NOVA University of Lisbon

NOVA School of Science and Technology

Notice no. 24255-M/2024/2 published in Diário da República, 2nd series, no. 211, 30/10/2024

Deadline: 21/11/2024

Opening of an international open competition for the recruitment of 1 Principal Researcher for a scientific research career on a private law basis

Professor José Júlio Alves Alferes, Dean of the NOVA School of Science and Technology of NOVA University of Lisbon, under the powers delegated by Order no. 181/2023, of 4 January, makes it known that, by order of de 30/10/2024 of the Rector of NOVA University of Lisbon, Prof. João Sàágua is open, for a period of 15 working days from the day immediately following the publication of Notice in the Official Gazette, an international documentary competition, with internal reference "**Inv.Pri.3-DCM**", for the recruitment of a Principal Researcher, in the scientific area of **Materials Science,** with emphasis on **Low-dimensional materials for optoelectronic, bioelectronic and electronic applications,** under the terms of an open-ended individual employment contract, in accordance with Law no. 7/2009, of 12 February, which approves the Labour Code, with its successive amendments, and under the terms of Regulation no. 393/2018, of 28 June.

Position open under the FCT TENURE programme - 1st edition, with reference 2023.11076.TENURE.030, within the scope of the strategic objectives of the i3N Associated Laboratory - Institute of Nanostructures, Nanomodelling and Nanofabrication, CENIMAT HUB - Materials Research Centre, and whose researcher will become an integrated member of this Research Unit and respective Associated Laboratorty, and the line of funding to support the indefinite hiring of PhDs (OE 2024 additional funding programme to stimulate the hiring of researchers).

In compliance with paragraph h) of article 9 of the Constitution of the Portuguese Republic, NOVA University of Lisbon, as an employer, actively promotes a policy of equal opportunities between men and women in access to employment and professional progression, scrupulously providing in order to avoid any and all forms of discrimination. In this sense, terms such as "candidate", "selected", "recruited", "hired", "author", "researcher", among others that refer to the people applying for the competition, are not used in this Notice to refer to their gender.

I - Workplace:

The place of work will be at facilities of the NOVA School of of Science and Technology of NOVA University of Lisbon, located on the Caparica Campus, in the Department of Materials Science, i3N Associated Laboratory - Institute of Nanostructures, Nanomodelling and Nanofabrication, CENIMAT HUB - Materials Research Centre.

The employee will make all the journeys, in Portugal or abroad, inherent to their duties or necessary to carry out their activity.

II – Main functions and activities:

The selected candidate will work as Principal Researcher at NOVA FCT and will carry out scientific research work, namely carrying out the following tasks:

1. Lead and manage research projects focused on the chemical synthesis and characterization of low-dimensional materials, including 0D (e.g., lead-free perovskite quantum dots), 1D (e.g., multicomponent oxide semiconductors) and 2D (e.g., MXenes, transition metaldichalcogenides) structures toward application in opto-bio-electronic devices.
2. Explore heterostructures (e.g. core/shell structures) for improving the efficiency and stability of thesynthesized materials.
3. Develop novel strategies for the sustainable synthesis and deposition of low-dimensional materials, with an emphasis on eco-friendly and scalable fabrication techniques (e.g., printing).
4. Collaborate with CENIMAT|i3N team members to synergistically spread knowledge to and from low-dimensional materials development for a global benefit of the sustainable advanced materials strategy of the research center.
5. Tailor material synthesis and (post-)deposition processes to reach performance and stability suitable to the needs of optoelectronic, bioelectronic and electronic devices under development in the research group (e.g., solar cells, biosensors, memristors).
6. Interact with multiple players relevant in low-dimensional materials and its applications, including industry partners, government agencies, and academic institutions to establish further collaborative research initiatives and secure additional funding to develop the area at CENIMAT|i3N.
7. Lead the publication of research findings in reputable scientific journals and interact with innovation office to analyze intellectual property valorization arising from the developed work.
8. Mentor junior researchers, postdoctoral fellows, and graduate students working on mechanical energy harvesting-related research projects.

III - Remuneration position and exclusivity:

The initial positioning of the researcher under a private law regime within one of the salary levels of the category is subject to negotiation with the employer, in accordance with the researcher's profile and experience, as stipulated in Article 15 of Regulation No. 393/2018, of June 12.

The Principal Researcher will be recruited on a full-time basis, which implies renouncing the exercise of any remunerated function or activity, whether public or private, including the exercise of a liberal profession, and the rules set out in article 52 will apply on a full-time basis under private law.

