball, to treat some diseases of its posterior pole (uveitis, macular degeneration, retinitis). Tests on experimental animals have highlighted the ability of nanoparticles to be dominantly fixed on the retina, gradually releasing the encapsulated drug (C.L.Savin, M.Popa, s.a., *Materials Science and Engineering C*, 98, 843-860, 2019; C.L.Logigan... M.Popa, s.a., *Gels*, 8, 494, 2022; C.L.Logigan...M.Popa, s.a., *Polymers*, 16, 144, 2024). The scientific community's interest is proven by the 64 citations accumulated in the 4 years since publication, by the first article. Nanocapsules have the advantage of encapsulating larger amounts of drug. The polymers used as well as the interfacial condensation process used are absolutely original, being developed in doctoral theses (defended in the last 3 years) that I coordinated with students from the Romania or from Algeria (K. Zanoune Dellali,... M.Popa, s.a., *Polymers*, 14 (9), 1811, 2022). The category of nanocarriers also includes micelles, obtained based on the capacity of some original amphiphilic copolymers, to be like organized. The micelle were loaded with antitumor, antimicrobial drugs or intended for the treatment of dental diseases (C.E. Iurciuc (Tincu), ... M.Popa, s.a., *Polymers*, 12, 1450, 2020 – 72 citations; M.R. (Blanaru) Ozturk, M. Popa, s.a., *International Journal of Molecular Science*, 23(16), 9382, 2022; C. E. Iurciuc (Tincu), M. Popa, s.a., *Drug Deliv.* 29, 2883-2896, 2022; C. Popovici, M. Popa, s.a., *Polymers* 14, 3007 2022- 14 citations)

Away to make to increase the treatment efficiency is the realization of *active targeting*. 2 options are used: *(i)* the carrier surface functionalization with a ligand recognizable by the cell receptors of the diseased organ or *(ii)* the association of the nanocarrier with magnetic nanoparticles, so that after the system administration by injecting it, it can be directed to the target organ by using an external magnetic field. Valuable results were obtained through the creation of original systems, especially usable in the treatment of cancer (D.M.Rata....M.Popa, *Materials Science and Engineering C*, 103, 109828, 2019 – 64 citations; D.M.Rata, ... M.Popa, *Materials Science & Engineering C*, Vol. 119, February 2021, 111591; A.N.Cadinoiu,... M.Popa, *Polymers*, 11, 1515, 2019- 68 citations; K.Zanoune Dellali... M.Popa, s.a., *International Journal of Molecular Sciences*, 21, 5659, 2020- 11 citations). Hybrid nanospheres containing magnetic nanoparticles were obtained and were able to

encapsulate and release antitumor drugs (M. Dellali ...M.Popa, *Polymers*, 15, 4493, 2023). The starting idea was validated by *in vitro* testing proving their ability to fix dominantly on tumor cells. Another category of nanocapsules is liposomes, which can encapsulate high amounts of hydrophobic drugs, and can be functionalized with aptamers (ligands) easily recognized by the receptors of skin cancer cells (BCC) as proven by *in vitro* tests . (A.N. Cadinoiu...M. Popa, *Pharmaceutics*, 13, 866, 2021-26 citations). Nanocarriers functionalized with a certain aptamer demonstrated *in vitro* the ability to target BCC, and to release the encapsulated antitumor drug in them; nanoparticles functionalized with certain peptides showed an obvious ability to target lung cells; nanocapsules and magnetic liposomes, functionalized with certain tetrapeptides have demonstrated the ability to target cells specific to the inner ear, so that the encapsulated drug prevents infections leading to deafness. The briefly presented results allowed the financing of some national research projects (UEFISCDI - 2), and accessing European funds within a Romanian-Norway collaborative project (see the funded projects section).

Recently, I realized with a post doc researcher, the immobilization of an enzyme, with important uses in the food field, the  $\alpha$ -amylase (starch hydrolysis with the formation of ethyl alcohol). The free enzyme can only be used in one hydrolytic cycle, and remain as an impurity in the reaction mass. The encapsulation in polymer particles allows the use of the immobilized material in at least 20 hydrolytic cycles, with high yield, allowing the achievement of an important economy of the enzyme and without contaminating the reaction product (C.E. Tincu (Iurciuc), ... M. Popa, *Molecules*, 28, 4695, 2023). A patent proposal is being drafted which will be submitted shortly to OSIM.

A recent research direction concerns the area of solar energy production. It is known that the yield of solar cells is not very high, and a slight increase in it (2-3%) can have very favourable economic effects. Quantum Dots and Carbon Dots are compounds that have the property of absorbing UV radiation and emitting radiation in the visible spectrum (red, green, blue). Therefore, UV radiation, which cannot be converted into electrical energy, is thus transformed into visible radiation that can be converted.. It is an original concept suggested by results recently published (C.Stan, A...M.Popa, s.a., *Polymer International*, 69, 11, 1081-1088, 2020; L. Stan, ... M. Popa, s.a., *International Journal of Molecular Science*, 23, 16004, 2022; L. Stan, ... M.Popa, *Nanomaterials* 13, 131, 2023; C.S.Stan, ...M.Popa, s.a., *Nanomaterials* 14, 83 2024, and of two patents, one already granted (see the patents section). Our results form the basis of an international project ongoing (NANOSOLARCELLS, ERANET, 293 of 01/05/2022) with a coordinator from France, and partners from Romania, Morocco, Algeria and Egypt). A subject inspired by this direction of research is currently being addressed by a doctoral student from Morocco, under my co-supervision. Recently, we started research in the direction of increasing the hydrogen storage capacity. We started from the "crazy" idea that aerogels based on polymers complexed with heavy metals, obtained through an

original process we developed, can store large amounts of hydrogen as a result of the gravitational effects exerted by the heavy nucleus of the metal on the very light one of hydrogen; this effect is amplified by the extremely high porosity of the polymer matrix. An Ideas project was proposed at the UEFISCDI competition in 2023 (PN-IV-P1-PCE-2023-0483) (dr. C.S.Stan director; in evaluation).

A research direction, approached two years ago, concerns the field of environmental protection. An absolutely original hydrogel, capable of retaining traces of Pb ions and dyes, with high efficiency ( M. Mihoub, ... M. Popa, D.M.Popa, s.a., *Polymers*, 14, 5090, 2022, was obtained by a PhD student from Algeria under my supervision (these defended in 2023).

