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# PhD Students in RFIC

## JW-01 PhD Students in RFIC

### Contract: Full Time/Fixed Term

Microelectronic Circuits Centre Ireland (MCCI) is an EI / IDA technology centre hosted at Tyndall National Institute. Its mission is to carry out industry-led world-class Analog, Mixed-Signal and RF integrated circuit research and to deliver trained people and IP to industry. MCCI is already collaborating with 35 companies and many of the staff eventually transfer into the thriving microelectronics industry in Ireland. MCCI targets real-life applications with its research and currently has projects in diverse topics such as DNA detection for food safety, next generation optical communications, bio-sensing, imaging for security applications and early cancer detection.

Please look at [www.mcci.ie](http://www.mcci.ie) for more information.

### MCCI has 2 RFIC PhD studentships available.

Future communications systems will rely heavily on continued improvements to circuit and system architectures to enable more flexible deployment across diverse geographies and diverse frequency spectrum. To this end, the circuit and system designer has opportunities to continue to innovate to enable systems that more facily utilize their available resources to enable wireless communication.

In this position, the successful candidates will:

- Investigate compact, area and energy efficient circuit and system architectures for future communications systems in the RF and mm-wave spectrum.
- Design and implement investigated circuits in fine line semiconductor processes for fabrication.
- Build experimental measurements to validate the circuit and architectural innovations that they have designed and had fabricated.
- Document and report on their progress.

### Key Responsibilities

- Carry out innovative research in RF/Mixed-Signal IC Architecture and Design
- Build system-level models for rapid analysis of present systems and rapid prototyping of future systems.
- Translate proposed solution models to physical hardware including custom ASICs as well as PCB level circuits using COTS components.
- Work on collaborative research projects with MCCI industry partners.
- Engage in the dissemination of the results of the research, including publications at leading IEEE conferences and in IEEE journals, in collaboration with members of the MCCI staff.

### Essential Criteria

- Ability to use and learn new CAD tools. Prior experience with Cadence Design Systems, Mentor Graphics, Matlab and Keysight ADS are strongly preferred.
- The successful candidate will be able to innovate to create transformational circuit and system architectures.
- The successful candidate will be well-organized and self-motivated, with good interpersonal

and teamwork skills.

Any queries relating to this position can be forwarded to Ivan O'Connell on email [ivan.oconnell@mcci.ie](mailto:ivan.oconnell@mcci.ie)

An annual student stipend of €18,500 applies for this successful candidate for this position. Yearly University academic fees will be paid by the Tyndall National Institute.

### **Application Instructions**

**Step 1 - Please click [here](#) to download the Application form and indicate the Job Reference JW-01**

**Step 2 - Return the completed Application form, together with your CV, motivation letter and references to [careers@tyndall.ie](mailto:careers@tyndall.ie). Handwritten forms will not be accepted.**

*Postgraduate applicants whose first language is not English must provide evidence of English language proficiency as per UCC regulations*

(<https://www.ucc.ie/en/study/comparison/english/postgraduate/>). Certificates should be valid (usually less than 2 years old) and should be uploaded with their application. In special circumstances the panel may consider a prior degree in English (e.g. Master thesis written in English) as evidence of English language proficiency.

Please note that Garda vetting and/or an international police clearance check may form part of the selection process.

The University, at its discretion, may undertake to make an additional appointment(s) from this competition following the conclusion of the process.

At this time, Tyndall National Institute does not require the assistance of recruitment agencies.

Tyndall National Institute at University College, Cork is an Equal Opportunities Employer.