Engineer / Post-doc in RF Integrated Circuit Design

Mission Overview

- Would you like to contribute to the design of **innovative radio-frequency integrated circuits**?
- Are you interested in working in an **international research environment** at the interface of **microelectronics, radio-frequency systems, and communication technologies**?

Join the **IMS Laboratory (Integration from Material to Systems)** at the **University of Bordeaux**, France.

IMS is a leading research laboratory in **systems science and engineering**, operating at the intersection of **Information and Communication Technologies (ICT)** and **engineering sciences**. This position is offered within the **Circuits and Systems (CAS) research team**, which specializes in the design of **analog, RF, and mixed-signal integrated circuits** for applications such as:

- wireless communications
- radar and sensing systems
- low-power electronics
- advanced signal processing architectures
- constrained and embedded electronics

The recruited candidate will contribute to the **design and implementation of advanced integrated circuits**, particularly in areas including:

- **Frequency synthesis** (from GHz up to millimeter-wave and sub-THz frequencies)
- **RF and millimeter-wave circuits**
- **Low-power electronics**
- **Wideband data converters**
- **Analog and mixed-signal circuit design**

The work will involve the **design, simulation, implementation, and characterization of integrated circuits** in advanced CMOS technologies.

By joining the CAS team, composed of approximately **15 researchers, engineers, and PhD students**, you will work in a **dynamic and multicultural research environment** recognized internationally in **RF and millimeter-wave integrated circuit design**.

Activities

We are seeking an **Engineer or Postdoctoral Researcher in RF and analog integrated circuit design**. The objective is to develop **new electronic architectures** that improve the performance of communication, sensing, and signal-processing systems, particularly in terms of: bandwidth, precision, energy efficiency, system integration. The research will focus on circuits operating **from GHz frequencies up to millimeter-wave and potentially sub-THz ranges**.

Integrated Circuit Design (RFIC / Mixed-Signal IC)

The candidate will be expected to:

- Conduct a **literature review** on existing architectures
- Contribute to **high-level system modeling** (Matlab, Python, or equivalent)
- Define **circuit specifications and key performance parameters**
- Design circuits using **advanced CMOS technologies** (e.g., FDSOI or equivalent)
- Carry out **post-layout simulations including parasitic extraction** and others (noise, PVT corners)
- **Layout design**

Implementation and Validation

- Participate in **design reviews**
- Contribute to **technical documentation and design reports**
- Design **PCBs for measurement and validation**
- Perform **experimental characterization and measurement** of fabricated circuits

Scientific Dissemination

Depending on the candidate's profile (especially for postdoctoral researchers), responsibilities may also include:

- Writing **scientific publications**
- Presenting results at **international conferences**
- Contributing to the **supervision of Master's students or PhD students**

Candidate Profile

Education

- **Engineering degree, Master's degree, or PhD** in electronics, microelectronics, RF engineering
- **Early-career candidates are welcome**; prior experience in RF or analog IC design is a plus

Desired Skills

- Knowledge of **analog and/or RF electronics**
- Knowledge of **mixed-signal integrated circuit design**
- Experience with **frequency synthesis, oscillators, PLLs, converters, or RF circuits** is appreciated
- Experience with IC design tools such as **Cadence**
- Programming skills in **Matlab, Python, or equivalent**
- Knowledge of **layout design and post-layout simulations** is a plus

Personal Skills

- Strong interest in **research and innovation**
- Ability to **work in a collaborative research environment**
- **Autonomy and scientific rigor**

Working Environment

The position is located at: **IMS Laboratory - Integration from Material to Systems**

IMS is an internationally recognized research unit bringing together several hundred researchers working in areas such as: microelectronics, radio-frequency engineering, communication systems, sensors and instrumentation, materials and devices, embedded systems. The candidate will join the **Circuits and Systems (CAS) team**, which focuses on **analog, RF, and mixed-signal integrated circuit design**.

Contract

12-month fixed-term contract, **renewable**

Salary

- **Salary negotiable**, depending on experience and profile
- Based on the **University of Bordeaux / Bordeaux INP / CNRS salary scales**

Application

Applicants should submit:

- Detailed **CV** (optional **list of publications or design portfolio**)

Send your application to Dr. Francois RIVET, Prof. Yann DEVAL, Dr. Hervé LAPUYADE

francois.rivet@ims-bordeaux.fr, yann.deval@ims-bordeaux.fr, herve.lapuyade@ims-bordeaux.fr