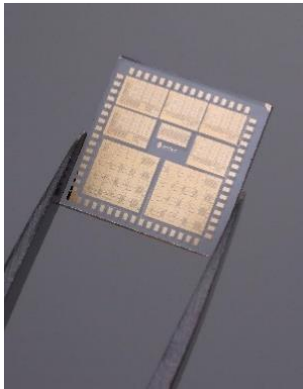


Job title

PhD Position: Organic Integrated Circuit Design for Edge Computing in Healthcare Sensors

Job description



We are seeking a highly motivated candidate to undertake a PhD in the exciting field of **organic integrated circuit (IC) design** for **edge computing applications**. The research will focus on developing mixed-mode analog-digital circuits for processing data from healthcare sensors embedded in wearable skin patches, with data transmission via RF or optical links. The work will involve designing low-power, low-voltage integrated circuits specifically for wearable biomedical devices.

Main tasks and responsibilities

- Design and simulation of mixed-mode analog-digital circuits.
- Development of circuits on flexible and disposable substrates, suitable for edge computing.
- Integration of healthcare sensor technology with RF or optical data transmission.
- Design of low-power, low-voltage integrated circuits for wearable biomedical devices.
- Collaboration with interdisciplinary teams working on healthcare sensors, bio-sensing, and flexible ICs.
- Publication of research findings in high-impact journals and presenting at international conferences.

Requirements

- A Master's degree (or equivalent) in Electrical Engineering, Electronics, Microelectronics, or a related field.
- Knowledge of **analog and digital circuit design**.
- Familiarity with **EDA tools** for circuit design and simulation.
- Interest or background in **flexible electronics, organic materials, and wearable biomedical devices** will be highly regarded.

Institute of Microelectronics of Barcelona IMB-CNM (CSIC)
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- Good programming skills for simulation and data analysis (e.g., Python, Verilog, SPICE).
- Excellent problem-solving skills, creativity, and ability to work independently and within a team.
- Strong communication skills in English (written and verbal).

Description of Group/Project

The ICAS (Integrated Circuits and Systems) group is actively working on emerging printed-organic electronics technologies with diverse goals and requirements. This position focuses on designing flexible and organic integrated circuits (ICs) using additive and hybrid manufacturing technologies to develop electronic systems, with healthcare applications as a proof of concept. The funded project aims to create sustainable electronics with a key feature: the ability to decompose or be easily recycled at the end of its life cycle.

Summary of conditions

- A fully funded 4-year PhD paid position.
- Hands-on experience in cutting-edge technology for edge computing, wearable electronics, and biomedical devices.
- Access to state-of-the-art organic semiconductor fabrication and testing facilities.
- Opportunities for international collaboration and conference participation.
- A dynamic and innovative research environment within a multidisciplinary team.

How to apply

All applications must be sent to Eloi.Ramon@imb-cnm.csic.es. Applications must include: CV and a motivation letter. Reference letters will be appreciated.

Deadline for applications December 1st 2024

Expected start date January-march 2025

- This offer can be found on: <https://www.imb-cnm.csic.es/en/about-center/careers/open-positions>
- More information on IMB-CNM: <https://www.imb-cnm.csic.es/en/>