

CALL FOR APPLICATIONS JUNIOR PROFESSOR CONTRACT

Aix-Marseille University (AMU) is offering a Junior Professor contract in the scientific field of several sections of the National University Council (CNU), especially 28, 30, 31, 32, 33, 63

Level of the position in which the candidate will be granted tenure: University professor (cat. A)

Nature and purpose on the research and teaching project : advanced materials and nanotechnologies

Keywords: material science, optronic, material chemistry, nanoelectronic, nanophotonic

Expected duration: 4 years

Remuneration: 3 443,50 € minimum gross/month (depending of the experience)

Starting date : between November 1st, 2023 and January 1st, 2024

Affiliation: faculty of sciences

The research project will be implemented in one of the **research units of the AMUTECH institute** (CINaM, CPT, ICR, Institut Fresnel, ISM2, IM2NP, LP3, Madirel et PIIM), depending on the theme developed:

- AMUTECH : <https://www.univ-amu.fr/fr/amutech> - contact: Pierre Muller and Christophe Girardeaux (amutech-direction@univ-amu.fr)

Strategy of the host institution

Aix-Marseille University (AMU) is building its strategy on several priority axes that mark its identity and forge its roadmap to consolidate the institution's excellence and attractiveness. This Chair is particularly relevant to two of these priorities:

- Making interdisciplinarity a strategic and transforming tool.
- Developing structuring actions to strengthen the links between training and research (France 2030 Tiger Project - <https://www.univ-amu.fr/fr/public/pia-3-projet-tiger-0>)

The implementation of this strategy has led AMU to create 21 institutional institutes (<https://www.univ-amu.fr/en/public/amu-institutes>) that represent vectors of innovation between education and research, on interdisciplinary themes of excellence. They are in line with the Convergence institutes (CenTuri, ILCB) and the graduate schools (nEUro*AMU, AMSE). Each institute brings together and animates the skills of several research units to meet the challenges of the theme it covers. They are therefore privileged, but not unique, places to develop interdisciplinary research and training.

The person recruited for this chair will have to be part of this interdisciplinary approach and strengthen the training-research link.

Strategy of the host laboratories

The Chair of Junior Professor is supported by the AMUtech Institute on behalf of the nine associated laboratories.

The AMUtech institute, created in January 2021, aims to lead and coordinate Aix-Marseille's strengths in materials science and nanotechnology by developing collaborations between the nine joint research units that it has federated, by strengthening the link between training and research and interdisciplinarity, by

intensifying the development and enhancement of shared platforms and remarkable equipment of the AMUtech joint research units, and by reinforcing the site's attractiveness and socio-economic value.

Summary of the scientific project

In the framework of a multidisciplinary research, between AMUtech research units, on so-called smart materials, the activities of the recruited person will focus on one of the following topics: i) the synthesis and/or multi-scale modeling of bio-inspired hybrid nano devices for energy applications, ii) the synthesis, advanced characterization, nanolithography, modification of 2D materials such as graphene and modified analogues, iii) the elaboration and functionalization of nanoporous or nanostructured materials for electrochemical energy conversion or storage iv) synthesis and analysis of functionalized nano-porous particles for medical applications, v) self-assembly of metallic nano-antennas and molecules for light harvesting with rectenna and power generation applications, vi) use of laser sources for the realization of functionalized and nano-structured nano-objects that can deliver targeted actions, e.g., the use of a laser for the production of a nano-electron microscope. , (vii) the use of plasmonics and nanophotonics to improve the study of innovative materials, metamaterials, biosensing and the sensitivity of sensors. The choice of the joint research unit within AMUtech will be made according to the specificities of the project of the selected person.

Summary of the teaching project.

The teaching project will aim to contribute to the internationalization of our courses by proposing a speciality course in the field of advanced materials (smart materials or optronic) and/or nanotechnologies. This teaching will be given in English to students of the masters from the departments of physics and chemistry of the Sciences Faculty associated with AMUtech and/or to 4th and 5th year engineering students of the Polytech Marseille programs associated with the institute.

The person recruited will also participate in the establishment of the PhD program for doctoral students of the doctoral schools associated with AMUtech, and in the implementation of high-level practical work on the platforms linked to the institute. Involvement in the CIVIS (European Civic University) alliance and in the establishment of an AMUtech Master Class program will be particularly appreciated.

The professor will be able to use the local projects such as TFR (Transformation of Training through Research), to strengthen the link between training and research, or DREAM-U, which aims to promote student success in the first cycle, to obtain the means to propose these modifications to the training offer.

Funding (4 years)

CPJ funding (including the ANR package and candidate salary for 5 years)	420 k€
Complementary funding	50 k€
Total amount	470 k€

This budget includes the salary of the junior professor chair, i.e. 55k€/year, and 200k€ of ANR funding, 120k€ of which is dedicated to the financing of human resources (doctoral student, post-doctoral student, engineer, etc.). The Aix-Marseille site, through its AMIDEX foundation, supplements this funding with 50k€.

