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**Professor Timothy O’Farrell** currently holds the Chair in Wireless Communication at the Department of Electronic and Electrical Engineering, University of Sheffield, UK. He specializes in the design of energy efficient wireless networks, direct digitisation in multiband software defined radios, and waveform design for wireless communication systems. To date, he has published over 335 papers and led 26 major research projects on these topics. Professor O'Farrell was Academic Coordinator of the mVCE Green Radio project (2009-12); General Chair of the 5th International Workshop on Next Generation Green Wireless Networks (Next-GWiN 2018); and director of the UK Research Strategy Community Organisation in Communications, Mobile Computing and Networking (CommNet2, 2015-19). He is a chair of the GreenNet workshop at the IEEE International Conference on Communications in Rome 2023. He is director of the UKRI National 6G Radio Systems Facility, a director of the mVCE (mobilevce.com); and a member of the DSIT College of Experts (gov.uk/dsit) advising the UK government on wireless digital infrastructure.



**Talk title:** A Decade of Green Radio and the Path to "Net Zero" in Future Wireless Networks

**Abstarct:** It has been over a decade since several major research projects, such as the UK Green Radio, EU EARTH and GreenTouch projects, initiated large scale investigations into energy efficient wireless networking. Moving forward, the recent Climate Change Conference in Glasgow (COP26) has started to flesh out the details of meeting the ambitious goals of the 2015 Paris (COP22) agreement. This talk reflects on the achievements of energy efficient wireless research to date in mitigating carbon emissions. It explores the industrial challenges ahead with the deployment of fifth generation (5G) wireless technologies and discusses potential opportunities for reducing carbon emissions in the next decade. Major research challenges that still face the wireless community are also described including the development of sixth generation (6G) wireless technologies.