



ROMANIAN ACADEMY

"PETRU PONI" INSTITUTE OF MACROMOLECULAR CHEMISTRY

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COMPETITION ANNOUNCEMENT

As the Partner Beneficiary, the "Petru Poni" Institute of Macromolecular Chemistry Iași, organizes the competition to hire within the framework of the Exploratory Research Project (PCE) under Program 4 – "Program 5.1 – Ideas" entitled "Nanocellulosic hybrid Janus aerogels with high floatability for synchronous photocatalytic dyes mineralization and hydrogen production," acronym FloatAeroCat, with the code PN-IV-P1-PCE-2023-1020, which is part of the National Research, Development and Innovation Program 2022–2027 (PNCDI IV), the position of **Early-stage researcher (R1) - Scientific Researcher (Member – Postdoctoral Researcher)**:

Number of positions open to competition: 1

Type of employment contract: Individual part-time employment contract

Estimated contract start date: 16.06.2025

Employment period: temporary, until 31.12.2025 with the possibility of extension, with funding from FloatAeroCat project

The place of the research activity: Polyaddition and Photochemistry Department 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

Job description: *Synthesis and characterization of nanofibrillated cellulose and hydrophilic/hydrophobic nanocellulose aerogels*

General requirements for candidates:

- have Romanian citizenship, citizenship of other European Union member states or states belonging to the European Economic Area and domiciled in Romania;
- know Romanian/English, written and spoken;
- have full capacity to work;
- have a state of health appropriate to the position for which he/she is applying;
- have not been definitively convicted of committing a crime against humanity, against the state or against authority, of duty or in connection with duty, which impedes the course of justice, of forgery or of acts of corruption or of a crime committed intentionally, which makes him/her incompatible with the duties of the position, except in the case where rehabilitation has occurred.

Specific requirements for the Early-stage researcher (R1) - Scientific Researcher (Member – Postdoctoral Researcher):

- The candidate must hold a PhD degree in the field of Chemistry.
- The candidate is a researcher with experience and scientific achievements in the field of cellulose-based materials, cellulose oxidation, and selective functionalization of cellulose, demonstrated by the originality and international impact of scientific publications.
- The candidate must be capable of contributing effectively to the activities of the research team, particularly regarding the synthesis of nanofibrillated cellulose and hydrophilic/hydrophobic nanocellulose aerogels.

- Proven experience, demonstrated through diplomas, scientific publications, CV, etc., in the development of cellulose-based materials, with emphasis on their synthesis and characterization.
- The candidate must be available for part-time employment for a fixed period.
- The candidate must hold Romanian citizenship, citizenship of other European Union Member States, or of states belonging to the European Economic Area, and must reside in Romania.
- The candidate must be fluent in English - written and spoken.
- Practical computer operating knowledge (Word, Excel, Power Point, Origin) is mandatory.
- The candidate must be motivated and creative, with advanced communication and teamwork skills.

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. Structure, morphology, and conformation of polysaccharides.
2. Cellulose: macromolecular structure of cellulose.
3. Chemical reactions of macromolecular compounds: polymer-analogous transformations.
4. General concepts of physicochemical characterization of macromolecular compounds.
5. Nanocellulose: production methods and characterization techniques.

Bibliography:

1. S. Dumitriu, Polysaccharides: Structural Diversity and Functional Versatility. Dumitriu S. (Ed.), 2nd Ed. Dekker: New York, 2004.
2. D. Klemm, B. Philipp, T. Heinze, U. Heinze, W. Wagenknecht, Comprehensive Cellulose Chemistry. Volume 2: Functionalization of Cellulose. WILEY-VCH: Verlag GmbH, Weinheim, 1998.
3. C. Simionescu, C. Vasiliu Oprea, V. Bulacovschi, B. Simionescu, C. Negulianu, Macromolecular Chemistry, Didactic and Pedagogical Publishing House, Bucharest, 1985.
4. N. P. Cheremisinoff, Polymer characterization : laboratory techniques and analysis. Published in the United States of America by Noyes Publications, Westwood, New Jersey, 1996.
5. J. Huang, A. Dufresne, N. Lin, Nanocellulose: From Fundamentals to Advanced Materials, Wiley-VCH Verlag GmbH & Co. KGaA, 2019.

Competition timetable:

Competition publication date: 07.05.2025

Deadline for file submission: 06.06.2025, at 12.00 at the ICMPP headquarters or online at: pponi@icmpp.ro

Publication of the results of the files analysis: 06.06.2025, at 15.00

Deadline for appeals of the results of the files analysis: 09.06.2025, at 12.00

Publication of the final results of the file analysis: 09.06.2025, at 15.00

Written test date: 10.06.2025, at 10.00

Date of publication of the results of the written test: 10.06.2025, at 14.00

Deadline for appeals of the results of the written test: 11.06.2025, at 12.00

Date of publication of the results of the written test: 11.06.2025, at 15.00

Oral examination: 12.06.2025, at 10.00

Date of publication of the results of the oral examination: 12.06.2025, at 14.00

Deadline for appeals of the results of the oral examination: 13.06.2025, at 12.00

Publication of the final results of the oral examination: 13.06.2025, at 15.00

Publication of the final results of the competition on the institute website: 13.06.2025, at 16.00

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 Council for Attestation of University Titles, Diplomas and Certificates (CNATDCU);
- Certificate attesting the status of doctoral/master student enrolled in Chemistry field
- Curriculum vitae adapted to employment requirements;
- 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 0332 880 220.

This announcement was published on the Institute's website - <<Vacancies>> Section, by the Secretary of the competition commission on 07.05.2025