Summarizing the results of my research activity obtained in the last 5 years , I emphasize that I am co-author of 47 works already published,as main author or co-author. The published results, confronted with the opinion of the international scientific community and appreciated through citations (over 2700 in the last 5 years) or invitations to participate in international scientific events (52 in the last 5 years) have brought and bring a contribution to the development of the scientific fields in which I have developed activity. These results, like those of my entire scientific career, would not have been possible only through my own work. I coordinated the activity of 47 PhD students (theses defended) and post-doctoral researchers who shared and implemented my ideas. I created a research group in the field of biomaterials at "Gheorghe Asachi" Technical University in Iasi, and in the last 5 years I created and consolidated a Biomaterials laboratory at the "Apollonia" University in Iasi. Both groups are made up of former PhD students that continued my work under my supervision and are already recognized at national but also international level, as evidenced by numerous projects whose funding was won through competitions launched by UEFISCDI or European competitions.

## **7. Curriculum vitae of candidate**

Last name: POPA

First name: MARCEL

Date of birth: March 13th, 1949

Birth place: town Dej, county Cluj Napoca, Romania

Marital status: married, 2 children

Nationality: Romanian

Home address: ,

Work address: Technical University " Gheorghe Asachi " of Iasi, Faculty of Chemical Engineering and Environmental Protection "Cristofor Simionescu", Department of Natural and Synthetic

Polymers, Bd. Prof.dr.docent Dimitrie Mangeron, nr. 73, 700050 Iasi, Romania, Tel: 0040 0232 278683/int.2271; Fax: 004 00232 271311, E-mail: [marpopa@ch.tuiasi.ro](mailto:marpopa@ch.tuiasi.ro), [marpopa2001@yahoo.fr](mailto:marpopa2001@yahoo.fr)

Professional website: <http://www.ch.tuiasi.ro/cv/pns/popamarcel/default.html>

#### EDUCATION:

B.Sc. Chemical Engineering, Polytechnic Institute “ Gh. Asachi “, Iași, Romania – 1972

PhD in the scientific field of Polymer Chemistry and Technology, Polytechnic Institute “Gheorghe Asachi “, Iași, Romania – since 1991, defence of the doctoral thesis in 1989, confirmed in 1991 by the Ministry of Education and Research (a copy of the PhD diploma presented in the annex)

Scientific title : Doctor Engineer

Professional title: Professor *emeritus* at the Technical University “ Gheorghe Asachi “, Iași, Romania

Visiting researcher: postdoctoral research fellowship "Haute Alsace" University, Laboratory of Macromolecular Chemistry, Mulhouse, France, 9 months (October 1991 - June 1992)

#### TEACHING ACTIVITY

Main teaching fields: Polymer chemistry, physics and technology

Academic positions since 1972 until present:

- teaching assistant (trainee): 1972 – 1975
- teaching assistant: 1975– 1982
- assistant lecturer: 1982 – 1991
- assistant professor: 1991 – 1993
- professor: 1993
- professor *emeritus*, 2015 – “Gheorghe Asachi” Technical University of Iasi, Romania
- scientific researcher, 2017 - “Gheorghe Asachi” Technical University of Iasi, Romania
- Ph.D. supervisor in “Material Science and Engineering” since 1997; supervised 47 students who completed their program and obtained their PhD degree.
- associate professor at the “Gr. T. Popa” University of Medicine and Pharmacy, Iasi, Faculty of Medical Bioengineering, 1998-2001; 2008

#### Courses:

- Polymer chemistry and physics

- Technology of polymer syntheses
- Bioactive polymers
- Composite polymeric materials
- Polymeric materials engineering
- Technopolymers
- Polymer characterization methods

## SCIENTIFIC ACTIVITY

### Expertise fields:

- Polymer mechano-chemistry
- Composite polymeric materials
- Bioactive polymers (polymer – biologic active ingredient : drugs, enzymes, cells, microorganisms)
- Hydrogels (films, micro- and nanoparticles) for drug delivery
- Interpenetrating networks
- Polymeric biomaterials
- Chemical modifications of polysaccharides

### Publications:

- Books published in home country: **7**
- Monographs and book chapters published overseas : **45**  
(CRC Press–USA, TECNOMIC– USA, Martinus Nijhoff Publishers-Holand, Elsevier Science Publishers B.V-Holand, RAPRA Techn.Ltd.,-Anglia, AMERICAN SCIENTIFIC PUBLISHERS - SUA)
- Books published overseas: **2**
- Editor and translator in Romanian for books in the field : **1**
- Book editor – **2** (2 vol., AMERICAN SCIENTIFIC PUBLISHERS – SUA, Bentham)
- Published articles : **482** from which **353** in ISI listed journals
- Presented papers : **573**, from which at international scientific meetings : **484**
- Oral presentations overseas: **52**
- Book reviews : **18**
- Scientific papers reviewed for international journals : **93**
- H-index: **35** (more than **5600** citations) on Scholar Google

Authored patents : 21

Original technologies: 1

Research contracts : 82 (38 as manager)

Member in the Excellence Research Center « Polymers » (CNCSIS accredited) – “Image, publicity, recognition” Department

Member of the Laboratory “ Multi-functional highly performing polymeric materials for applications in medicine, pharmacy, microelectronics, energy/information storage, environmental protection” financed/accredited by the National Education and Research Ministry – coordinator of formative program activity

General manager of the institutional postdoctoral project “Performance through postdoctorate for integration in the European research area” (PERFORM-ERA) financed through structural funds (about 5 million euro)

Evaluating expert for the project « Agence Universitaire de la Francophonie » (AUF)

Evaluating expert for scientific research projects of the “Agence Nationale de Recherche” (ANR), France and CFQCU- Quebec (Canada), National Research Center (Poland)

**Editor-in-Chief of *Polymer Networks*** (section of *Polymers* journal)

(<https://www.mdpi.com/journal/polymers/sectioneditors/netw>)

**and *Journal of Hydrogels*** ( [http://aspbs.com/jh/editorial\\_jh.htm](http://aspbs.com/jh/editorial_jh.htm))

Member of Editorial Board of the journals: *Molecules* (Macromolecular Section), *International Journal of Molecular Science* (Macromolecular section), *Journal of Environmental Engineering and Management Journal*, *International Journal of Medical Dentistry*, *Buletinul Institutului Politehnic Iași* (Chemistry section)

