

JOB OFFER

Position in the project:	PhD candidate
Scientific discipline:	Material Sciences; Conductive Nanomaterials; Biomaterials; Drug Delivery
Job type:	Scholarship
Number of job offers:	1
Remuneration/stipend amount/month:	Around 1 850 euro in the first 2 years and around 2 300 euro in the 3 rd year.
Position starts on:	1 st October 2024
Maximum period of contract/stipend agreement:	36 months
Institution:	Institute of Fundamental Technological Research (IPPT PAN), Warsaw
Project leader:	Filippo Pierini
Project title:	Nature-inspired conductive and bioadhesive kirigami-based nanoarchitected cardiac patch for combined chemo- and stem cell therapy <i>Project is carried out within the Opus programme of the National Science Centre (NCN)</i>
Project description:	<p>The cardiovascular system, also called the circulatory system, is a complex network of organs and tissues responsible for transporting blood, oxygen, nutrients, hormones, and waste products through the body. The appropriate working of the cardiovascular system is indispensable for overall health. Disorders of the cardiovascular system, such as heart disease, hypertension, and stroke, can have severe consequences and may require medical intervention. A myocardial infarction, also known as a heart attack, occurs when blood flow to a part of the heart muscle is blocked, usually by a blood clot. The lack of blood flow denies the affected area of oxygen, and if the blood flow is not restored promptly, that part of the heart muscle begins to die. Healing the heart after a myocardial infarction is a complicated task, which is still a challenge for material engineers working in the field of biomaterial development as well as biologists and doctors, as it is well-known that medical approaches based on a single therapy are not efficient in appropriately curing infarcted hearts.</p> <p>This research aims to design, develop, and test the applicability of innovative hierarchically structured nanocomposite materials that can be used as an implantable cardiac biomaterial for myocardial infarction treatment. The novel nanoplatfoms fabricated during the project can merge a few targeted biomedical strategies into one single nanostructured biomaterial. The outstanding functional biomedical-oriented features of the developed cardiac platform are reached thanks</p>

	to its unique properties merged with biocompatibility and the ability to deliver multiple advanced drugs directly. The proposed advanced cardiac nanomaterial will be fabricated using an innovative method capable of producing nanostructured platforms based on polymeric nanofibers, hydrogels, conductive polymers, and bioactive molecules.
Key responsibilities include:	<ol style="list-style-type: none"> 1. Design and conduct electrospinning experiments 2. Develop hydrogels-based conductive materials 3. Morphological, chemical, mechanical, and functional characterization of the obtained hydrogel-based biomaterials (from designing/performing the experiments to the data analysis) 4. Report preparation 5. Disseminate the scientific results, publishing the work in high-quality journals
Profile of candidates/requirements:	<ol style="list-style-type: none"> 1. Holding a MSc degree in Chemistry, Polymer Science, Physics, Nanotechnology or any related field of Materials Engineering 2. Solid background in polymer biomaterial development (expertise in electrospinning as well as hydrogel and/or polymer nanomaterial fabrication is desirable) 3. Keen interest in polymer nanomaterial characterization (e.g. SEM, AFM, FT-IR, XRD, DSC, TGA, etc.) 4. Ability to design, execute and evaluate research experiments 5. Excellent collaboration skills as well as the ability to work independently 6. Highly capable of communicating scientific results in English, both orally and in writing
Required documents:	<ol style="list-style-type: none"> 1. Motivation letter with a description of research interests and previous experience relevant to the position applied for 2. CV including a complete list of publications 3. Attested copies of scientific degree (MSc), diploma in English 4. Recommendation letter and an additional referee that we can contact 5. Please include in your CV the following clause: "I agree to the processing of personal data contained in my job offer for the needs necessary to carry out the recruitment process conducted by IPPT PAN with headquarters in Warsaw, ul. A. Pawińskiego 5B, according to art. 13 para. 1 and 2 of Regulation (EU) 2016/679 of the Parliament and of the Council of 27 April 2016 on the protection of individuals with regard to the processing of personal data and the free movement of such data and the repeal of Directive 95/46 / EC (RODO).
We offer:	<ol style="list-style-type: none"> 1. PhD position in a top-ranked research institute in Europe 2. Access to modern equipment and facilities 3. Possibility for interdisciplinary collaborations with foreign cooperation partners 4. Opportunity to participate in scientific conferences and training courses
Please submit the following documents to:	Applications should be sent to konkursy.ippt@ippt.pan.pl (with fpierini@ippt.pan.pl in Cc) quoting "PhD1 Opus [Surname of the Applicant]" in the email subject.
Application deadline:	15th August 2024 (candidates selected for interviews will be contacted a few days after the deadline)
For more details about the position, please visit:	www.nanoprg.com or email: fpierini@ippt.pan.pl
Euraxess job/stipend offer:	TBA

Due to the entry into force of Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016, we also require that your job advertisements include a clause requesting the candidate's consent to the processing of his or her personal data by the institution which carries out the recruitment process.