

PhD. position: “Integrated antennas for sub-millimeter wave imaging”

Delft University of Technology

Delft University of Technology is a multifaceted institution offering education and carrying out research within the technical sciences at an internationally recognized level. Education, research and designs are strongly oriented towards applicability. TU Delft develops technologies for future generations, focusing on sustainability, safety and economic vitality. At TU Delft we work in an environment where technical sciences and society converge. TU Delft comprises 8 faculties, unique laboratories, research institutes and schools

Faculty of Electrical Engineering, Mathematics and Computer Science

The Faculty of Electrical Engineering, Mathematics and Computer Science features a high level of ambition and synergy. It is a strong international party in the field of telecommunication, software technology, micro-electronics and computer engineering, electrical energy technology, multimedia and applied mathematics. With a complement of 1,800 students (BSc and MSc) and 750 employees including almost 300 post-docs, the faculty is a strong and pleasant organization.

DIMES

The DIMES research institute at TU Delft has matured into a large central facility that supports advanced research and education in nanoelectronics and microsystems, with an emphasis on RF/microwave, 3-D processing, sensors/MEMS and large-area electronics. The extensive high frequency characterization laboratories in DIMES are the result of numerous long-term projects sponsored by leading semiconductor manufacturers and foundries, including: Philips, NXP Semiconductors, Infineon, Skyworks, Texas Instruments and IBM Microelectronics.

Ph.D. Project and Job Description

The research institute DIMES has recently started a project on (sub)-millimeter wave imaging for bad weather vision, logistic, security and medical applications. The emphasis lies on the realization of monolithically integrated imaging systems by combining state-of-the-art technologies for device fabrication, circuit design, and packaging. A key component of such an imaging system is the antenna array used for focusing the electromagnetic wave and scanning the environment. The antenna array should offer sufficiently high resolution, and should be capable of directing the electromagnetic beam along a wide range of angles. This requires precise phase control of the signal delivered to individual antenna elements.

The PhD student's research will focus on the design and characterization of integrated phased array antennas and sensing devices at microwave frequencies. The antennas should provide high angular & spatial resolution with a reduced hardware complexity. Key issues are; design of integration compatible smart antennas with related signal distribution & control. Demonstrators have to be built as part of complete imaging systems, in conjunction with other participating researchers.

Requirements

Those applying should be university graduates with an MSc degree in electrical engineering. She/he should have an affinity with, and knowledge of, microwave engineering, electromagnetic theory, and antenna design. The candidate should be a creative scientist and needs to have developed social and communicational skills, while being able to cooperate well with the project's participants.

Information and application

For more information on this position please contact Prof. Alexander Yarovoy, email: a.yarovoy@ewi.tudelft.nl. To apply please send by email a detailed CV together with a letter of motivation, a list of publications and a summary of your MSc thesis. Application deadline is December 15, 2008