UNIVERSITÀ DI TRENTO
Dipartimento di
Ingegneria Civile, Ambientale e Meccanica

Why more wireless? From mobile phones to healthcare, sensors to driverless cars, space communications – and beyond

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https://www.lboro.ac.uk/schools/meme/staff/william-whittow/

We use wireless communications every day. Even so, very few of us are aware of it or understand how it works. In this talk, the aim is to make the talk accessible to people from different disciplines. The talk will start with a very quick crash course in electromagnetic waves, using videos and animations suitable. Having set the groundwork, Prof. Whittow will give an overview of his 25-year research career, highlighting key aspects of his work that combine various electromagnetic concepts and exploit different materials. This will include describing the effects of holding a mobile phone close to your head while wearing glasses and the enhanced, reliable communication offered by wearable antennas. He will also talk about advances in healthcare sensing applications, Radio Frequency Identification (RFID) tags, 3D printed radiofrequency (RF) devices, optically transparent conducting materials, applications within driverless cars and satellite communications. All of which explain why we all need more wireless in our lives.

Prof. William WHITTOW leads the Wireless Communications Research Group and the Electrical and Robotics Community. His research interests span metasurfaces, frequency selective surfaces (FSS), reconfigurable radiofrequency (RF) devices, dielectric lenses, dielectric characterisation, 3D printed capacitors and filters, millimetre-wave (MMwave) antennas and inkjet printing. He has secured funding in excess of £17million to lead or co-lead major research projects exploring 3D metamaterials for radio frequency, microwave and Terahertz (THz)applications; anisotropic microwave/THz metamaterials for satellite applications;

transparent metasurfaces; 3D antennas; and embedded intelligence for manufacturing. In addition, he has successfully led more than 30 consultancy projects, including winning a BAE Systems Innovation Award for wearable technology. An original member of the EPSRC UK Metamaterials Network (UKMMN), he has published more than 350 peer-reviewed publications, including over 120 journal papers. He has an impressive h-index of 41, reflecting his prolific output and citation impact. In addition, he recently led the publication of the book, Bioelectromagnetics in Healthcare: Advanced sensing and communication applications (IET, 2022). He is an IEEE Distinguished Lecturer in Additively Manufactured RF Devices and, in 2017, he received the Women's Engineering Society's (WES) inaugural Men as Allies Award for outreach. He is the Society's first male Associate Fellow.

When: July 1st, 2026, h. 11:30
Where: Room 2R, Dipartimento di Ingegneria Civile, Ambientale e Meccanica, Via Mesiano 77, Trento
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