Doctoral (PhD) full time position in “Advanced measurement solutions in the millimeter and sub-THz wave range” at the Department of Electronics and Informatics at the Vrije Universiteit Brussels, Belgium.

Applications for this PhD research are invited under the title “Advanced Measurement solutions in the millimeter and sub-THz wave range”.

A summary of the project is found below:
The project aims at the development of ultra-sensitive measurement techniques in the millimeter wave and sub-THz wave range with state-of-the-art equipment operating up to 750 GHz, in the frequency domain as well as the time domain, in free space as well as in waveguide configurations. The challenge is to design ultra-sensitive sensor configurations comprising automated feedback loops for temperature and humidity compensation techniques of the equipment, environment and the samples under test, as well as drift phenomena. Here to suitable electromagnetic simulation packages will be used. In many application domains the samples under test are subjected to processes parameter changes, such as temperature, pressure, humidity etc. In this project novel compensation techniques and multi-modal sensor solutions will be studied and implemented allowing to go beyond the state-of-the-art and challenge the limits of the actual measurement techniques. In a next stage of the project dielectric and or magnetic parameters will be extracted from the measured signals. In this project we will establish various interdisciplinary collaborations where millimeter wave sensing techniques have almost never been used for process monitoring or optimization or quality control. During the project evolution the emphasis will shift from the design and the measurement technique itself towards the extraction of dielectric material parameters by means of inverse solvers and in collaboration with researchers in other domains the extraction of relevant material parameters of the application domain by means of Multiphysics-based signal interpretation in a few test cases. The department has many interdisciplinary collaborations running. For more information on the research in the (opto)electronics domain, consult the weblink: http://www.etrovub.be/RESEARCH/LAMI/

The project will last four (4) years. The post will preferably start in September 2019 or as soon as the suitable candidate is found.

Skills and personal qualities:
Applicants should have a master’s degree (or equivalent) in Electrical Engineering with specialization in microwave or high-frequency electronics. An independent and well-organized working style, demanding high quality of your own work. Well-developed social skills directed towards working in an interdisciplinary team, excellent interpersonal and communicative skills. Strong motivation to succeed in scientific research, excellent presentation and scientific writing skills, excellent English language skills (verbally and written).

An application must contain the following documents in English: a personal (motivation) letter and curriculum vitae, a copy of degree certificates and associated certificates, a copy of degree projects and any previous publications and proof of English language skills.

The documents should be sent to jstiens@etrovub.be

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