



Do you have a PhD and an outstanding research track record? We are looking for you!

IMSE-CNM is seeking young and talented researchers interested in applying for an **ERC Starting Grant (StG) 2025**. If you have a PhD obtained between 2 and 7 years prior to the call deadline and a high interest in innovative and cutting-edge research in microelectronic design and applications or a related field, this is your chance to join a leading team and develop high-impact projects.

Requirements:

- Experience and track record: You must demonstrate an outstanding research track record and the ability to carry out high-quality research.
- PhD: Obtained between 2 and 7 years before the call deadline.
- Publications and scientific contributions: Record of relevant and high-quality publications.
- Innovative research project: Present an original project with a solid methodology and a clear focus. The feasibility and potential scientific and/or socioeconomic impact of the project are especially valued.
- Independence and leadership: You must show a high level of independence and leadership ability, including the capacity to lead a research team and the potential to establish yourself as a leader in your field.

Funding:

- Up to 1.5 million euros.

Duration:

- Up to 5 years.

Our mission at IMSE:

Contact high-quality research in micro and nanoelectronics, focusing on the design of integrated circuits and systems. Our work pushes the boundaries of technology, contributing to advancements in various fields through innovative research and development.

Infrastructure available

- **Scientific Instrumentation Laboratories**



We house eight state-of-the-art laboratories dedicated to the characterization of mixed-signal, RF, optoelectronic integrated circuits (ICs), and cybersecurity. Our facilities include:

- Anechoic Chamber: For precise measurements.
- Agilent 93000 Automated Test Equipment (ATE): Ensuring reliable testing of ICs.
- Pulsed Laser: Used for advanced characterization techniques

- **Computational Infrastructure for IC Design**

Our computational resources, supporting IC design through:

- Advanced computer equipment
- Comprehensive CAD tools
- Technology kits for IC design
- A high-performance Supercomputing Cluster

Over the past 20 years, we have prototyped more than 150 ICs, consistently ranking at the top within the EURO PRACTICE community.

Research Areas and Lines

We focus on several cutting-edge research areas, driving innovation in both theoretical and applied aspects of micro and nanoelectronics.

- **Analog Signal Processing**

- Analog and mixed-signal design
- RF design
- Low voltage-low power design
- A/D, D/A, and sigma-delta interfaces
- Analog and mixed-signal design for testability
- Heterogeneous systems and circuits

- **Digital Signal Processing & VLSI Systems**

- Intelligent and sustainable CMOS integrated circuit design
- Embedded digital systems and IoT solutions

- **Sensory & Photonic Vision Systems**
 - Intelligent CMOS vision chips and imagers
 - Heterogeneous sensing-processing systems with 3D integration
 - Dynamic vision sensors
- **Hardware Security**
 - Cybersecurity in hardware
 - Reliability and security in CMOS and emerging technologies
- **Biomedical & Bioinspired Circuits & Systems**
 - Biomedical circuits and systems
 - Wireless, implantable, and wearable biosensor devices
- **Brain-Inspired Neural Networks & Artificial Intelligence**
 - Neuromorphic computing systems
 - Microelectronic systems for intelligent computing
- **Nanoelectronics & Emerging Technologies**
 - Circuits with emerging devices
 - Non-conventional logic design
 - Carbon-based nanoelectronic circuits and systems
 - Memristor-based circuits and systems
- **Integrated Circuits for Space Applications**
 - High-resolution and high-speed ADCs and DACs for space
 - System-on-chip solutions for space instrumentation

Why join IMSE-CNM?

- You will work in a cutting-edge research environment with access to advanced resources and technologies.

- You will collaborate with experts in various fields and have the opportunity to develop your career at a renowned institute.
- Support in preparing and submitting your ERC application.
- If you are interested in this exciting opportunity, please send your CV, a cover letter, and a summary of your research proposal to direccion.ims-cnm@csic.es.

We look forward to hearing from you!