International scientific collaborations: 19, with universities and research institutes located in Italy, France, Germany, Canada, Belgium

International programs coordinated: 27 programs (Erasmus programs, Leonardo da Vinci, AUF, interacademic exchanges France-Romania; Germany, Canada, Algeria, Vietnam, Tunisie, Maroc, Mauritius, Belgium, Bresil)

***Invited professor (for lectures, conferences, research collaboration):***

- *associated professor* at « Chaire Noelting » department, Université de Haute Alsace, Mulhouse, France, October-November 2001,



- *invited professor at :*

- Université de Haute Alsace, Mulhouse, France (April 2004, March – April 2005, July 2005, March-April 2006, September-October 2010, November- December 2018)
- Université de Rouen, Rouen, France (November 2002, September 2003, March - May 2004, July 2008, November 2016)
- Université de Sud, Toulon-Var, Laboratoire « Matériaux à Finalités spécifiques », Toulon, France (October 2005, April 2007, November 2007, November 2009, Avril 2011, December 2011, April 2013)
- Université d'Artois, Béthune, France, July, 2011
- Ecole de Mines de Douai, France (March 2010, November 2010)
- Université d'Artois, Béthune, France, March 2010
- University of Science, Hanoi, Vietnam, December 2010
- « Heinrich Heine » Universität, Düsseldorf, Germany (November 2002, October 2003, April 2006, April 2010)
- Université de Montréal, Québec, Canada (August-September 2007, July 2008)
- Université de Pau et des Pays de l'Adour, Pau, France (November 2005, December 2007)
- Ecole des Mines de Paris, Centre de Mise en Forme des Matériaux de Sophia Antipolis, France, October 2005
- Université du Littoral et Côte d'Opale, Dunkerque, France, October 2004
- Universitat Polytechnica de Catalunya, Barcelona, Spain (April 2003, September 2003)

MEMBER IN SCIENTIFIC NATIONAL AND INTERNATIONAL ASSOCIATIONS:

- Romanian Chemistry Society
- Romanian Biomaterials Society
- Groupe Français des Polymères. member of Teaching section
- Member of GALENOS NETWORK

PRIZES AND AWARDS :

- « Gh. Spacu » Award of the Romanian Academy - 1984
- « OPERA OMNIA » Award for « Excellency in Scientific Research» granted by CNCSIS (The National Education Ministry) in recognition of scientific lifetime achievements, 2002
- « HENRI COANDA » medal, I-st class. for «Special Merit in Technical Innovation» granted by the Romanian Inventor Society, June 2002

- 14 prizes and medals (6 gold medals) awarded at world, international and national innovation exhibitions
- Nominated in “Who’s who in Romania”, 2002, 2011, 2013, 2014
- Nominated in Marquis “Who’s who in the World”, 2010
- Member of Romanian Academy of Scientists, 2015
- “Excellence in research” prize granted by “Gheorghe Asachi” Technical University of Iasi 2015
- **Doctor Honoris Causa** of Université de Pau et des Pays de l’Adour, France, 2010 and of Université de Haute Alsace, Mulhouse, France, 2017

Foreign languages known: French (fluent) and English (upper-intermediate)

Over the past 5 years, my research activities have continued primarily in the preferred direction of the last 5 decades, focusing on biomaterials for bioapplications, as well as exploring new directions initiated with doctoral students, post-doctoral researchers, or other collaborators, including the food domain, green energy, hydrogen storage, and environmental protection. In the field of biomaterials, we have successfully developed drug delivery systems capable of loading, transporting, and releasing drugs at the site of affliction. Through our innovative methods, we have achieved the production of new hydrogels based on chemically modified polysaccharides to enhance their chemical reactivity under moderate working conditions, ensuring the stability of the included drug. These results have contributed to 3 doctoral theses that I supervised and 5 publications, which have been well-received internationally, as evidenced by numerous citations, indicating their contribution to field development.

Special attention has been given to the development of micro- and nanoparticles systems capable of loading large quantities of drugs and delivering them to the site of affliction, particularly through injection to bypass the highly acidic digestive tract, thus enhancing drug efficacy. We have developed original methods for particle synthesis through double cross-linking (covalent and ionic), subsequently adopted by researchers internationally. Additionally, through an original process based on the use of previously obtained alternating copolymers with a doctoral student, we have produced nanocapsules capable of loading larger quantities of drugs compared to spherical hydrogel particles of the same size.

In the pursuit of active targeting of afflictions with drug carriers, we have developed two research directions characterized by original approaches. Within doctoral theses, we functionalized drug carriers (especially nanoparticles and liposomes) with ligands capable of recognizing receptors expressed in the membrane of diseased cells, particularly tumor cells. *In vitro* tests have demonstrated

the attachment of antitumor drug-loaded nanoparticles to cancerous cells, with at least two positive effects: avoiding the destruction of healthy cells by highly aggressive antitumor drugs and increasing treatment efficiency by delivering the drug directly into tumor cells. Furthermore, by functionalizing with other types of ligands, we have successfully directed drug-carrying nanoparticles towards specific inner ear cells, resulting in more effective treatment of infections causing deafness, and towards alveolar lung cells, proposing an alternative to traditional lung disease treatments. These research efforts, involving doctoral students, some from abroad, have yielded over 20 scientific papers with international recognition, evidenced by their separation and citation count. The results in the field of biomaterials formed the basis for the proposal and funding acquisition of three projects, one of which is international, contributing significantly to knowledge development in the field and the recognition of the biomaterials school in Iasi.

Another area addressed in recent years is the food domain, where we (a post-doc researcher under my supervision) have achieved interesting results by immobilizing an enzyme -  $\alpha$ -amylase - allowing for numerous starch hydrolysis cycles (with ethanol formation) with significant enzyme savings and without impurities in the hydrolysis product; patent proposal is currently being prepared.

I have also ventured into environmental protection, developing an original hydrogel with high lead ion and dye retention capacity from textile industry wastewater. These results have been recently published in a high-impact journal and are already gaining citations.

A new direction recently opened, based on a seemingly "crazy" idea, focuses on increasing hydrogen storage capacity. The concept involves heavy metal nuclei complexed on polymers, potentially exerting a gravitational effect on lightweight hydrogen nuclei, concentrating them around the metal. We have expertise in synthesizing complexes of heavy metals (especially transition metals) with various polymers and in producing aerogels with enormous pore surface area/volume, further enhancing hydrogen retention. A project proposal has been submitted to the UEFISCDI competition in 2023 (I am person key member).