Scientific outreach

- Publications in high impact peer-reviewed journals
- Active participation in international conferences
- Participation in scientific dissemination actions of Aix Marseille University towards the public (Science Festival, European Researchers' Night, conferences for the general public, participative sciences ...)
- Participation in actions in connection with the institutes and the socio-economic world (decision-makers, communities, companies ...)

Open science

Aix-Marseille University is strongly involved in the open science approach and has set up an open science charter. The person recruited will respect this charter and will be part of this dynamic, in particular by referencing his/her productions in the HAL database and by depositing full-text documents, by publishing in open access journals and by setting up a data management plan.

Indicators (for monitoring the deployment of the project)

- Number, quality and impact of publications
- Number and ambition of research projects submitted / obtained
- Number and audience of dissemination actions towards the general public and/or society

Selection procedure

Conditions to be met to apply:

- hold a doctorate degree or a diploma whose equivalence is recognized, and to demonstrate a significant research experience in the topic of the chair of junior professor.

Application procedures:

Application must be sent exclusively on line GALAXIE (module FIDIS) : <https://galaxie.enseignementsup-recherche.gouv.fr/antares/can/astree/index.jsp>

Calendar:

Opening of application: April 13th, 2023, 10h AM, Paris time

Deadline for submitting application: May 22nd, 2023, 16h PM, Paris time

Content of the file

The list of mandatory documents to be provided is defined by the decree of 22 February 2022. It is available on the GALAXIE portal.

1. Application form entered online
2. Identity document with photograph
3. A document attesting to the possession of a doctorate, as provided for in article L.612-7 of the Education Code, or a diploma whose equivalence is recognized according to the procedure set out in article 5 of the Decree of December 17, 2021
4. Defense report of the doctoral thesis or, when relevant, of the diploma whose equivalence is recognized
5. Completed application form for a chair of junior professor (doc 5) (to be submitted in the section « titles and works » of the application GALAXIE/FIDIS).
6. work, books, articles, achievements

Documents (**2; 3 and 4**) written in a foreign language in whole or in part must imperatively be translated into French. The candidate will attest in compliance on honour. Otherwise the file will be declared inadmissible.

Any incomplete application will be declared inadmissible.

Recruitment procedures:

The evaluation will be held by a selection committee. The composition of the committee will be available on galaxie website before the beginning of its work.

Only will be called to the interviews, candidates previously selected after evaluation of their file by the selection committee.

Additional information

Candidates invited to the audition will have the opportunity to make a public presentation of their research work in front of the members of the units to which they can be assigned. This presentation can be done in person or by videoconference.

The presentation will last 30 minutes and will be followed by 30 minutes of discussion with the selection committee. It will include the following elements: the candidate's background, professional experience, research and teaching project

The organisation of the audition will be indicated on the invitation to the interview.

Doc 5 : Candidature à une chaire de professeur junior

(Application form for a chair of junior professor)

Ce document suivra obligatoirement le plan indiqué ci-dessous. Il n'est toutefois pas obligatoire de remplir toutes les rubriques (conservez la numérotation des sections même si certaines d'entre elles restent vides). Il sera déposé dans la partie titre et travaux du dépôt des pièces dans le module FIDIS de l'application GALAXIE. Une version word est disponible sur le site d'Aix-Marseille Université (<https://drh.univ-amu.fr/recrutement-cpj>)

Do not modify the font and the layout, but you may suppress the comments. This document should follow the guidelines given below. However, filling all sections is not mandatory (adhere to the order of the sections below, even if some of them are non-applicable). It will be submitted in the section « titles and works » of the application GALAXIE/FIDIS. A word version is available on the Aix-Marseille University website (<https://drh.univ-amu.fr/recrutement-cpj>)

1. Curriculum Vitae (max 2 pages)

1.1. Informations personnelles *(personnal information)*

Nom <i>(Last Name)</i>	
Prénom <i>(Fist name)</i>	
Nationalité <i>(nationality)</i>	
Date de naissance <i>(date of birth)</i>	
Diplôme de plus haut degré obtenu dans l'enseignement supérieur <i>(Highest degree obtained in higher education)</i>	
Email	
Téléphone portable <i>(phone number)</i>	
Adresse postale <i>(home address)</i>	
Adresse professionnelle <i>(business address)</i>	

1.2. Expériences professionnelles
(professional experience)

Année (year)	Poste (Position and status)	Organisation ou structure (institution)
Plus récente <i>(most recent)</i>		
...		
Plus ancienne <i>(the oldest)</i>		

1.3. Expertise scientifique (maximum 10 lignes)
Scientific expertise (maximum of 10 lines)

1.4. Mots-clés / keywords (maximum 5)

1.5. Événements majeurs dans la carrière scientifique
(Major events in scientific career)

Citer jusqu'à 5 faits marquants de votre carrière scientifique.

