



ROMANIAN ACADEMY
“PETRU PONI” INSTITUTE OF MACROMOLECULAR CHEMISTRY
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COMPETITION ANNOUNCEMENT

As the Beneficiary, the “Petru Poni” Institute of Macromolecular Chemistry Iași, organizes the competition to hire within the funding contract no. 760285/27.03.2024 „*Multifunctional hybrid 3D architectures based on hollow GaN nano-micro-tetrapods for advanced applications at Petru Poni Institute of Macromolecular Chemistry (MultiPodGaN)*”, CF 161/31.07.2023, financed within the PNRR-III-C9-2023-I8, Investment I8. *Development of a program to attract highly specialised human resources from abroad in research, development and innovation activities*, Component C9. Support for the private sector, research, development and innovation, several vacancies, as follows:

I. The positions of Research Assistant (*Member - PhD student*):

Number of positions open to competition: 2

Type of employment contract: Individual part-time employment contract

Estimated contract start date: 11.11.2024

Employment period: temporary, until 31.12.2025 with the possibility of extension, with funding from “*Multifunctional hybrid 3D architectures based on hollow GaN nano-micro-tetrapods for advanced applications at Petru Poni Institute of Macromolecular Chemistry (MultiPodGaN)*” project, funding contract no. 760285/27.03.2024.

The place of the research activity: Center of Advanced Research in Bionanoconjugates and Biopolymers (IntelCentru) within the “Petru Poni” Institute of Macromolecular Chemistry

Place of the competition: “Petru Poni” Institute of Macromolecular Chemistry (ICMPP), 41A Grigore Ghica Voda Alley, 700487 Iași

Specific requirements for the Research Assistant positions (*Member - doctoral student*):

Job description: *Organic synthesis and characterization of small molecular compounds; preparation and characterization of supramolecular assemblies; drug release studies.*

- The candidate must possess a bachelor's and master's degree in one of the following fields chemistry/chemical engineering and must be enrolled as PhD student within an institution organizing doctoral studies in Romania in chemistry/chemical engineering domains;
- The candidate must have experience in organic synthesis and characterization of small molecular compounds/supramolecular assemblies;
- The candidate must have knowledge about the controlled drug release mechanisms;
- Experience in physico-chemical characterization techniques through: UV-Vis spectroscopy, fluorescence spectroscopy, dynamic light diffusion, FTIR spectroscopy and NMR spectroscopy considered an advantage;
- The candidate must have skills in processing and presenting research results;
- Average knowledge of a foreign language, English mandatory, other international languages are considered an advantage;
- The candidate must show availability for travel in the country and abroad;
- Must possess motivation and creativity, along with advanced communication and teamwork abilities;
- Practical knowledge of computer software (Word, Excel, Power Point) is required. Familiarity with ChemDraw, Origin, Image J is considered an advantage.

Selection procedure:

- **Analysis of the candidate's file** (eliminary step) - Lack of a requested document or failure to fulfill a mandatory requirement entails elimination from the competition. The results of the selection of competition files are displayed on the ICMPP website with the mention „admitted” or „rejected”;
- **Written test** (eliminary) – The written test will take place at the ICMPP headquarters and will consist of a written exam with subjects according to the examination topics displayed on the website. Only candidates who have submitted all the necessary documents to register for the competition and meet the conditions for participation are accepted to participate in the written test. To be declared admitted, candidates must obtain a minimum grade of 8 (eight) in the written test. The results of the written test are displayed on the ICMPP website with the mention „admitted” or „rejected”;
- **Oral examination** - The oral examination will take place at the ICMPP headquarters and will consist of the presentation of the scientific activity of the candidates. To be declared admitted, candidates must obtain a minimum grade of 8 (eight) in the oral test. The results of the oral examination are displayed on the ICMPP website with the mention „admitted” or „rejected”.

The result of the competition tests is appreciated by each member of the commission with grades from 1 to 10; the grade of the test represents the arithmetic average of the grades given by the committee members.

The final mark of the candidates is calculated as follows:

$$\text{final grade} = \text{written exam grade} \times 0.7 + \text{oral exam grade} \times 0.3$$

The ranking of candidates will be done according to the final average.

Examination topics:

1. Functional groups and their reactivity in organic reactions.
2. General notions of stereochemistry.
3. Reaction mechanisms in organic chemistry.
4. Non-covalent interactions in supramolecular chemistry.
5. Techniques used in the characterization of supramolecular assemblies.

