

Research Fellowship in Microwave Interferometric Radiometry

Directorate of Technical and Quality Management

ESTEC, Noordwijk, The Netherlands

ESA/RF-ESTEC(2015)015

Overview of the Division's mission

The RF Systems, Payload and Technology Division is part of Electrical Engineering Department and of Technical and Quality and Management Directorate.

The RF Systems, Payload and Technology Division is responsible for space instrumentation and end to end communication systems, subsystems, equipment and technologies which cover the following domains:

- Communication systems and subsystems design and validation;
- Commercial ground and user segment products for navigation, telecommunications and remote sensing;
- Systems for TT&C communication, navigation, remote sensing and scientific applications;
- Satellite payloads (e.g. repeaters for telecommunications or navigation instruments, earth remote sensing instruments for scientific applications);
- Microwave and millimetre wave equipment and technologies;
- Complex on-board payloads for communications and remote sensing, and processing core of such systems, including optically based implementations;
- Systems testing for performance evaluation or validation;
- Laboratories to test/proof concepts soundness and validation.

The Division consists of five sections and the divisional laboratory unit. They are:

- 1) Telecommunication - TT&C systems and techniques
- 2) Radio Frequency Equipment and Technology Section
- 3) Payload engineering
- 4) Radio navigation systems and techniques
- 5) Commercial Ground and User Segment Products
- 6) Laboratory

Overview of the field of research proposed

New applications of microwave interferometry: Following the consolidation of aperture synthesis as a valid remote sensing technique with the SMOS mission, this task aims at studying new applications of this technique. The target prospective investigation is Earth, or more general, planetary, crust sounding. The study shall aim at identifying suitable frequency bands, geometries and satellite mission scenarios where sub-surface imaging could be achieved using aperture synthesis. High level instrument concepts are to be presented. Other applications are to be explored if considered worth, including atmospheric observations.

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 one of the following areas: microwaves, antennas, electromagnetic theory, electromagnetic fields, electromagnetic wave propagation, propagation of electromagnetic waves in media, microwave interferometric radiometry, microwave interferometry, passive remote sensing at microwave frequencies.

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 the **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.