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Scottish registered charity number
SC000278



PhD Studentship:

Electrical and Thermal Co-Development of Active RF Devices

Microwaves and Antenna Engineering Group

<https://microwaves.site.hw.ac.uk>

PhD Studentship

Electrical and Thermal Co-Development of Active Radio-Frequency Devices

Close date: Applications open all year round

Introduction :

We are looking for a highly motivated and versatile student to work on an exciting interdisciplinary PhD project on electromagnetic and thermal co-development of active RF devices involving antennas/arrays, high power amplifiers and matching systems. The ultimate goal of the project is to develop innovative electrical & thermal modelling techniques for integrated antenna and microwave circuit using new materials and manufacturing technology (e.g. 3D printing). The technology represents a paradigm shift in that future active RF devices and thermal management system (e.g. heat sink) could be jointly developed in highly integrated fashion, thereby reducing the mass, size and cost whilst improving the system performance, reliability, efficiency and life expectancy. The technology to be developed will have significant impacts on 5G/6G, massive MIMO and satellite communication systems.

The project will be supervised by an interdisciplinary team at Heriot-Watt University (Edinburgh Campus). The research will take place at the [Microwave and Antenna Engineering Group](#) with close collaborations of our industrial partner: [Celesta UK](#).

About You:

The PhD student will primarily (i) develop novel modelling techniques to jointly predict the thermal and electrical coupled performance of antenna and microwave circuits; (ii) develop novel integration method for RF and thermal management system using new material and manufacturing technology; (iii) design, fabricate and experimentally verify the concepts through measurement campaign. Other activities supporting the research will also be carried out when required. The PhD candidate is expected to develop the skills to lead the research project and interact with colleagues, industrial partners and stakeholders with different technical backgrounds and from different disciplines.

Applications are sought from highly qualified students with first degree (1st class or equivalent) in Electronic Engineering, Physics and similar. A Master's degree or practical working experience in relevant areas may be advantageous.

Funding Details:

The studentship will provide **£15,609 annual stipend plus tuition fees waived** for 3 years. Students from UK, EU and all oversea countries are all eligible to apply.

To apply, please send an email with CV and a cover letter to: Dr Chaoyun Song (C.Song@hw.ac.uk).