IV – Contracting modality

The recruitment of the Principal Researcher in the form of an individual open-ended contract will take place under the terms of the Regulation on the careers, recruitment and employment contracts of researchers under an employment contract at NOVA University of Lisbon - Regulation no. 393/2018, of 28 June.

Everything not included in this notice will be referred to Regulation no. 393/2018, of 28 June.

V - Applicant admission requirements

1. Under the terms of the Statute of the Scientific Research Career, approved by Decree-Law no. 124/99, of 20 April (ECIC), as amended, it is a general requirement to hold a doctoral degree and have a relevant scientific curriculum in the area of the competition.

2. National, foreign and stateless candidates who hold a doctoral degree in the scientific area of Materials Science, Nanotechnology and Nanosciences, Chemistry or related fields, with a strong focus on the chemical synthesis of low-dimensional materials, may apply. If their qualifications were obtained abroad, they must provide proof of recognition, equivalence or registration of the degree, under the terms of the applicable legislation. This formality must be completed by the date the contract is signed.
3. They must have a scientific and professional CV with a profile appropriate to the activity to be carried out.

VI – Application instructions

1. The application must be instructed by filling in the respective application form, which is available at https://www.fct.unl.pt/en/faculdade/concursos/investigadores.
2. The application process must be accompanied by documentation in Portuguese or English.
3. The application should be submitted preferably by email, containing the following documents:

a) Certificate proving the Doctor's degree in the disciplinary area to which the competition relates;

b) Curriculum vitae of the candidate, which must include:

i) The identifications “Researcher ID”, “Scopus Author ID” and “Google Scholar ID”.

ii) Research and development activities and all other activities considered relevant to this tender procedure, in accordance with the terms of this announcement.

iii) Scientific and technological development plan (max. 5 pages A4).

c) In the Curriculum Vitae, the 5 works that the candidate considers to be the most representative should be marked, namely in terms of their contribution to the development and evolution of the scientific area in which the competition is open. This selection must be accompanied by a brief justification in which the candidate explains their contribution;

d) Declaration, under oath, that if the jury chooses to request the documentation indicated in the previous paragraphs or any other scientific documentation mentioned in the candidate's curriculum vitae, it will be delivered within 10 working days;

e) Other documents that candidates deem relevant for the analysis of their application.

VII – Presentation of the application

1. The documents supporting the application must be submitted by the 15th working day, counting from the day following the publication of this Notice in the Diário da República.
2. Candidates will submit their application documents, in a single PDF file, by email to the following address: concursos.investigadores@fct.unl.pt.

VIII - Evaluation parameters

1. In this call the candidates' ability and performance will be evaluated in the various parameters under the terms of article 16 of ECIC.
2. The curricular evaluation of the various candidates in each of the parameters described below shall take into consideration the scientific area in which the call is open.

3. The parameters to be taken into consideration in the curricular evaluation of the candidates, in each of the sections, are as follows:

   a) Quality of Scientific and Technical Work (QSTW);

   b) Professional Experience and Training (PET);

   c) Contributions in Scientific Supervision Activities (CSA);

   d) Participation in Management Bodies (PMB);

   e) Provision of Services to the Community (PSC);

   f) Scientific and Technological Development Plan (STDP).

IX - Interview

1. The Jury will deliberate at the first meeting on the need to carry out an interview with all the candidates.
2. The interview, which does not constitute a selection method and is not graded, aims to obtain clarification or explanation of elements contained in the candidates' Curriculum vitae.

X - Classification by absolute merit of candidates

1. In accordance with paragraph 1 of article 27 of the Statute of the Scientific Research Career, approved by Decree-Law no. 124/99, of 20 April (ECIC), the jury will deliberate on the admissibility on absolute merit of the candidates, expressed by the formulas Rejected or Approved.
2. Candidates who have an overall curriculum that the jury considers appropriate for the job to be filled are approved on Absolute Merit, namely, merit of the candidates' scientific and technical work, as well as experience and professional training, compatible with the category and scientific area(s) and subarea(s) for which the competition is open, always taking into account, for this assessment, the following reference criteria:

