POST-DOCTORAL POSITION

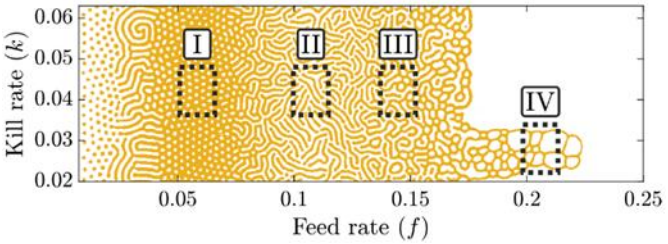
« Procedural Design of Computational Imaging Systems for Cybersecurity-driven Applications »

DESCRIPTION OF THE POSITION	
Duration	12 to 24 months, starting September 2026 (flexible)
Location	XLIM Research Institute, University of Limoges, France
Supervisors	Prof. Cyril Decroze and Prof. Thomas Fromentèze
Deadline	31 May 2026
Salary	~3,450 EUR/month gross (approx. 2,750 EUR net)

Research context :

The position address **cybersecurity-driven applications** and share a **hardware-software co-design** philosophy : reducing hardware complexity by transposing system constraints into the numerical domain.

The project targets localization, identification and authentication through computational imaging with frequency-diverse apertures produced by a procedural design methodology inspired by biological self-organization. These objectives are pursued through inverse problem resolution from a reduced number of measurements.



References :

https://ieeexplore.ieee.org/abstract/document/10539235
https://ieeexplore.ieee.org/abstract/document/10352654

Profile :

We are looking for a researcher active on RF imaging topics, with a strong background across three areas:

- **electromagnetics and radiation** - antenna design, full-wave simulation
- **signal processing and inversion** - inverse problems, back-propagation, compressed sensing.
- **RF instrumentation** - hands-on experience building and operating measurement.

Qualifications :

- PhD in electrical engineering, physics, or a related field (defended)
- Publications in international journals on topics relevant to the position
- Proficiency in written and spoken English

We offer :

- A stimulating research environment with strong publication opportunities, funded conference participation, and access to state-of-the-art RF measurement and simulation facilities
- Active collaboration with academic and industrial partners in the fields of computational imaging and electromagnetic security
- A pleasant living environment with among the lowest costs of living in France

Technical skills

Area	Details	Level
EM simulation	CST — radiating structures, cavities, periodic arrays	**REQUIRED**
RF imaging algorithms	Inverse problems, back-propagation, compressed sensing	**REQUIRED**
Scientific programming	MATLAB and/or Python : signal processing, instrument control.	**REQUIRED**
RF measurement	RF bench setup and automation (GPIB/SCPI/Python)	**VALUED**
Multistatic / MIMO	Array processing, spatial/frequency diversity, MIMO radar formalism	**VALUED**
Metasurface design	Unit-cell modelling, impedance surfaces, periodic structure optimisation	**VALUED**
ML-based inversion	Neural network solvers applied to EM inverse problems	**VALUED**

Environment :

XLIM is a joint research unit of the CNRS (National Center for Scientific Research) and the University of Limoges, with expertise spanning electronics and microwaves, optics and photonics, computer-aided design, mathematics, computer science and image processing. Application domains include secured environments, biotechnology and health, and energy management. XLIM brings together more than 440 staff across faculty, CNRS researchers, engineers, technicians, postdoctoral researchers, PhD students and administrative personnel.
Our instrumentation platform : https://www.unilim.fr/platinom/?lang=en

Application :

Send a single PDF to both addresses below, including :

- CV with full publication list
- Cover letter outlining how your background aligns with the position
- Two academic reference letters or contact details for referees

Deadline : 31 May 2026 : cyril.decroze@xlim.fr / thomas.fromenteze@xlim.fr

As the post may require access to information classified as national defence secrets, the successful candidate will be subject to a security clearance procedure, in accordance with the provisions of Articles R.2311-1 et seq. of the Defence Code and IGI No. 1300 of 9 August 2021.