Research Fellowship in Innovative Optical Payloads

Directorate of Technical and Quality Management

ESTEC, Noordwijk, The Netherlands

ESA/RF-ESTEC(2015)016

Overview of the Division's mission

To develop components, technologies and processes for optical systems for Space applications.

Overview of the field of research proposed

The nanosatellite and microsatellite segments of the satellite launch industry have been growing rapidly in recent years. CubeSat platforms, originally developed for educational purposes, can be used for low cost missions based on a constellation of miniaturized satellites.

Also the recent advances in the manufacturing of complex optical elements (e.g. freeform mirrors, sub-wavelength and freeform gratings, complex interference filters directly deposited on the focal plane, additive manufacturing components etc) is enabling the production of very compact optical payloads that can be integrated on a miniaturized platform.

The aim of the activity proposed is to investigate the design of innovative optical payloads for small satellites as for instance CubeSats. The main purpose of these miniaturized optical payloads is to work in synergy with other missions like Sentinel 2, Sentinel 3 or Metop providing complementary data or enabling new final products (e.g. providing additional spectral bands, or lower time revisit based on the platform agility or constellation approach).

As part of the research the candidate should:

- Identify potential applications of a microsatellite based optical mission and synergies with current and future missions.
- Define the requirements for optical payloads based on the identified applications
- Design the optical payload/s
- Provide an assessment of the final data products

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 Applied Physics, with a background in Optical Engineering.

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.