



Université  
de Limoges

**Fiche profil de poste**

<b>Post Identification</b>	Nature: Chaire Professeur Junior N°national: CNU/ Discipline: 30 - 63	Component : ENSIL-ENSCI Localisation : Limoges
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<b>Post status</b>	<input checked="" type="checkbox"/> V : vacant <input type="checkbox"/> S : likely to be vacant	Date de la vacance : Prise de poste au : September 1, 2022
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**Profile to publish :**

"Enseignant-chercheur" with experience in quantum photonics, quantum photonic technologies, photonics and photonic materials.

**Job Profile**

Full associate professor position with teaching in general physics for students of the Engineer School (ENSIL-ENSCI).

**Research profile**

Research in photonics and quantum photonics in the GPPMM group of the XLIM laboratory

The position is offered under a fixed-term contract (CDD), in compliance with French public law, for 6 years followed by a tenure in the body of University Professors. The conditions of the tenure-track are in "Décret n° 2021-1710 du 17 décembre 2021 relatif au contrat de chaire de professeur junior prévu par l'article L. 952-6-2 du code de l'éducation et par l'article L. 422-3 du code de la recherche"

**Description of the research and teaching project**

**Project title : innovations quantiques**

**Durée du projet : 6 years**

**Teaching :**

The recruited person must be able to give general physics courses of ENSIL-ENSCI and be involved in designing and providing the courses related to photonics, quantum photonics, optical telecommunications and optoelectronics. In direct relation with the research activities (see below), the recruited person will be involved in supervising students internships and liaising with the hosting companies or research entities.

The recruited person will ensure dissemination activities on quantum photonics and raising awareness among engineering students, doctoral students and permanent staff of ENSIL\_ENSCI and partner laboratories (i.e. IRCER, XLIM).

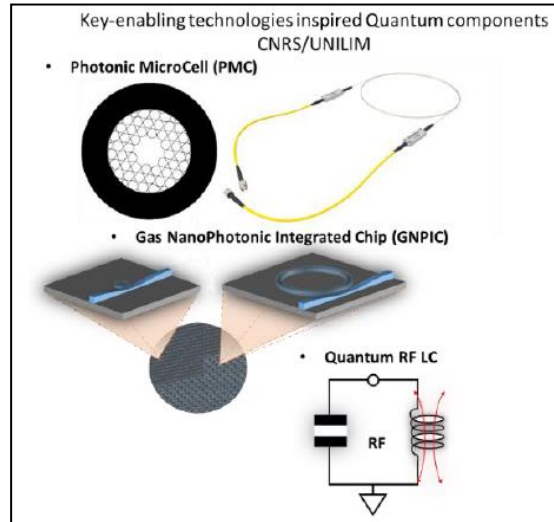
In addition to teaching skills, the future recruit will be fully involved in the school's training design and organization. He (or She) must have human qualities and an open-mindedness, essential features to inspire students to be technically creative and to develop entrepreneurship mindset.

The person recruited may benefit from a discharge of statutory service teaching-load.

**Research:**

The research project, coined nano-photonic gas "Gas quantum Nano-photonics (GN-PIC)", is part of an overarching vision whose aim is to build in Limoges a world class centre in the field of key enabling technologies (KET) for the Quantum 2.0. The attached figure shows the 3 KETs on which this program is based.

The first KET is based on hollow-core photonic crystal fiber (HCPCF) and photonic microcell (PMC) technology, and whose "quantum functionalization" rests on the ability to introduce thermal or cold atoms (the quantum agent) into the core of HCPCF to then transform it into a highly miniaturized atomic clock, magnetometer, single photon source or quantum memory. The second KET will focus on expertise in MEMS and microelectronics to develop "quantum mimes" at room temperature. The third KET will rest on designing, fabricating and functionalising GN-PIC. Here, we pursue a "photonic chips" approach that is radically innovative in terms of optical guidance physics, materials/processes to be explored and multiple quantum functions to be targeted. The light is mainly guided in a hollow core, like HCPCF/PMC, but on nanometric sizes. The materials of these chips will be based on the synthesis of innovative dielectrics, unlike the silicon or silicon nitride commonly used. The nano-structuring processes will draw on the expertise of XLIM and IRCER in nano-etching and additive printing. The production of the chip will be completed by the introduction of a gaseous medium (e.g. atomic vapour, cold atoms, etc.) and its functionalization for applications related to quantum sensing and quantum information.