In summary, over the past 5 years, I have published 47 articles (44 in Q1 and Q2 quartile journals), with 18 as the principal author. I have secured funding for further research on original ideas (2 national projects, 1 international project). I have been continuously involved in mentoring doctoral students (7 have defended theses, including three from Algeria), contributing to the research development of post-doctoral researchers (former doctoral students of mine), and promoting young researchers to research positions. This includes establishing a research laboratory at Apollonia University of Iasi and selecting 3 former doctoral students as researchers. I have consistently encouraged young collaborators to apply for national and international competitions, and some of

them have succeeded in obtaining funding. Moreover, in some project proposals, I have agreed to step aside from the role of director or lead partner, opting instead to promote them and help them build a portfolio that ensures their success in future competitions, where the project director must possess a strong CV and background. Through all these actions, my/our aim has been to ensure continuity in research, particularly in the field of biomaterials, to which I have contributed to its foundation and development in the country for the past 40 years. Additionally, we wanted to provide an opportunity for the new domains addressed, especially in the last 5 years, which without funding would have no chance to develop and establish themselves.

My international recognition was consolidated in the last 5 years by serving as chief editor for the Polymer Network section of the *Polymers* journal and as editor/co-editor for 8 special editions of *Molecules*, *International Journal of Molecular Sciences*, *Pharmaceutics*, and *Nanomaterials* journals. The cumulative citations for my published works in the last 5 years amount to approximately 2700 (for not only the papers published in the last 5 years), indicating my contribution to the development of the fields I have researched (<https://scholar.google.com/citations?user=90qGNA8AAAAJ&hl=en>).

#### 8. List of articles published in the last 5 years (Quartiles Q1 and Q2)

Nr	Authors	Article	Quartile		*AIS <sub>i</sub>	AIS <sub>i</sub> /n <sub>i</sub>
			Q1	Q2		
1	C.L.Savin, <b>M.Popa</b> , C.Delaite, M.Costuleanu, D.Costin, C.A.Peptu	Chitosan grafted–poly(ethylene glycol) methacrylate nanoparticles as carrier for controlled release of bevacizumab, <i>Materials Science and Engineering C</i> , 98, 843-860,2019, doi: <a href="https://doi.org/10.1016/j.msec.2019.01.036">https://doi.org/10.1016/j.msec.2019.01.036</a> <b>main author</b>	x		**1,086	0,1810
2	A.N.Cadinoiu, D.M.Rata, L.I.Atanase, O.M.Daraba, D.Gherghel, G.Vochita, <b>M.Popa</b>	Aptamer-Functionalized Liposomes as a Potential Treatment for Basal Cell Carcinoma, <i>Polymers</i> , 11, 1515, 2019 doi:10.3390/polym11091515 <b>co-author</b>	x		0,604	0,0862
3	A.-M. Pana, P.Sfarloaga, G.Rusu, <b>M.Popa</b> , L.M.Rusnac, G.-A. DumitreI, G.Bandur	Biodegradation studies on new glycopolymers derived from oligomeric D-mannose itaconates and 2-hydroxypropyl acrylate, <i>Polymers Degradation and Stability</i> , 167, 210-216, 2019 <a href="https://doi.org/10.1016/j.polymdegradstab.2019.07.008">https://doi.org/10.1016/j.polymdegradstab.2019.07.008</a> <b>co-author</b>	x		0,749	0,107
4	D.M.Rata, A.N.Cadinoiu, L.I.Atanase,	<i>In vitro</i> behaviour of Aptamer-Functionalized Polymeric Nanocapsules Loaded with 5-Fluorouracil for Targeted Therapy, <i>Materials</i>	x			

	S.E.Bacaita, C.Mihalache, O.M.Daraba, <b>M.Popa</b>	<i>Science and Engineering C</i> , 103, 109828, 2019, doi.org/10.1016/j.msec.2019.109828 <b>co-author</b>			**1,086	0,1551
5	E. Iurciuc- Tincu, L. I. Atanase, L. Ochiuz, C. Jérôme, V. Sol, P.Martin, <b>M. Popa</b>	Curcumin-loaded polysaccharides-based complex particles obtained by polyelectrolyte complexation and ionic gelation I-Particles obtaining and characterization, <i>International Journal of Biological Macromolecules</i> , Vol. 147, 15 March 2020. 629-642, doi 10.1016/j.ijbiomac.2019.12.247 <b>main author</b>		x	0.918	0,1311
6	M. Hamcerencu, J.Desbrieres, <b>M. Popa</b> , G.Riess	Thermo-sensitive gellan maleate/N-isopropylacrylamide hydrogels: initial <i>in vitro</i> and <i>in vivo</i> evaluation as ocular inserts, <i>Polymer Bulletin</i> , 77, 741-755, 2020, https://doi.org/10.1007/s00289-019-02772-5 <b>main author</b>		x	0.343	0,0858
7	C.E.Iurciuc (Tincu), M.Stamate Cretan, V.Purcar, <b>M.Popa</b> , O.M.Daraba, L.I.Atanase, L.Ochiuz	Drug Delivery System Based on pH-Sensitive Biocompatible Poly(2-vinyl pyridine)-b-poly(ethylene oxide) Nanomicelles Loaded with Curcumin and 5-Fluorouracil, <i>Polymers</i> , 12, 1450, 2020 doi:10.3390/polym12071450 <b>co-author</b>		x	0,604	0,0863
8	C.Stan, A.Coroaba, <b>M.Popa</b> , L.E.Ursu	Highly photoemissive polymer-transition metal complexes based on poly(2-hydroxy ethyl) methacrylate, <i>Polymer International</i> , 69, 11, 1081-1088, 2020 doi:10.1002/pi.5926 <b>co-author</b>		x	0,414	0,1035
9	C. Mihalache, D.Rata, A. Cadinoiu, X. Patras, E. V. Şindilar, E. S. Bacaita, <b>M. Popa</b> , L. I. Atanase, O. M. Daraba,	Bupivacaine-loaded chitosan/poly(maleic anhydride- <i>alt</i> -vinyl acetate) hydrogels for topical anesthesia in dentistry, <i>Polymer International</i> , 69, 11, 1152-1160, 2020 doi:10.1002/pi.6052) <b>co-author</b>		x	0,414	0,046
10	M. Hamcerencu, <b>M.Popa</b> , G.Riess, J.Desbrieres	Chemically modified Xanthan and Gellan to prepare biomaterials for ophthalmic applications, <i>Polymer International</i> , 69, 11, 1051-1057, 2020 doi:10.1002/pi.5927 <b>co-author</b>		x	0,414	0,1035

