

Sujet thèse / PhD subject 2024

Titre Thèse	Metasurfaces and Smart Antennas for 5G, 6G and THz wireless communications	
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Projet phare (principal)		
Demande thèse labellisée IEMN	Non	
Financement demandé	Contrat Doctoral Etablissement	ULille <input checked="" type="checkbox"/> Centrale Lille <input type="checkbox"/> JUNIA <input type="checkbox"/>
	Région – Autre <input type="checkbox"/> Préciser :	Co financement (Préciser l'origine, demande en cours, acquis ou pas) :
Financement acquis <input type="checkbox"/> Financement partiellement acquis <input type="checkbox"/>	Contrats de Recherche <input type="checkbox"/> Préciser :	Autre <input type="checkbox"/> Préciser :

Abstract: In the framework of an **international collaboration** between **France and UK**, the future PhD candidate will be involved in highly motivating research topics. The main objectives of this project is to explore disruptive approaches in the design and the fabrication of **original metasurfaces** and **smart antennas**. The targetted applications are the **5G, 6G and Terahertz wireless communications**. The supervisors of the future PhD candidate are experts in their fields and have a strong experience in the development of original topologies for the control of electromagnetics waves at millimeter and terahertz frequencies. The PhD candidate will be involved in international collaborative projects like Horizon Europe and between the University of Kent and the University of Lille.

The expected profile of the candidate who will have to face several well identified challenges is a strong background in the field of electromagnetics waves (antennas and also on metasurfaces but it is not mandatory). Any experience in the use of **electromagnetic simulation tools** and the **clean room fabrication** skills will be highly appreciated. **3D printing** techniques will be applied for the fabrication of different kind of **antennas** and **intelligent surfaces** at **terahertz frequencies**.

Steven Gao is a Professor and Chair of RF and Microwave Engineering at the **University of Kent**. He is a Fellow Member of IEEE. He is an expert in the field of **microwave smart antennas**, photonics and wireless communications (5G, 6G and beyond).

(h-index=55 and more than 12 000 citations).

<https://scholar.google.com/citations?user=R8mVLdoAAAAJ&hl=en>

Tahsin Akalin is an Associate Professor. He is an expert in the field of **terahertz** electromagnetic waves, photonics, **plasmonics**, near field microscopy, Planar Goubau Lines, antennas, **metasurfaces** including for **biosensing** applications and wireless communications (5G, 6G and beyond).

(h-index=24 and more than 2 500 citations).

https://scholar.google.fr/citations?user=YFx_xtsAAAAJ&hl=fr&oi=ao