The recruited person will be responsible for developing and functionalising the GN-PIC axis, which remains in an embryonic state, and coordinating the scientific roadmap with the other axes of KET under the direction of Fetah Benabid.

**Description of activities**

**Teaching :**

The candidate must be able to teach at the level of the engineering cycle (eq. L3 to M2) but also in the integrated preparatory cycle called FIMI (Initial Training in Engineering Professions (eq. L1 and L2) of the ENSIL-ENSCI engineering school in the fields of physics, photonics, optical telecommunications and optoelectronics.

Teaching department :	Spécialité Electronique et Télécommunications
Location:	Ecole d'Ingénieurs ENSIL-ENSCI
Teaching category:	Spécialité Electronique et Télécommunications
Teaching Contact:	Christelle Aupetit Berthelemot
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Department URL	<a href="https://www.ensil-ensci.unilim.fr/formations/cycle-ingenieur/specialite-electronique-et-telecommunications-elt/">https://www.ensil-ensci.unilim.fr/formations/cycle-ingenieur/specialite-electronique-et-telecommunications-elt/</a>

**Description of the teaching department :**

ENSIL-ENSCI is a cross-disciplinary engineering school, affiliated to the University of Limoges (UNILIM). ENSIL-ENSCI delivers engineering degrees in 5 specialties, among which Electronics and Telecommunications. Located at ETSER technopole in Limoges, it is at the heart of a very rich ecosystem. The curriculum of the school rests on UNILIM world-renown research activities in ceramics, biotechnology; electronics; photonics and microwaves; mechatronics, etc. It trains the students to the various facets of the engineering profession such as acquiring both scientific and technical skills, ability to work in international environments and acquiring management skills. ENSIL-ENSCI welcomes 850 students from post-baccalaureate level to engineer level. It has a network of more than 5,000 alumni all over the planet.

**Research :**

The recruited person will lead scientific projects within the research activities of the GPPMM group (XLIM laboratory) on photonics themes and more particularly on quantum photonics.

Name of the research group:	Equipe GPPMM XLIM UMR 7252
Place:	Limoges
Research Contact:	Frédéric Gérôme
Research contact phone:	05 55 45 72 73
Research contact Email:	gerome@xlim.fr
URL du laboratoire :	<a href="https://www.xlim.fr">https://www.xlim.fr</a>

**Descriptif du laboratoire :** XLIM UMR 7252 is a joint research institute of the CNRS and UNILIM. XLIM enjoys a world-ranked expertise in electronics and microwaves, optics and photonics, mathematics, computer science and image processing, CAD, in the fields of space, telecom networks, secured environments, bio-engineering, new materials, energy and imaging. XLIM gathers more than 450 teacher-researchers, CNRS researchers, engineers, technicians, post-doctoral and doctoral students, administrative staff. The GPPMM is a multi- and transdisciplinary research group covering the design and fabrication of microstructured photonic waveguides, nonlinear and quantum photonics in dilute media.

**Situation test for the candidate :**  YES  NO

**Startup package :**

Human resources :	Recruitment of a PhD on the research project topic Supervision by « Directeur de Recherche »
Material resources :	Desk & IT resources XLIM & IRCER platforms, GPPMM laboratories Mission expenses
Total amount of associated funding Of from Agence Nationale de la Recherche (ANR)	873 468 € 200 000 €

**Other informations :**

Specific experience requirements:	Over 3 years of experience in at least ONE of the following fields: photonic materials, quantum technology or quantum information.
Methods of organizing recruitment	Selection of files between May 05 and May 13, 2022 Auditions of successful candidates between May 30 and June 10, 2022
Submission of application files	<b>Dematerialized procedure between March 21, 2022 and April 20, 2022 (4 p.m.) only and obligatorily on the site Galaxie des personnels de l'enseignement supérieur / module FIDIS :</b> <a href="https://www.galaxie.enseignementsup-recherche.gouv.fr/ensup/candidats.html">https://www.galaxie.enseignementsup-recherche.gouv.fr/ensup/candidats.html</a>  <b>Beyond April 20, 2022 at 4 p.m., any application not submitted on the application or incomplete will be declared inadmissible.</b>