



Department Communications & Electronics

Radio Frequency, Microwaves & Millimeter waves (RFM²)

Internship title:

Investigation on the power management stage of wirelessly powered devices

One of the main technical challenges for the large-scale deployment of the Internet of Things (IoT) and smart cities applications is the power supply of millions of smart devices. Much research has been done on collecting energy from the environment to minimize the dependency on batteries. Wireless energy harvesting technologies can be a potential solution that 'recycle' the energy sent by existing sources (e.g. TV) that is not utilised by the end users and would be otherwise wasted. Another potential solution is that a dedicated transmitter sends wireless energy towards the smart device, named as wireless power transfer (WPT).

Both scenarios require a receiver capable of collecting energy and converting it to dc (rectenna). A power management stage can be used to make the dc voltage compatible with the energy needs of the application and/or store the collected power. This internship will initially focus on a literature review to identify the main challenges associated with the power management unit (PMU) stage and its integration with the rectification circuitry. It will also include the characterization of appropriate power management units in the lab.

Location:

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