11	S. Salhi, J. Mahfoudh, S. Abid, L. I. Atanase, <b>M. Popa</b> , C. Delaite	Random Poly( $\epsilon$ -Caprolactone-L-alanine) by direct melt Copolymerization, <i>Polymer International</i> , 69, 11. 1161-1168, 2020 doi.org/10.1002/pi.6085 <b>co-author</b>		x	0.414	0,069
12	S.Vasiliu, M- A. Lungan, S. Racovita, <b>M.Popa</b>	Porous microparticles based on methacrylic copolymers and gellan as drug delivery systems <i>Polymer International</i> , 69, 11, 1066-1080, 2020 doi: 10.1002/pi.5917) <b>main author</b>		x	0,414	0,1035
13	K.Zanoune Dellali, D.M.Rata, <b>M.Popa</b> , M'hamed Djennad, A. Ouagued, D. Gherghel	Antitumoral Drug -Loaded Hybrid Nanocapsules Based on Chitosan with Potential Effect in Breast Cancer Therapy, <i>International Journal of Molecular Sciences</i> 21, 5659, 2020, doi:10.3390/ijms21165659 <b>main author</b>		x	1,028	0,1713
14	S. Racovita, N.Baranov, A.M.Macsim, C. Lionte, C. Cheptea, V. Sunel, <b>M. Popa</b> , S.Vasiliu, J. Desbrieres	New grafted copolymers carrying betaine units based on gellan gum and N-vinylimidazole for immobilisation of bioactive compounds. I. Synthesis and characterization, <i>Molecules</i> , 25, 5451, 2020 doi:10.3390/molecules25225451 <b>co-author</b>		x	0,659	0,0732
15	C.V.Andritoiu, C.E.Andriescu, C.Ibanescu, C.Lungu, B.Ivanescu, V.Laurian, C.Havarneanu, <b>M.Popa</b> ,	Effects and Characterization of Some Topical Ointments Based on Vegetal Extracts on Incision, Excision and Thermal Wound Models” <i>Molecules</i> , 25, 5356, 2020, doi:10.3390/molecules25225356 <b>co-author</b>		x	0,659	0,0824
16	D.M.Rata, A.Cadinoiu, L.I.Atanase, G.Vochita, C.T.Mihai, <b>M.Popa</b>	Topical formulations containing aptamer-functionalized nanocapsules loaded with 5-Fluorouracil - An innovative concept for the active targeting of skin cancer cells, <i>Materials Science &amp; Engineering C</i> , Volume 119, February 2021, 111591 doi: 10.1016/j.msec.2020.111591 <b>co-author</b>		x	**1,086	0,181
17	S.Vasiliu, S.Racovita, I.A.Gugoasa, M.A.Lungan, <b>M.Popa</b> , J.Desbrieres	The benefit of smart nanoparticles in dental applications, <i>International Journal of Molecular Sciences</i> , 22, 2585, 2021, https://doi.org/10.3390/ijms22052585 <b>co-author</b>		x	1,028	0,1713

18	C.E.Iurciuc (Tincu), L.I.Atanase, L.Ochiuz, C. Jerome, V.Sol, P.Martin, <b>M.Popa</b>	Curcumin-loaded polysaccharides-based complex particles obtained by polyelectrolyte complexation and ionic gelation. II- Protective role of the polymeric matrix on the stability and bioactivity of curcumin, <i>International Journal of Molecular Sciences</i> , 22, 3075, 2021 <a href="https://doi.org/10.3390/ijms22063075">https://doi.org/10.3390/ijms22063075</a> <b>main author</b>		x	1,028	0,1468
19	M. Dellali, C.E.Iurciuc (Tincu), C.L.Savin, N. Spahis, M. Djennad, <b>M.Popa</b>	Hydrogel films based on chitosan and oxidized carboxymethyl cellulose optimized to include and controlled release active principles with potential applications in treating dermatological conditions <i>Molecules</i> , 26, 2185, 2021 <a href="https://doi.org/10.3390/molecules26082185">https://doi.org/10.3390/molecules26082185</a> <b>main author</b>		x	0,659	0,1098
20	L.Marin, <b>M.Popa</b> , A.Anisie, S-A.Irimiciuc, M.Agop, T-C.Petrescu, D.Vasincu, L.Himiniuc	A Theoretical Model for Release Dynamics of an Antifungal Agent Covalently Bonded to the Chitosan <i>Molecules</i> , 26, 2089, 2021, <a href="https://doi.org/10.3390/molecules26072089">https://doi.org/10.3390/molecules26072089</a> <b>co-author</b>		x	0,659	0,0824
21	N.Baranov, <b>M.Popa</b> , L.I.Atanase, D.L.Ichim	Biopolymer-based drug delivery systems for the treatment of periodontitis, <i>Molecules</i> , 26, 2735, 2021 <a href="https://doi.org/10.3390/molecules26092735">https://doi.org/10.3390/molecules26092735</a> <b>main author</b>		x	0,659	0,1648
22	C.V.Andritoiu, C.E.Andriescu, M.Danu, C.Lungu, B.Ivanescu, C.Havarneanu, <b>M.Popa</b>	Evaluation of the Wound Healing Potential of Some Natural Polymers on Three Experimental Models, <i>Pharmaceuticals</i> 14, 465, 2021, <a href="https://doi.org/10.3390/ph14050465">https://doi.org/10.3390/ph14050465</a> <b>co-author</b>		x	0,770	0,110
23	N.Baranov, S.Racovita, S.Vasilii, A.M.Macsim, C.Lionte, V.Sunel, <b>M.Popa</b> , J.Desbrieres, C.Cheptea	Immobilization and release studies of triazole derivatives from grafted copolymer based on gellan, carrying betaine units, <i>Molecules</i> , 26, 3330, 2021, <a href="https://doi.org/10.3390/molecules26113330">https://doi.org/10.3390/molecules26113330</a> , <b>co-author</b>		x	0,659	0,0732
24	A.N. Cadinoiu, D. M. Rata, L. I. Atanase, C. T. Mihai, S. E. Bacaita, <b>M. Popa</b>	Formulations based on drug loaded aptamer-conjugated liposomes as a viable strategy for the topical treatment of basal cell carcinoma - In vitro tests, <i>Pharmaceutics</i> , 13, 866, 2021, <a href="https://doi.org/10.3390/pharmaceutics13060866">https://doi.org/10.3390/pharmaceutics13060866</a> <b>main author</b>		x	0,754	0,1257

