**Title:** PhD Studentship in Secure Wireless Agile Networks (SWAN)

**Type of award:** PhD Research Studentships (two available)

**Department:** Electrical and Electronic Engineering

**Scholarship details:** Scholarship covers full PhD tuition fees and a tax-free stipend at the current RCUK rate (£15,285 in 2020/21) subject to eligibility status and confirmation of award.

**Duration:** 4 years

**Eligibility:** Home/EU (UK settled status) with permanent UK residency

**Closing date for applications:** 21st May 2021

**Starting date:** Available now, on or before 13th September 2021 at the latest

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**PhD topic background/description**

PhD applications are sought for immediate start in the Communications Systems & Networks research group at the University of Bristol. The two available studentships will be funded through our EPSRC Prosperity Partnership in the field of Secure Wireless Agile Networks (SWAN). The SWAN partnership includes Toshiba Research Europe Limited (Bristol Research & Innovation Laboratory), Roke Manor Research Limited and Government Communications Headquarters (GCHQ).

Wireless access is essential to the networks that underpin modern life, but many networks which rely on radio frequency (RF) interfaces are especially vulnerable to cyber-attacks or other failures. In this five-year joint research programme, the partnership will identify vulnerabilities in the RF interfaces so techniques can be developed to detect and mitigate against the effects of cyber-attacks.

We are seeking to enrich our team with PhD students addressing the following project topics in applied machine learning (ML) in wireless networks and secure antenna design. These topics would be suitable for candidates with a background in Mathematics, Computer Science (with a focus on algorithms), or Electrical and Electronic Engineering. There is also an option for candidates to propose a topic of their choosing that aligns with the SWAN Research Challenges:

- Cyber Intrusion Detection in IoT Sensor Networks through ML/DL/AI
- RF Fingerprinting for Cyber Intrusion Detection
- Secure PHY Layer Techniques for Wireless Connectivity
• Cascaded Neural Network Design for the Detection of RF Cyber Attacks
• Physical Layer Security Techniques for the Detection of RF Cyber Attacks
• A topic of the candidate’s choice that aligns with the SWAN Research Challenges

Further details of the above topics are available on the SWAN website.

**Candidate requirements**

Open to UK students who have been ordinarily resident in the UK for at least 3 years prior to the start date of their programme. Also open to EU applicants who have no restrictions on how long they can stay in the UK and have been ordinarily resident in the UK for at least 3 years prior to the start of the studentship (with some further constraint regarding residence for education). [https://epsrc.ukri.org/skills/students/help/eligibility/](https://epsrc.ukri.org/skills/students/help/eligibility/).

Candidates must also comply with the entry requirements of the PhD programme they wish to be considered for. Please see the Admissions Statement for Electrical and Electronic Engineering, PhD which is for entry in the 2020/21 academic year.

EU students who start on or after 1st August 2021 who do not have pre-settled or settled status in the UK will be classed as International students.

**Informal enquiries**

Informal enquiries welcomed FAO Professor Mark Beach via swan-programme@bristol.ac.uk.

**Application details**

Applications should be made using our online application system: [https://www.bristol.ac.uk/study/postgraduate/apply/](https://www.bristol.ac.uk/study/postgraduate/apply/).

Applicants should select “PhD in Electrical & Electronic Engineering” as their programme, include a short statement on one of the topics above, and clearly indicate “SWAN Prosperity Partnership Studentship” as their funding source in the Funding section.