

Job description for recruitment Junior Professor Chair 2023 campaign

Faculté des Sciences

University : University of Caen-Normandie

Education Location : UFR Sciences, Boulevard Maréchal Juin, 14032 Caen

Research location: Laboratoire de Physique Corpusculaire de Caen (LPCC) UMR 6534, CNRS, University of Caen-Normandie, Ensicaen

Identification de l'emploi

Research area : Nuclear physics

Key words : nuclear structure and reactions, nuclear data

Project title and acronym: Experimental Nuclear Physics at Spiral2 - ExNuPhyS

CNU Section: Section 29 - Elementary constituents

Job status : vacancy

Duration : 4 to 6 years. Tenure will be as "Professeur des Universités"

Job profile

Experimental Nuclear Physics @ Spiral2

Education profile

Types of course concerned: Master degree

Teaching objectives and staffing requirements:

The University of Caen Normandie aims to increase its training in the field of applied nuclear energy as part of the revival of low-carbon nuclear energy production. The person recruited will be expected to contribute to experimental and applied teaching, as well as being involved in the continuing education and professional training programmes developed at the University of Caen. The current teaching and research staff have an ambitious project to develop a technology hall for nuclear applications, covering all the practical training needs of the University of Caen and ENSICAEN, and open to collaboration with industry. This facility will use cutting-edge equipment, both in nuclear instrumentation and simulation, including augmented reality. The person recruited, an experienced experimenter, will have to be involved in this project. He or she will also be involved in teaching through research, supervising trainees at M1 and M2 levels.

The volume of teaching is set at 42 hours of lectures or 64 hours of tutorials or practical work or any equivalent combination, as an annual average over the duration of the contract.

University Strategy

Since 2021, the institution has been keen to adopt an ambitious talent management policy, with a focus on putting in place a welcome package to attract young talents or to prepare for generational renewal by improving living and working conditions (HRS4R, Euraxess, post-doctoral support, M2 support, reduction in course load, RIPEC bonuses, etc.). This strategy goes hand in hand with high-quality recruitment of doctoral students, post-doctoral students and lecturers and professors at the institution.

The 'Junior Professor Chair' scheme is a logical extension of this strategy and has become a key tool for the University in its willing to boost its international attractiveness and strengthen its research. The University of Caen Normandie is therefore taking a proactive approach to this scheme, which will help to accelerate its development strategy.

The University's Junior Professor Chair application therefore has a threefold ambition:

- Strengthen the attractiveness and visibility of research in priority sectors that are highly competitive internationally;

-respond to the need to increase the internationalisation of Master's courses;
 -encourage inter- and multi-disciplinary research.

The institution would like to use the Junior Professor Chairs to recruit experienced young researchers who already have good research experience. They will need to have solid international experience and show strong potential for supervising and leading a research team, as well as a degree of autonomy and scientific depth that will enable them to consider obtaining an *Habilitation à Diriger des Recherches* during the term of the contract, as well as the ability to participate in major European or international projects before their tenure. The ERC scheme will be a particular focus. It should also be noted that the Normandy Region will be providing strong support for this scheme, up to doubling the resources allocated by the ANR.

The Junior professor chairs that are requested will be dedicated to attracting the best candidates and offering them optimal conditions. They will also be able to support the emergence of projects that will provide the excellence of tomorrow.

With a community of 33,000 students and 1,500 teaching and research staff, the University of Caen Normandy aims to have an impact and be attractive at the highest international level.

Research profile

Hosting laboratory strategy

As soon as GANIL was built in Caen, fundamental nuclear physics became the major research theme of the LPC Caen, with a first focus on heavy ion collisions (equation of state and properties of nuclear matter) and a second on the study of exotic nuclei (nuclear structure models). In the 1990s, the laboratory's research activities were first expanded with a second area dedicated to civil nuclear applications (downstream of the cycle) and medical applications (hadrontherapy). A third research area devoted to the study of the Standard Model (precision measurements in beta decay) was finally created in the 2000s. Much of this research has been developed through experiments carried out on GANIL's beams. The teams have supervised numerous theses on these subjects and published numerous works, notably in the most prestigious international journals in the field (Nature, Physical Review Letters, etc.). The value of this research is well recognised nationally and internationally (Rapport de conjoncture CNRS 2019, Prospectives nationales IN2P3 2021, NuPECC LRP 2017).

