



Marie Curie Trainee (Early Stage Researcher): Integrated photonics for millimetre wave transmitter and receivers.

JOB DESCRIPTION

Job Title: Marie Curie Trainee – Reference 1472715

Department / Unit: Department of Electronic and Electrical Engineering

Faculty / Division: UCL Engineering

Location: Robert's Building, Torrington Place, WC1E 7JE

Main purpose of the job:

A 3-year EU-funded early stage researcher position is available in the Photonics group as part of the FIWIN5G (www.fiwin5g.eu) European Training Network (ETN). FIWIN5G is a consortium of 10 leading European research institutions that will involve 15 Early Stage Researchers working collaboratively to develop integrated optical fibre technologies to support 5th generation wireless networks. The ETN partner labs cover a broad range of expertise from devices and components through to system and network. The post includes registration to study for a PhD degree with fees (at the UK/EU rate) available from the project.

The research project aims to demonstrate integrated photonic chips as transmitters and receivers for wireless links at 10 Gb/s. This will be done through the development of simple dual laser chips (or single laser locked with an incoming WDM channel for the transmitter) as the source for both the transmitter and the receiver and transmission over 10s of meter at 10 Gb/s. The work will also investigate the potential for integration with fast photodetectors as they could be used as both the emitter and a photonic driven mixer for the receiver. The work will concentrate mostly in the E-Band although the work is likely to extend to the THz range.

Key responsibilities and outcomes:

The post holder will be responsible for conducting research in line with the research project set out in the project proposal (as outline above).

The post holder will be expected, in collaboration with their supervisor, to develop a career development plan of appropriate training. The post holder will also attend the necessary courses and training to acquire the skills necessary for his or her development as an independent researcher.

The post holder will be expected to spend time in a laboratory performing experimental research and developing measurement systems. Similarly a responsibility will be to develop models of the components and subsystems to refine the design decisions.

Internal/External Relationships

The project is conducted in collaboration with III-V lab in Paris, France and will involve a secondment to University of Carlos III for up to 6 months for assessment of the chips within a transmission system in the UC3M test-bed.

Key communications

He or she will also be expected to write regular progress reports, be in charge of technical report preparation for the European commission review processes, and publish regularly in internationally leading peer reviewed journals and conferences.

This job description reflects the present requirements of the post, and as duties and responsibilities change/develop, the job description will be reviewed and be subject to amendment in consultation with the post holder.

The post holder will carry out any other duties as are within the scope, spirit and purpose of the job as requested by the line manager or Head of Department/Division.

The post holder will actively follow UCL policies including Equal Opportunities policies and be expected to give consideration within their role as to how they can actively advance equality of opportunity and good relations between people who share a relevant protected characteristic and people who do not share it.

The post holder will maintain an awareness and observation of Fire and Health & Safety Regulations.

The post holder will carry out their duties in a resource efficient way and actively support UCL's Sustainability policies and objectives within the remit of their role.

PERSON SPECIFICATION

Educational Qualifications

- Essential: MSc or equivalent in Electronic and Electrical engineering, Physics or a related subject.

Experience

Essential

- Strong background in optics, communications, semiconductor physics and/or electronic engineering
- Good oral written and presentation skills.
- Experience of undertaking a research project and setting research targets.
- Excellent IT skills. Word processing such as MS-WORD or LATEX.
- Well-organised, attention to detail and ability to meet deadlines.
- Ability to think logically, create solutions and make informed decisions.

Desirable

- Experience in optical measurement techniques
- Experience with Radio Frequencies measurement techniques

Personal

- Essential: Fluency and clarity in spoken English.
- Essential: Good written English.
- Essential: Ability to work collaboratively as part of a team.

About UCL

Introduction: UCL is one of the UK's premier universities. UCL is ranked joint fifth in the world's top ten universities by the QS World University Rankings (2014). It is a world-class research and teaching institution based in London whose staff and former students have included 19 Nobel Prize winners. Founded in 1826, it was the only university in England at that time which admitted students regardless of race or religion. UCL was also the first to admit women on equal terms with men. Today UCL is a friendly university in which to work and study and it continues to thrive on the diversity and creativity of its community. UCL is in practice a university in its own right, although constitutionally a college within the federal University of London. With an annual turnover around £1 billion, it is financially and managerially independent of the University of London. UCL is the top-rated university in the UK for research strength (Research Excellence Framework 2014), by a measure of average research score multiplied by staff numbers submitted. UCL has 983 professors and more than 6,000 academic and research staff who are dedicated to research and teaching of the highest standards. Our academic community includes 53 Fellows of the Royal Society, 51 Fellows of the British Academy, 15 Fellows of the Royal Academy of Engineering and 117 Fellows of the Academy of Medical Sciences. Nobel Prizes have been awarded to 29 people who are or were students or academics at UCL. The most recent addition, in 2014, is John O'Keefe (Medicine). 11 UCL Honorary Graduates and Fellows have also been awarded Nobel Prizes. 52% of the nearly 36,000-strong student community is engaged in graduate studies, with nearly a third of these graduate students pursuing research degrees. Students from 150 countries study at UCL, making up more than one-third of the student body.

Reporting to: Dr Cyril Renaud, (c.renaud@ucl.ac.uk)

Informal Queries to: Dr Cyril Renaud, (c.renaud@ucl.ac.uk)

Funding: This position is funded by a Marie Curie Initial Training Network initiative. £28,957-£35,952 depending on fellow circumstances.

Eligibility:

- The position is open to candidates of all nationalities.
- Applicants should be in the first 4 years (full-time equivalent) of their research careers, starting at the date of obtaining the degree and not yet have been awarded a doctoral degree. Full-time equivalent research experience is measured from the date when a researcher obtained the degree which would formally entitle him or her to embark on a doctorate, either in the country in which the degree was obtained or in the country in which the researcher is recruited.
 - Additionally, they must not have resided or carried out their main activity (work, studies, etc.) in the UK for more than 12 months in the 3 years immediately prior to the date of recruitment (short stay such as holidays and/or compulsory national service are not taken into account).
- The successful applicant will be asked to meet English-language requirements of UCL.

HOW TO APPLY

Please apply online via the following link:

<http://www.ucl.ac.uk/hr/jobs/>

Job reference: 1472715

Closing date: Monday 31st August 2015