



# PhD Scholarship

PhD Scholarships for domestic students are available on

## **Terahertz Backscattering Device for High-Resolution and Single-shot Localisation**

in the Telecommunication (TELE) group of the School of Electrical Engineering and Communication (EET) at UNSW Sydney.

Autonomous sensing and intelligent wireless tracking are becoming indispensable parts of human life. To realise them with a high level of accuracy, this project aims to develop a platform for terahertz (THz) spectrum-to-space mapping to achieve backscattering-based localisation and identification. The project is funded by the Australian Government through the Office of National Intelligence.

We are looking for two enthusiastic PhD students to work on two specific aspects of the project. The first task involves creating an analytical framework for terahertz backscatter sensing, which includes determining location accuracy and developing autonomous networking and data processing. The second task involves developing smart antennas for terahertz frequencies, which will aid spectrum-to-space mapping for localisation and identification purposes. This interdisciplinary research covers fields such as telecommunication engineering and terahertz photonics. The project is ideal for students with a keen interest in terahertz communication (6G), backscattering and localisation, or device development and testing.

The students on this multidisciplinary project will work with TELE group academic staffs, Dr Shaghik Atakaramians (expert in terahertz devices and components) and Dr Deepak Mishra (experts in backscatter communications), and world-renowned experts Prof Aruna Seneviratne and Prof Jinhong Yuan. The students will be part of EET cutting-edge research groups: Terahertz Innovation Group, Cyber-Physical System Group and Wireless Communication Group.

This scholarship is offered to Australian or New Zealand permanent residents or citizens. There are schemes available for exceptional applicants (WAM>75) to apply for stipend top-up (up to \$15,000). Third-year and Fourth year BE UNSW students are highly encouraged to apply.

### **Expected qualifications/skills:**

- **Australian or New Zealand permanent resident or citizen**
- BE with honours, ME or MSc degree in Electrical/Telecommunication Engineering, Optical/Photonics Engineering
- Excellent communication and interpersonal skills
- Keen to collaborate with different stakeholders

For more information, please get in touch with Dr Shaghik Atakaramians at [s.atakaramians@unsw.edu.au](mailto:s.atakaramians@unsw.edu.au) or Dr Deepak Mishra at [d.mishra@unsw.edu.au](mailto:d.mishra@unsw.edu.au).

Expressions of interest should include:

- Degree certificate and/or Academic transcripts
- Curriculum vitae