

## **Research Fellowship in Antenna Measurement**

### **Directorate of Technical and Quality Management**

### **ESTEC, Noordwijk, The Netherlands**

### **ESA/RF-ESTEC(2015)006**

#### **Overview of the Division's mission**

The Electromagnetics and Space Environment Division provides project support and undertakes R&D activities. This includes: antennas and sensor systems up to the sub-millimetre waves; wave propagation and interaction; electromagnetic and RF compatibility (EMC/RFC); electrostatic charge/discharge (ESD); magnetic cleanliness and space environments (radiation, plasmas, etc.) and their effects. The Division also has competencies and facilities for antenna and EMC testing and material RF characterisation.

#### **Overview of the field of research proposed**

Within the Electromagnetics and Space Environment Division, the domains covered by the Antenna and (Sub)-Millimetre Wave Section include stand-alone radiators, reflector antennas and array (active or passive) antennas. The section addresses system aspects as well as interference effects between antennas and the spacecraft structure, covering the range 400 MHz to 1 THz of the frequency spectrum. The section provides technical support to ESA projects for Earth Observation, Telecommunications, Navigation and Science, including “in-house” design and trade-offs for technology developments. Furthermore, the section supports all antenna development stages from the early RF design and analyses up to the final measurements. When adequate, the measurements are performed in the ESTEC antenna test facilities that are managed by the section.

In the framework of this Research Fellow Opportunity, the following field of investigation has been selected:

#### **Near Field scanning**

The objective of the stay is to improve and enhance the ESTEC Near Field scanner capabilities. The opportunity will deal with the further validation of the HERTZ facility between 400 MHz to 50 GHz. Furthermore, the commissioning of the submillimetre wave scanners and all the related validation activities will be part of this stay. This will be directly applicable to project support for upcoming ESA missions, like MTG, EXOMARS and JUICE. The researchs are expected as well to strengthen the links with ESA antenna external facility who is also working on complementary topics. Actual measurements will have to be performed.

This activity will give the opportunity to enhance the practical and theoretical know how of the research fellow in state of the Art Near Field measurement techniques and processing.

### **Who can apply**

The programme is open to suitably qualified women and men. Preference will be given to applications submitted by candidates within five years of receiving their PhD.

The Research Fellow Programme is open to nationals of the following states: Austria, Belgium, the Czech Republic, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Norway, Poland, Portugal, Romania, Spain, Sweden, Switzerland, and the UK, or Canada as a Cooperating State, Bulgaria, Estonia, Hungary, Latvia, Slovakia and Slovenia as European Cooperating States (ECS).

### **Required qualifications**

Applicants must have recently completed their PhD studies in a relevant physics or engineering domain.

Applicants should have good analytical and communication skills and should be able to work in a multi-cultural environment in an autonomous manner.

Applicants must be fluent in English and/or French, the working languages of the Agency. A good proficiency in English is required.

### **How to Apply**

Please fill in the [online](#) application form attaching to it, **in one document only**, your CV, your motivation letter and your research proposal.

Candidates must also arrange for up to **three letters of reference** to be sent by e-mail, before the deadline, to **temp.htr@esa.int**. The letters must be sent by the referees themselves. The candidate's name must be mentioned in the subject of the email.

Applications satisfying the general conditions for eligibility, to be submitted **by 6 May 2015**, will be evaluated and successful applicants will be invited for an interview.

Interested candidates are highly encouraged to visit the ESA website: [www.esa.int](http://www.esa.int).