(List up to 5 highlights from your scientific career)

1.6. Relation au monde socio-économique
(Relationship to the socio-economic world)

Contrats, membre de conseils, consulting, rôle d'expert, etc.
(Contracts, advisory members, consulting, expert role, etc.)

1.7. Vulgarisation scientifique
(scientific dissemination)

Citer les occasions/événements vous ayant permis de diffuser vos travaux auprès du grand public.

(List the occasions/events that allowed you to disseminate your work to the general public)

2. Activités de recherche
(Research activities)

2.1. Description du parcours scientifique (maximum 1 page)
(Description of the scientific background)

2.2. Projet scientifique en lien avec la chaire de professeur junior (maximum 3 pages)

(Scientific project in connection with the chair of junior professor)

Contexte scientifique des travaux envisagés *(Scientific context of the proposed work)*

2.2.1. *Description du projet scientifique* *(Scientific context of the proposed work)*

2.2.2. *Verrous scientifiques liés au projet* *(Scientific barriers related to the project)*

2.2.3. *Indicateurs de suivi du déroulement du projet* *(Indicators for monitoring the progress of the project)*

2.2.4. *Dissémination des travaux de recherche auprès du grand public*
(Dissemination of research work to the public)

3. Activités d'enseignement (2 pages maximum)

(Teaching activities – max 2 page)

3.1. Expérience pédagogique dans l'enseignement supérieur

(Teaching experience in higher education)

3.2. Projet pédagogique en lien avec la chaire de professeur junior au sein de l'établissement d'accueil (maximum 2 pages)

(Pedagogical project in relation to the chair of junior professor at the host institution –max 2 page)

4. Liste exhaustive des contrats et des financements obtenus dans les activités de recherche

(Comprehensive list of contracts and funding obtained in research activities)

Année <i>(year)</i>	Source (agence, collectivité, entreprise, ...) <i>Origin (agency, community, compagny...)</i>	Intitulé du projet <i>(project name)</i>	Nom du coordinateur <i>(Coordinator's name)</i>	Budget (€)	Votre rôle dans le projet <i>(your role in the project)</i>

5. Liste des principales/principaux publications, ouvrages, brevets, communications orales, communications par affiche
(Comprehensive list of publications, books, patents, oral communications, poster presentations)

5.1. Principales productions scientifiques (Main scientific productions)

Citer vos 5 productions scientifiques les plus significatives. Expliquer en quoi elles sont significatives (innovation, originalité, impact ...) et votre rôle dans ce travail.

(Cite your 5 most significant scientific productions. Explain why they are significant (innovation, originality, impact ...) and your contribution to this work)

5.2. Synthèse (synthesis)

Nombre de publications avec comité de lecture <i>(Number of peer-reviewed publications)</i>	
Nombre de publications autres (proceedings, actes de colloques, chapitre d'ouvrage, ...) <i>(Number of other publications (proceedings, acts of workshops, book chapters, ...))</i>	
Nombre de brevets <i>(Number of patents)</i>	
Nombre de communications orales <i>(Number of oral communications)</i>	
Nombre de communications par poster <i>(Number of papers per poster)</i>	
Nombre de séminaires invités <i>(Number of invited seminars)</i>	

5.3. Articles publiés avec comité de lecture
(number of peer-reviewed articles)

[1]. Titre de l'article, auteurs, Journal, Volume, pages, (année). Nombre de citations *(Title of article, authors, Journal, Volume, pages, (year). Number of citations)*

[2].

5.4 Autres publications (proceedings, actes de colloques, chapitres d'ouvrages...)
Other publications (proceedings, acts of workshops, book chapters,...)

[1]. Titre du proceeding, auteurs, Journal, Volume, pages, (année). Nombre de citations.
(*Title of proceeding, authors, Journal, Volume, pages, (year). Number of citations.*)

[2].

Brevets (Patents)

Renseigner le tableau pour chaque brevet.

(*complete the table of each patent*)

Nom (<i>name</i>)	
Inventeur(s): (<i>Inventor(s)</i>)	
Numéro de brevet (<i>Patent number</i>)	

Communications orales (oral communications)

[1]. Titre de la communication, nom de la conférence, acronyme de la conférence, date, ville, pays (*Title of the paper, name of the conference, conference acronym, date, city, country*) ;

[2].

Communications par affiche (poster communications)

[1]. Titre de la communication, nom de la conférence, acronyme de la conférence, date, ville, pays (*Title of the paper, name of the conference, conference acronym, date, city, country*) ;

[2].

Séminaires invités (guest seminars)

[1]. Titre du séminaire, structure d'invitation, personne invitant au séminaire, date du séminaire, ville, pays (*Title of the seminar, inviting structure, person inviting to the seminar, date of the seminar, city, country*) ;

[2].