Bibliography:

1. M. Avram, Chimie organică, Editura Academiei Române, București, 1983, vol. 1 și 2.
2. I. Pogany, M. Banciu, Metode fizice în chimia organică, Editura Științifică, București, 1972.
3. Reinhard Bruckner, Advanced Organic Chemistry Reaction Mechanisms. Elsevier, 2002 ISBN: 978-0-12-138110-3.
4. Katsuhiko Ariga, Toyoki Kunitake, Supramolecular Chemistry – Fundamentals and Applications. Springer-Verlag Berlin Heidelberg 2006. DOI: 10.1007/b84082.
5. Helena Dodziuk, Introduction to Supramolecular Chemistry. Kluwer Academic Publisher 2002. DOI 10.1007/0-306-47587-1.

Note: These positions are open to all candidates, regardless of their gender, religion, race or sexual orientation, and the project team rejects any type of discrimination.

II. The positions of Scientific Researcher (Member - post-doctoral researcher):

Number of positions open to competition: 1

Type of employment contract: Individual part-time employment contract

Estimated contract start date: 11.11.2024

Employment period: temporary, until **31.12.2025** with the possibility of extension, with funding from “*Multifunctional hybrid 3D architectures based on hollow GaN nano-micro-tetrapods for advanced applications at Petru Poni Institute of Macromolecular Chemistry (MultiPodGaN)*” project, funding contract no. 760285/27.03.2024.

The place of the research activity: Center of Advanced Research in Bionanoconjugates and Biopolymers (IntelCentru) within the “Petru Poni” Institute of Macromolecular Chemistry

Place of the competition: “Petru Poni” Institute of Macromolecular Chemistry (ICMPP), 41A Grigore Ghica Voda Alley, 700487 Iași

Specific requirements for the Scientific Researcher position (*Member - post-doctoral researcher*):

Job description: Characterization of supramolecular assemblies. In vitro experiments on cancerous and normal cell lines; cell viability

- The candidate must have completed higher education, including a bachelor's and master's degree, in the fields of chemistry/chemical engineering/bioengineering;
- The candidate holds a PhD degree in one of the previously mentioned fields and meet the criteria for being classified as a “post-doctoral researcher” as defined in Instruction no. 2260/15.11.2023 regarding the clarification of the definition of “post-doctoral researcher” within projects related to the investments of Component 9 “Support for the private sector, Research, Development and Innovation” of the National Recovery and Resilience Plan issued by the Ministry of Research, Innovation and Digitization: “the person who, on the date of the call, holds a doctor's degree and has experience in research of no more than 8 years full-time equivalent, from the date of the first doctoral degree, but not exceeding 10 years full-time equivalent under the conditions provided by the European Research Executive Agency (REA)”. *The date of the call refers to the date launch of the PNRR-III-C9-2023-I8 call, namely 26.06.2023. **If the doctoral degree was awarded by ministerial order, the date of the ministerial order shall be taken into account, otherwise the date indicated on the diploma shall be taken into account;
- The candidate must have basic knowledge in the interpretation of the results obtained through the physical-chemical characterization techniques of nano and microstructured materials: electrochemical methods of analysis, FTIR spectroscopy; SEM microscopy;
- The candidate must have experience in performing in vitro experimental tests on cancerous and normal cell lines and in determining cell viability;
- Experience in interpreting the results obtained experimentally by UV-Vis spectroscopy and fluorescence spectroscopy is an advantage;
- The candidate must possess skills in processing and presenting research results;
- The candidate should have prior experience in preparing drafts/manuscripts for publication in scientific. The applicant is required to have a minimum of 5 publications published in journals that have an ISI impact factor;
- Average knowledge of a foreign language, English mandatory, other international languages are an advantage;
- The candidate must show availability for travel in the country and abroad;
- Must possess motivation and creativity, along with advanced communication and teamwork abilities;
- Practical knowledge of computer software (Word, Excel, Power Point) is required. Knowledge of ChemDraw, Origin, ImageJ is an advantage.

Selection procedure:

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The result of the competition tests is appreciated by each member of the commission with grades from 1 to 10; the grade of the test represents the arithmetic average of the grades given by the committee members.

The final mark of the candidates is calculated as follows:

$\text{final grade} = \text{written exam grade} \times 0.7 + \text{oral exam grade} \times 0.3$

The ranking of candidates will be done according to the final average.

Examination topics:

1. Types of interactions in supramolecular assemblies.
2. Physico-chemical characterization techniques of materials and surfaces.
3. Protocols for obtaining cell cultures.
4. Preparation of cell culture for cytotoxicity tests.
5. Cell viability and cytotoxicity tests.