   a) Have evidence of scientific quality expressed by indexed publications, preference will be given to candidates who have at least 15 (fifteen) articles indexed in the SCOPUS or Web of Science database of Clarivate Analytics in the scientific area of the competition or related areas in the last 5 (fifteen) years;
   b) Have experience in supervising or co-supervising undergraduate, master's, or doctoral students, or post-doctoral fellows or fellows with a master's degree;
   c) Have led or participated in the conception, development and execution of research projects and/or lines of research of R&D units of the national scientific system or others, including the FCT competitions Concurso Estímulo ao Emprego Científico Individual, CEEC, or FCT researcher;
   d) Evidence of the impact of the research carried out and the conduct of efforts aimed at maximizing this impact (such as knowledge transfer, collaboration with industry or society, science communication, support for public policies);
   e) Have experience in the synthesis, deposition, and characterization of low-dimensional materials, as well as their integration into optoelectronic, bioelectronic, or electronic devices. Additionally, have expertise in advanced material characterization techniques, such as Atomic Force Microscopy (AFM), Scanning Electron Microscopy (SEM), Transmission Electron Microscopy (TEM), and optical spectroscopy, along with experience in the electrical and optical characterization of devices.

3. The candidate who succeeds in obtaining a favorable vote of more than half of the members of the jury is considered approved on absolute merit.

XI- Ordering and voting methodology

1. Once the candidates who have passed in absolute merit have been identified, the jury will proceed to rank them in relative merit.
2. Each member of the jury shall perform a curricular evaluation of the candidates by presenting a written opinion, to be later included in the minutes, in which they propose the ordering of the candidates based on the evaluation criteria indicated in this notice, scoring each candidate for each criterion on a numerical scale from 0 to 100 points.
3. The evaluation criteria indicated shall be weighted as follows:

a) Quality of Scientific and Technical work (QSTW): 50%

The following will be considered:

i) Scientific publications: a parameter that takes into account books, book chapters, and articles in scientific journals authored or co-authored by the candidate, considering their nature, impact factor, and number of citations;

ii) The scientific/technological level and the innovation of the contributions to the advancement of the current state of knowledge;

iii) Diversity and multidisciplinarity;

iv) The importance of the works selected by the candidate as the most representative, particularly with regard to their contributions to the development and evolution of the scientific field for which the position is open;

v) Coordination or participation in scientific projects submitted to competitive calls: a parameter that considers the candidate's participation and coordination of scientific projects, taking into account their territorial scope and size, the technological level, the importance of contributions, innovation, and diversity;

vi) Creation or enhancement of laboratory or computational resources: a parameter that considers the candidate's participation or coordination of initiatives that resulted in the creation or enhancement of experimental or computational laboratory infrastructures to support research;

vii) Promotion of scientific activity: a parameter that considers the candidate’s demonstrated leadership ability in research teams;

viii) Recognition by the international scientific community: a parameter that considers awards, editorial or review activities in scientific journals, participation in editorial boards of scientific journals, and coordination and participation in program committees for scientific events.

b) Professional Experience and Training (PET): 5%

Level and suitability of the candidate's academic degrees and qualifications and professional experience to fulfil the duties of Principal Researcher in the scientific area of the competition, namely in the parameters and/or themes considered preferential, as well as their relevance to the development

of this scientific area in the Electronics, Optoelectronics and Process Materials group of CENIMAT|i3N, with relevance to the line of bioelectronic and biomedical devices.

c) Contributions to Scientific Orientation Activities (CSOA): 10%

i) It takes into account the supervision of doctoral students, master's students and undergraduate students, trainees and research fellows, taking into account the number, quality, scope and scientific/technological impact of the resulting publications, theses, dissertations and final course work, especially distinguishing award-winning work and international recognition.

ii) Professional training actions: a parameter that takes into account participation in and coordination of technological training actions aimed at companies and the public sector, taking into account their nature, technological intensity and results achieved.

iii) Pedagogical content: a parameter that takes into account the publications, computer applications and experimental prototypes of a pedagogical nature that the candidate has produced or participated in, taking into account their nature and their impact on the national and international community.

iv) Teaching activity: a parameter that takes into account the curricular units that the candidate has coordinated and taught, taking into account diversity, pedagogical practice and the universe of students.

d) Participation in Management Bodies (PMB): 5%

i) Positions in bodies of higher education institutions: a parameter that takes into account the nature and responsibility of the position.

ii) Coordination positions in courses: a parameter that takes into account the universe of activity in the coordination of courses in the scientific area of the competition.

e) Provision of Services to the Community (PSC): 10%

i) Industrial and intellectual property, including authorship and co-authorship of patents, models and industrial designs, taking into account their nature, territorial scope, technological level and the results obtained;

ii) Scientific and technological publications: a parameter that takes into account articles in national magazines and conferences and other scientific and technological publications, taking into account their professional and social impact;

iii) Conception and production of scientific and technological initiatives: a parameter that takes into account the added value for NOVA FCT.

