

Post-doctoral position

« Analysis, Design and Optimization of Lens Antennas at Millimeter Waves »

(IETR, Rennes, France)

Context and objectives

The Institute of Electronics and Telecommunications of Rennes (IETR), Rennes, France has a strong background in the design of lens antennas at millimeter waves, and especially regarding the modelling and optimization of single- and dual-material arbitrarily-shaped integrated lens antennas for various ICT applications ranging from Ka-band to W-band.

The aim of this post-doctoral research project is twofold:

1. To contribute to the implementation of powerful Computer-Aided-Design (CAD) tools for the synthesis and optimization of shaped lens antennas (arbitrarily-shaped devices and/or shaped bodies of revolution). Various numerical methods of analysis will be considered: high-frequency techniques, modal decomposition methods, full-wave approaches (mainly in the time domain). The optimization algorithms will be based on global optimization techniques, like genetic algorithms or particle swarm concepts.
2. To design innovative lens antennas at millimetre and sub-millimetre waves for high-speed wireless communication systems, high-resolution radars and advanced measurement techniques.

The applicant must have a strong background in (at least) one the following areas: design of antennas at millimeter waves, focusing systems, reflector antennas, lens antennas, quasi-optics, numerical modelling, electromagnetic theory, optimization. A strong knowledge of commercial electromagnetic softwares will be strongly appreciated.

Duration: from 12 to 18 months.

Starting date: Open from November 1, 2007.

Salary (brut): roughly 2300 Euros / month.

Laboratory (www.ietr.org):

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