25	C. Popovici, C-M. Pavel, V. Sunel, C. Cheptea, D.G. Dimitriu, D.O.Dorohoi, D. David, V. Closca, <b>M. Popa</b>	Optimized Synthesis of New Thiosemicarbazide Derivatives with Tuberculostatic Activity <i>International Journal of Molecular Sciences</i> , 22, 12139, 2021 <a href="https://doi.org/10.3390/pharmaceutics/ijms22212139">https://doi.org/10.3390/pharmaceutics/ijms22212139</a> <b>co-author</b>		x	1,028	0,1142
26 6	D.M.Rata, A.N.Cadinoiu, <b>M.Popa</b> , L.I.Atanase, O.M.Daraba, I.Popescu, L.E.Romila, D.L.Ichim	Biocomposite hydrogels for the treatment of bacterial infections: Physico- chemical characterization and in vitro assessment <i>Pharmaceutics</i> , 13, 2079, 2021, <a href="https://doi.org/10.3390/pharmaceutics13122079">https://doi.org/10.3390/pharmaceutics13122079</a> <b>Cco-author</b>		x	0,754	0,0943
27	C.V.Andritoiu, C.Lungu, M.Danu, B.Ivanescu, C.E.Andriescu, L.Vlase, C.Havarneanu, C.E.Iurciuc (Tincu), <b>M.Popa</b>	Evaluation of the healing effect of ointments based on bee products on cutaneous lesions in Wistar rats, <i>Pharmaceutics</i> , 14, 1146, 2021, <a href="https://doi.org/10.3390/ph14111146">https://doi.org/10.3390/ph14111146</a> <b>co-author</b>		x	0,770	0,0856
28	K. Zanoune Dellali, M. Dellali, D.M. Rata, A.N. Cadinoiu, L.I. Atanase, <b>M.Popa</b> , M.C. Spataru, C. Solcan	Assessment of physicochemical and in vivo biological properties of polymeric nanocapsules based on chitosan and poly(N-vinyl pyrrolidone-alt-itaconic anhydride) <i>Polymers</i> , 14 (9),1811, 2022 doi: <a href="https://doi.org/10.3390/polym14091811">10.3390/polym14091811</a> <b>main author</b>		x	0,604	0,0755
29	M.R. (Blanaru) Ozturk, <b>M. Popa</b> , D.M. Rata, A.N. Cadinoiu, F. Parfait, C.Delaite, .I. Atanase, C. Solcan, O. M. Daraba	Drug-Loaded Polymeric Micelles Based on Smart Biocompatible Graft Copolymers with Potential Applications for he Treatment of Glaucoma <i>International Journal of Molecular Sciences</i> , 23(16), 9382, 2022, <a href="https://doi.org/10.3390/ijms23169382">https://doi.org/10.3390/ijms23169382</a> <b>main author</b>		x	1,028	0,1142
30	C. E. Iurciuc (Tincu), <b>M. Popa</b> , L.I. Atanase, O. Popa, L. Ochiuz,	Multifractal modeling of curcumin release mechanism from polymeric nanomicelles <i>Drug Delivery</i> . 29, 2883-2896, 2022, <a href="https://doi.org/10.1080/10717544.2022.2118402">https://doi.org/10.1080/10717544.2022.2118402</a> <b>co-author</b>		x	0,820	0,0745



	P. Postolache, V. Ghizdovat, S.A. Irimiciuc, M. Agop, C. Volovat, S. Volovat					
31	C. Popovici, <b>M. Popa</b> , V. Sunel, L.I. Atanase, D.L. Ichim	Drug delivery systems based on Pluronic micelles with antimicrobial activity, <i>Polymers</i> 14, 3007 2022 doi: 10.3390/polym14153007. <b>main author</b>	x		0,604	0,1208
32	C.L.Logigan, C. Delaite, C.E. Tiron, C.Peptu, <b>M.Popa</b> , C.A.Peptu	Chitosan grafted poly(ethylene glycol) methyl ether acrylate particulate hydrogels for drug delivery applications, <i>Gels</i> , 8, 494, 2022, <a href="https://doi.org/10.3390/gels8080494">https://doi.org/10.3390/gels8080494</a> <b>co-author</b>	x		0,626	0,1043
33	M. Mihoub, S. Hamri, T. Bochaour, <b>M. Popa</b> , D.M.Popa, L. Bedjaoui Alachaher.M. Hamcerencu	An Interpenetrating Polymer Network hydrogel based on cellulose, applied to remove colorant traces from the water medium: electrostatic interactions analysis <i>Polymers</i> , 14, 5090, 2022, <a href="https://doi.org/10.3390/polym14235090">https://doi.org/10.3390/polym14235090</a> <b>main author</b>	x		0,604	0,0863
34	A.I. Gugoasa, S. Racovita, S. Vasiliu, <b>M. Popa</b>	Grafted Microparticles Based on Glycidyl Methacrylate, Hydroxyethyl Methacrylate and Sodium Hyaluronate: Synthesis, Characterization, Adsorption and Release Studies of Metronidazole <i>Polymers</i> , 14, 4151,2022. <a href="https://doi.org/10.3390/polym14194151">https://doi.org/10.3390/polym14194151</a> <b>main author</b>	x		0,604	0,151
35	L. Stan. T. Malutan, I. Volf, <b>M.Popa</b> , C.E.Tincu, C.S.Stan	Photoluminescent polymer cryogels with R, G and B emission, <i>International Journal of Molecular Sciences</i> , 23, 16004, 2022. <a href="https://doi.org/10.3390/ijms232416004">https://doi.org/10.3390/ijms232416004</a> <b>main author</b>		x	1,028	0.1713
36	A.N.Cadinoiu, <b>M.Popa</b>	Editorial on Special Issue “Pharmaceutical Formulations with Antimicrobial Properties”. <i>Pharmaceutics</i> 15, 137, 2023, <a href="https://doi.org/10.3390/pharmaceutics15010137">https://doi.org/10.3390/pharmaceutics15010137</a> <b>co-author</b>		x	0,755	0,3775
37	L. Stan, I. Volf, C.S.Stan, C. Albu, A.Coroaba, L.E.Ursu, <b>M.Popa</b>	Intense blue photo emissive Carbon Dots prepared through pyrolytic processing of ligno-cellulosic wastes, <i>Nanomaterials</i> 13, 131, 2023. <a href="https://doi.org/10.3390/nano13010131">https://doi.org/10.3390/nano13010131</a> <b>co-author</b>		x	0.707	0,101