iv) Participation in and co-ordination of scientific and technological dissemination initiatives, taking into account the nature and results achieved by these, when carried out with:

- The scientific community, namely by organizing congresses and conferences;
- The media;
- Companies and the public sector.

f) Scientific and technological development plan (STDP): 20%

Career development plan, relating to the lines of research in the area and subarea for which the competition is open and which the candidate proposes to dedicate themselves to at i3N|CENIMAT, complying with the following requirements:

i. Identification of the objectives of the project you intend to develop, demonstrating what advances may result from the research in relation to the current state of the art in this area;
ii. Systematized and succinct description of the research strategies and methodologies that the candidate proposes to adopt to achieve the proposed objectives, of the main expected results and of the impact that these may have on the development of their career and on the community;
iii. The career development plan cannot exceed 5 A4 pages written in 12 pt font size.

4. The ordering of the Approved candidates is done by voting of the members of the jury, respecting the ordering presented in the opinion referred to in the previous number, in the following terms:

a) The first vote is intended to determine the candidate to be placed in first place;

b) In the voting referred to in the previous paragraph, if a candidate obtains more than half of the votes to be placed in first place, he will be ranked in this position;

c) If the situation referred to in the previous paragraph does not occur, a new vote is held, only among the candidates who obtained votes for 1st place, after removing the candidate least voted for that place in the previous vote;

d) If there is more than one candidate to be withdrawn, due to an equal number of votes, with a minimum of one vote each, a vote is held only on these candidates to determine the candidate to be withdrawn from the next vote; in this voting, each member will vote, among the candidates with equal votes, for the candidate who occupies the lowest position in the ordering contained in his/her opinion;

e) If there is a tie, the tiebreaker is done through the tiebreaker vote or casting vote of the president of the jury, under the terms of paragraph 3 of article 19 of the ECIC.

f) Voting is repeated until it is determined, by the procedure described above, which candidate to rank first. If there are only two candidates left and each one of them gets half of the votes, the tiebreaker is done through the casting vote of the president of the jury;

g) Once the candidate for first place is chosen, he is removed from the voting and the whole process is repeated for second place and so on until an ordered list of all candidates is obtained.

XII – Notifications and Hearing of Interested Parties

1. There is a prior hearing, under the terms of the Code of Administrative Procedure, of candidates who have been rejected, and of candidates ordered in place of the ordering list of candidates that cannot be provided in the job position in the competition. All candidates are notified of the homologation of the jury's final deliberation.
2. Notifications are made by email.
3. The tender process can be consulted by the candidates, at the Human Resources Division of NOVA FCT, under the terms indicated in the aforementioned notification.

XIII – Jury composition

1. Under the terms of Regulation no. 393/2018, of 28 June, the assessment of applications will be carried out by a jury and will follow the procedure set out in articles 16, 18, 19, 20, paragraphs 1 and 2, 21 to 23, 24, 26 and 27 of the Scientific Research Career Statute (ECIC).
2. Under the terms of Article 19 of the Scientific Research Career Statute, the jury must be composed of a minimum of five and a maximum of nine members:
3. It must include Researchers or Professors not belonging to the Institution for which the competition is open or national or foreign specialists, in a number not less than half minus one of the members of the jury.
4. The members of the competition jury are:

   President:

   Doctor José Júlio Alves Alferes, Full Professor and Dean of the NOVA School of Science and Technology of NOVA University of Lisbon, by delegation of competences.

   Vowels:

   Doctor Viorica Musat, Full Professor, Universidade de Galati, Galati, Romania

   Doctor Pedro Miguel Félix Brogueira, Full Professor, Instituto Superior Técnico da Universidade de Lisboa,

   Doctor Tito da Silva Trindade, Full Professor, Universidade de Aveiro;

   Doctora Elvira Maria Correia Fortunato, Full Professor, Faculdade de Ciências e Tecnologia da Universidade NOVA de Lisboa;

   Doctor João Paulo Miranda Ribeiro Borges, Full Professor, Faculdade de Ciências e Tecnologias da Universidade NOVA de Lisboa.

XIV - Non-discrimination and equal access policy

NOVA FCT actively promotes a policy of non-discrimination and equal access, whereby no candidate may be favored, disadvantaged or deprived of any duty on the grounds of ancestry, age, gender, disability, sexual orientation, chronic illness, nationality, ethnic origin or race, religion or political convictions.

XV - Data Protection

In accordance with the RGPD – General Data Protection Regulation, the data collected will be processed exclusively for the processing of the application.

And for the record this Notice is published

October 30, 2024 - The Dean, Prof. Doutor José Alferes