

## **Post-doctoral position**

### **« Design of beam forming millimeter wave antennas for automotive radars at 77 GHz »**

**(IETR, Rennes, France)**

#### **Context and objectives**

This proposal deals with the design of millimeter wave beam forming antennas to be integrated in the front-end of next-generation automotive radars at 77 GHz. The work to be carried out is in the framework of a concept project supervised by the French Competitiveness Cluster “Automobile Haut de Gamme”.

The aim of this research project is to propose, design and optimize innovative beamforming antenna configurations for short range and long range radars operating around 77 GHz. The specifications at the system and antenna levels will be provided by the industrial partners of the consortium. Among the potential antenna technologies available either currently or in the near-future, the first part of the work will consist in identifying a few antenna technologies fulfilling the specifications. Then, the identified antenna configurations will be analyzed in depth and optimized. Finally, the proposed concepts will be validated experimentally at 77 GHz.

The applicant must have a strong background in (at least) one of the following areas: design of antennas at millimeter waves, passive antennas, active antennas, reconfigurable antennas, beam forming antennas. A strong knowledge of commercial electromagnetic softwares will be strongly appreciated.

**Duration:** from 12 to 24 months

**Starting date:** Open from October 1, 2007

**Salary (brut):** roughly 2300 Euros / month

#### **Laboratory ([www.ietr.org](http://www.ietr.org)):**

University of Rennes 1  
IETR (Institute of Electronics and Telecommunications, Rennes), UMR CNRS 6164  
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