38	A.I.Gugoasa, S. Racovita, S. Vasiliu, <b>M.Popa</b>	Semi-interpenetrating polymer networks based on hydroxyethyl methacrylate and poly(vinylpyridine)/polybetaines, <i>Polymers</i> 15,490,2023, <a href="https://doi.org/10.3390/polym15030490">https://doi.org/10.3390/polym15030490</a> <b>main author</b>	x		0,604	0,151
39	D.M. Rata, A.N.Cadinoiu, L.I.Atanase, G.Calin Mihalache, <b>M.Popa</b>	Design and characterization of dexamethasone phosphate-loaded microcapsules obtained by a double-emulsion method, <i>International Journal of Pharmaceutics</i> , 639, 122971, 2023 <a href="https://doi.org/10.1016/j.ijpharm.2023.122971">https://doi.org/10.1016/j.ijpharm.2023.122971</a> <b>co-author</b>		x	0,755	0,151
40	C.E.Tincu (Iurciuc), B. Bouhadiba, L.I.Atanase, C.S.Stan, <b>M.Popa</b> , L. Ochiuz	An Accessible Method to Improve the Stability and Reusability of Porcine Pancreatic $\alpha$ -Amylase via Immobilization in Gellan-Based Hydrogel Particles Obtained by Ionic Cross-Linking with Mg <sup>2+</sup> Ions <i>Molecules</i> ,28, 4695, 2023, <a href="https://doi.org/10.3390/molecules28124695">https://doi.org/10.3390/molecules28124695</a> <b>main author</b>		x	0,659	0,1098
41	M. Dellali, K. Zanoune, M. Hamcerencu, C-L. Logigan, <b>M.Popa</b> , H.Mahmoudi	Superparamagnetic Hybrid Nanospheres Based on Chitosan Obtained by Double Crosslinking in a Reverse Emulsion for the Cancer Treatment <i>Polymers</i> , 15, 4493, 2023, <a href="https://doi.org/10.3390/polym15234493">https://doi.org/10.3390/polym15234493</a> <b>main author</b>	x		0,604	0,1007
42	C.E.Tincu (Iurciuc), C.V.Andritoiu, <b>M.Popa</b> , L.Ochiuz,	Recent Advancements and Strategies for Overcoming the Blood-Brain Barrier Using Albumin-Based Drug Delivery Systems to Treat Brain Cancer, with a Focus on Glioblastoma, <i>Polymers</i> , 15, 3969, 2023, doi : 10.3390/polym15193969 <b>main author</b>	x		0,604	0,151
43	C.S.Stan, N. Elouakassi, C.Albu, <b>M.Popa</b> , A.M.Concepti A. Coroaba, L. Ursu, H. Kaddami, A.Abdemaji	Photoluminescent argan waste derived Carbon Nano Dots embedded in polymer matrices as photonic conversion layers for solar PV cells <i>Nanomaterials</i> 14, 83 2024 <a href="https://doi.org/10.3390/nano14010083">https://doi.org/10.3390/nano14010083</a> <b>co-author</b>		x	0,707	0,0786
44	C.L.Logigan, C.Delaite, <b>M.Popa</b> , E.S.Bacaita, C.E.Tiron, C.Peptu, C.A.Peptu	Poly(ethylene glycol) methyl ether acrylate grafted chitosan based micro and nanoparticles as a drug delivery system for antibiotics, <i>Polymers</i> , 16, 144, 2024 <a href="https://doi.org/10.3390/polym16010144">https://doi.org/10.3390/polym16010144</a> <b>co-author</b>	x		0,604	0,0863
					$\sum AIS_i/n_i = 5,2488$	

\* AIS 2022 (Web of Science, JCR June2023)

" The journal Materials Science and Engineering C is not found in the list of indexed articles Web of Science JCR . However, it can be found on the list communicated by UEFISCDI in 2023 (<https://uefiscdi.gov.ro/scientometrie-baze-de-date>), position 9424. Here, the journal's AIS is 1.372. On the journal website (<https://journalsearches.com/journal.php?title=Materials%20Science%20and%20Engineering%20C>) the SJR (AIS) is 1.086. Quartila Q1. I took into account this lower value in the calculation presented in the table.