The recent commissioning of NFS, the arrival of S3 and the imminent construction of DESIR at GANIL/SPIRAL2 mean that we are keen to strengthen our contributions to these cutting-edge facilities of international importance. Our teams are already working closely with GANIL and other laboratories at IN2P3 (IJCLab, LP2IB, LPSC, etc.) and internationally (RIKEN (Japan), IKS-Leuven, SCK-CEN (Belgium), INFN (Italy), JYFL (Finland), etc.), involved in various physics projects. Having a permanent teaching and research staff locally is an extremely valuable asset for these modern facilities when it comes to ensuring the reliability of their operation and that of the equipment installed, as well as training students. LPC Caen is looking to recruit a talented researcher with an experimental background in nuclear physics, to make an effective contribution to the success of these new facilities.

Summary of the scientific project

The research project involves taking an active part in the operation of one of the new SPIRAL2 facilities at GANIL (NFS or S3 then DESIR in a few years' time), by making a major scientific contribution accompanied by appropriate technical expertise. Over the next decade, these latest-generation facilities will revolutionise our understanding of nuclear matter in a complementary or competitive international context, by providing crucial results, particularly in the following areas:

- the measurement of specific nuclear data collected on NFS, in particular for reactor physics;
- the study of exotic nuclei on S3-LEB ($N=Z$ in the 100Sn region, heavy and very heavy nuclei) using innovative techniques (laser spectrometry with the IGJLIS method and mass measurements by MR-ToF-MS).

The experiments will be carried out on the world's most advanced facilities, using state-of-the-art equipment. The results obtained should therefore have a major impact on the international community. The person recruited will therefore have the opportunity to present these results at major international conferences in nuclear physics and to publish them in international journals with a high impact factor.

The person recruited should be in a position to lead a major project in one of these SPIRAL2 facilities, supervising doctoral and post-doctoral students, and in the context of international collaborations. Complementary experiments in foreign facilities and future involvement in the DESIR facility could of course be envisaged.

Application and recruitment procedures

Applications are open from the 11 September 2023, 10:00 noon (Paris time) to 11 October 2023, 16:00 noon (Paris time). Applications must be submitted via Galaxie application.

The connection :

- If candidates have never logged in:

The “New candidate” section allows them to be issued with a candidate number and a personal password, which ensure the confidentiality and authentication of the operation.

- If candidates have a candidate number and a personal password previously issued on the Galaxie portal: They use them to identify themselves, the Galaxie application keeping this information in memory.

The documents to be attached to the application file are set out in the Order of 6 February 2023, as amended, relating to the general terms and conditions for transfers, secondments and competitive recruitment of lecturers, university professors and junior professors (see in particular Title III, articles 24 to 27 and Title IV, articles 28 to 31). :

- **photographic identification ;**
- **proof of possession of a PhD or a diploma, title or qualification recognised as equivalent;**
- **the examination report for the diploma produced or a statement from the institution certifying that no examination report has been drawn up;**
- **an analytical presentation of the works, books, articles, achievements and activities related to the profile of the post in question, mentioning those that the candidate intends to present at the audition;**
- **a copy of each of the works, books, articles and achievements mentioned in the analytical presentation and which the candidate intends to present at the audition, not exceeding 6 documents.**

Applicants who do not hold a PhD must have their university diplomas, qualifications and titles recognised as equivalent to a PhD in accordance with one of the procedures set out in article 5 of decree no. 2021-1710 of 17 December 2021 relating to the junior professorship contract provided for in article L. 952-6-2 of the Education Code and article L. 422-3 of the Research Code.

Any application incomplete by the above-mentioned deadline will be declared inadmissible.

Only candidates selected by the selection committee on the basis of their applications will be invited to an audition. The auditions will take place in October according to procedures to be announced shortly.

Procedures for organising the auditions (identical for all candidates for the same position).

Duration of each audition: 20 min presentation - 40 min questions

The aforementioned decree no. 2021-1710 of 17 December 2021 sets out the conditions for renewing contracts, the procedures for assessing scientific merit and suitability to perform the duties of each body prior to tenure, the procedures for appointing members of selection and tenure committees and the conditions of the service commitment.

Contacts

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