Bibliography:

1. Helena Dodziuk, Introduction to Supramolecular Chemistry. Kluwer Academic Publisher 2002. DOI 10.1007/0-306-47587-1.
2. R. Kubota, W. Tanaka, I. Hamachi, Microscopic Imaging Techniques for Molecular Assemblies: Electron, Atomic Force, and Confocal Microscopies. Chem. Rev. 2021, 121, 22, 14281–14347. DOI: 10.1021/acs.chemrev.0c01334.
3. N. Geue, R. E. P. Winpenney and P. E. Barran. Structural characterisation methods for supramolecular chemistry that go beyond crystallography. Chem. Soc. Rev., 2022, 51, 8-27. DOI: 10.1039/D0CS01550D.
4. M. Butnaru, A. Luca. Cultura de celule animale: Tehnici uzuale si tehnici speciale. Editura PIM, Iasi, 2014.
5. D. P. Clark, N. J. Pazdernik. Molecular Biology. 2012, 2nd Edition - March 20. ISBN: 9780123785954.
6. L. G. Necula, D. Dragu, I. Pitica, C. Tanase. Tehnici de biologie celulara si moleculara. 2003. ISBN: 978-606-27-2324-8.

Competition timetable:

Competition publication date: 25.09.2024

Deadline for file submission: 25.10.2024, at 12.00 at the ICMPP headquarters or online at:
management_multipodgan@icmpp.ro

Publication of the results of the files analysis: 28.10.2024, at 12.00

Deadline for appeals of the results of the files analysis: 29.10.2024, at 12.00

Publication of the final results of the file analysis: 29.10.2024, at 16.00

For **Research Assistant positions:**

Written test date: 30.10.2024, at 10.00

Date of publication of the results of the written test: 31.10.2024, at 12.00

Deadline for appeals of the results of the written test: 01.11.2024, at 12.00

Date of publication of the results of the written test: 01.11.2024, at 16.00

Oral examination: 04.11.2024, at 11.00

Date of publication of the results of the oral examination: 04.11.2024, at 15.00

Deadline for appeals of the results of the oral examination: 05.11.2024, at 15.00

Publication of the final results of the oral examination: 06.11.2024, at 12.00

Publication of the final results of the competition on the institute website: 06.11.2024, at 15.00

For **Scientific Researcher position:**

Written test date: 30.10.2024, at 10.00

Date of publication of the results of the written test: 31.10.2024, at 12.00

Deadline for appeals of the results of the written test: 01.11.2024, at 12.00

Date of publication of the results of the written test: 01.11.2024, at 16.00

Oral examination: 04.11.2024, at 12.00

Date of publication of the results of the oral examination: 04.11.2024, at 15.00

Deadline for appeals of the results of the oral examination: 05.11.2024, at 15.00

Publication of the final results of the oral examination: 06.11.2024, at 12.00

Publication of the final results of the competition on the institute website: 06.11.2024, at 15.00

General requirements for candidates:

- The candidate knows Romanian and/or English - written and spoken;
- The candidate has full exercise capacity;
- The candidate has a state of health corresponding to the position for which he/she is applying;
- The candidate is medically fit;

The enrolment file must contain:

- The candidate must submit a formal request addressed to the ICMPP management by which he requests the registration in the competition for filling the vacant position, dated and signed by the candidate, approved by the director of the institute and registered within the legal registration deadline
- Copy of identity document and copies of documents certifying the change of name, if applicable;
- Copies of the documents certifying the candidate's studies: bachelor's and/or master's degree accompanied by the transcript (academic reports or diploma supplement);
- Diplomas obtained in other states must be recognized by the National Centre for Recognition and Equivalence of Diplomas (CNRED);
- Certificate attesting the quality of doctoral student enrolled in an institution organizing doctoral studies in Romania for for the **research assistant - doctoral student positions;**
- Annex 9 – Agreement of the doctoral supervisor (model displayed on the website) filled and signed for **research assistant - doctoral student positions;**

- Copy of the doctor's degree or the order of the Minister of Education regarding the award of the doctor's degree for the **scientific researcher – postdoctoral position**;
- Curriculum vitae adapted to employment requirements;
- List of scientific contributions accompanied by evidence (if applicable);
- Cover letter (free format) in which to indicate the research areas of interest and the motivation for applying for the position;
- Medical certificate in original, attesting clearly the state of health, the number, date, name of the issuer and its quality, in the standard format established by the Ministry of Health;
- Criminal record or declaration on his own responsibility that he/she has no criminal convictions that would make him/her incompatible with the position for which he/she is applying, with the completion of the competition file (up to the date of the first competition test) with the original criminal record.

The candidate undertakes to maintain the confidentiality of the research topics in which he/she participates.

Details regarding the specific conditions can be read on the website <https://icmpp.ro>, <<Vacancies>> Section, <https://www.euraxess.gov.ro/ro>, <https://jobs.research.gov.ro/>, or additional information can be obtained at the Human Resources Office at the headquarters of the “Petru Poni” Institute of Macromolecular Chemistry from Iasi, telephone +40.332.880.220, as well as at e-mail: **management_multipodgan @icmpp.ro**.

This announcement was published on the Institute’s website - <<Vacancies>> Section, by the Secretary of the competition commission on 26.09.2024