**List of articles as main author or co-author, published in journals indexed Web of Science, JCR,  
Quartile Q1**

**8 articles as main author**  
**7 articles as co-author**

1. C.L.Savin, M.Popa, C.Delaite, M.Costuleanu, D.Costin, C.A.Peptu  
"Chitosan grafted –poly(ethylene glycol) methacrylate nanoparticles as carrier for controlled release of bevacizumab" – **main author**  
*Materials Science and Engineering C*, 98, 843-860, 2019, DOI: <https://doi.org/10.1016/j.msec.2019.01.036>,
2. D.M.Rata, A.N.Cadinoiu, L.I.Atanase, S.E.Bacaita, C.Mihalache, O.M.Daraba, M.Popa  
"In vitro behaviour of Aptamer-Functionalized Polymeric Nanocapsules Loaded with 5-Fluorouracil for Targeted Therapy" – **co-author**  
*Materials Science and Engineering C*. 103, 109828, 2019, [doi.org/10.1016/j.msec.2019.109828](https://doi.org/10.1016/j.msec.2019.109828)
3. A.-M. Pana, P.Sfarloaga, G.Rusu, M.Popa, L.M.Rusnac, G.-A. Dumitrel, G.Bandur  
"Biodegradation studies on new glycopolymers derived from oligomeric D-mannose itaconates and 2-hydroxypropyl acrylate" – **co-author**  
*Polymers Degradation and Stability*, 167, 210-216, 2019, <https://doi.org/10.1016/j.polymdegradstab.2019.07.008>
4. A.N.Cadinoiu, D.M.Rata, L.I.Atanase, O.M.Daraba, D.Gherghel, G.Vochita, M.Popa  
"Aptamer-Functionalized Liposomes as a Potential Treatment for Basal Cell Carcinoma" – **co-author**  
*Polymers*, 11, 1515, 2019, [doi:10.3390/polym11091515](https://doi.org/10.3390/polym11091515)
5. C.E.Iurciuc (Tincu), M.Stamate Cretan, V.Purcar, M.Popa, O.M.Daraba, L.I.Atanase, L.Ochiuz  
"Drug Delivery System Based on pH-Sensitive Biocompatible Poly(2-vinyl pyridine)-b-poly(ethylene oxide) Nanomicelles Loaded with Curcumin and 5-Fluorouracil" – **co-author**  
*Polymers*, 12, 1450, 2020, [doi:10.3390/polym12071450](https://doi.org/10.3390/polym12071450)
6. D.M.Rata, A.Cadinoiu, L.I.Atanase, G.Vochita, C.T.Mihai, M.Popa  
"Topical formulations containing aptamer-functionalized nanocapsules loaded with 5-Fluorouracil- An innovative concept for the active targeting of skin cancer cells" – **main author**  
*Materials Science & Engineering C*, Volume 119, February 2021, 111591 [doi: 10.1016/j.msec.2020.111591](https://doi.org/10.1016/j.msec.2020.111591).
7. N.Baranov, S.Racovita, S., Vasiliu, A.M.Macsim, C.Lionte, V.Sunel, M.Popa, J.Desbrieres,

- “Immobilization and release studies of triazole derivatives from grafted copolymer based on gellan, carrying betaine units” – **co-author**,  
*Molecules*, 26, 3330,2021, <https://doi.org/10.3390/molecules26113330>,
- 8.K. Zanoune Dellali, M. Dellali, D.M. Rata, A.N. Cadinoiu, L.I. Atanase, M. Popa, M.C. Spataru, C. Solcan  
 “Assessment of physicochemical and in vivo biological properties of polymeric nanocapsules based on chitosan and poly(N-vinyl pyrrolidone-alt-itaconic anhydride)” – **main author**  
*Polymers*, 14 (9),1811, 2022
9. C. Popovici, M. Popa, V. Sunel, L.I. Atanase, D.L. Ichim.  
 “Drug delivery systems based on Pluronic micelles with antimicrobial activity” – **main author**  
*Polymers* 14, 3007 2022
10. C.L.Logigan, C. Delaite, C.E. Tiron, C.Peptu, M.Popa, C.A.Peptu  
 “Chitosan grafted poly(ethylene glycol) methyl ether acrylate particulate hydrogels for drug delivery applications” – **co-author**  
*Gels*, 8, 494, 2022, <https://doi.org/103390/gels8080494>
11. M. Mihoub, S. Hamri, T. Bochaour, M. Popa, D.M.Popa, L. Bedjaoui Alachaher, M Hamcerencu  
 “An Interpenetrating Polymer Network hydrogel based on cellulose, applied to remove colorant traces from the water medium: electrostatic interactions analysis” – **main autor**  
*Polymers*, 14, 5090, 2022, <https://doi.org/10.3390/polym14235090>
12. A.I. Gugoasa, S. Racovita, S. Vasiliu, M. Popa  
 “Grafted Microparticles Based on Glycidyl Methacrylate, Hydroxyethyl Methacrylate and Sodium Hyaluronate: Synthesis, Characterization, Adsorption and Release Studies of Metronidazole” – **main author**  
*Polymers*, 14, 4151, 2022.<https://doi.org/10.3390/polym14194151>
13. A.I.Gugoasa, S. Racovita, S. Vasiliu, M.Popa  
 “Semi-interpenetrating polymer networks based on hydroxyethyl methacrylate and poly(vinylpyridine)/polybetaines” – **main author**  
*Polymers* 15,490,2023. <https://doi.org/10.3390/polym15030490>
14. M. Dellali, K. Zanoune, M. Hamcerencu, C-L. Logigan, M.Popa, H.Mahmoudi  
 “Superparamagnetic Hybrid Nanospheres Based on Chitosan Obtained by Double Crosslinking in a Reverse Emulsion for the Cancer Treatment” – **main author**  
*Polymers*, 15, 4493, 2023, <https://doi.org/10.3390/polym15234493>
15. C.L.Logigan, C.Delaite, M.Popa, E.S.Bacaita, C.E.Tiron, C.Peptu, C.A.Peptu

“Poly(ethylene glycol) methyl ether acrylate grafted chitosan based micro and nanoparticles as a drug delivery system for antibiotics” – **co-author**

*Polymers*, 16, 144, 2024, <https://doi.org/10.3390/polym16010144>

#### **9. List of research projects won by the applicant and their value:**

##### ***National projects***

1. Topical formulations with aptamer-functionalized nanoparticles for basal cell carcinoma treatment PN-III-P4-ID-PCE-2016-0613,2017-2019, **850.000 lei**

2. Dual active targeting carriers for the treatment of pulmonary infections based on drug loaded peptides-functionalized polymeric nano/microparticles PN-III-P4-ID-PCE-2020-2009,PCE 71/2021,2021-202, **1.198.032 lei**

##### ***International projects***

1. Active targeted drug delivery systems based on peptide-functionalized magnetic nanoparticles for the treatment of inner ear diseases, RO-NO-2019-0187, 15/2020,2021-2023, **1.163.984 euro (5.624.137,90 lei)**

#### **10. List of proposed patents, and accepted ones**

##### ***Proposed Patents***

C.S.Stan, C.Albu, M.Popa,

*Nanocompozit pe baza de structuri fotoemise de carbon si copolimeri ciclo-olefinici.*

*Nanocomposite based on photoemissive carbon structures and cyclo-olephinic structures*

Nr. inreg. OSIM A/00746 from 18.11.2022, under evaluation

##### ***Accepted Patents***

C. S. Stan, M. Popa, P. Horlescu

*Compozit fotoluminescent pe bază de polimeri hidrosolubili și complecși ai gadoliniului,*

*Photoluminescent composite based on water-soluble polymers and gadolinium complexes*

RO31560, Published at 30.07.2020

**ANNEX: Copy of the PhD Diploma**

Candidate name and signature:

Prof.em.PhD.eng.dr.H.C POPA Marcel

Date: 09.02.2024