



ING Job Description

Grade E

Optical Engineer

Post reference: LT06 Last revision: 2022-07-04 Version N° 1.0

Department / Group

Astronomy

Hierarchical Dependency

Head of Astronomy

Functional Dependency

If different

N/A

PURPOSE

Main purpose for the post

- To provide the top level of expertise in all aspects of optics within ING, such as optical design, analysis, and managing the manufacturing or the external connections when required.
- To be responsible for the maintenance of optical equipment and components at ING, including faults, quality control, alignment, and cleaning.
- To provide input on possible improvements, development pathways and new technologies for astronomical applications.

Associated duties and responsibilities

- Managing the optical areas of development and enhancement projects. Taking responsibility for the procurement of optical elements, ranging from single components to complete opto-mechanical systems, ensuring adequate manufacturability and function.
- Using Zemax, or any other ray-tracing software, in order to detect and correct faults, to design, to model and analyse new and existing optical systems. Taking the lead in optical design, providing optical/opto-mechanical input regarding enhancement and development projects.
- Maintaining and inspecting optical components for telescopes and instruments, to ensure their optimal performance. Performing analyses and providing advice about possible improvements. Organising major instrument overhauls in collaboration with other instrument and engineering specialists.
- Conducting experiments and carrying out measurements to identify potential problems in optical systems and proposing solutions. Providing expert optical support, such as ray tracing for correcting optics-related faults.
- Taking responsibility for the equipment in the optics laboratory ensuring that they satisfy all the requirements to support ING's needs. Maintaining and using specialist equipment, e.g., spectrophotometer and reflectometer. Ensuring that the lab is always clean and well stocked to perform a variety of opto-mechanical services. Ensuring that a safe system of work is in place and keeping abreast of current safety legislation.

- Maintaining technical documentation related to ING optical systems.
- Participating in project reviews.
- Producing scientific papers on optical developments at ING and presenting results at conferences.
- Exploring technology advances and new development pathways in optical and opto-mechanical areas.

Appointment

Full time

Mobility

(To non-ING sites) Infrequently, to project meetings and to scientific/technical conferences.

Remarks

RESPONSIBILITIES

People management

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Annual budget management

~€0k

Results / Other Responsibilities

REQUIREMENTS

Education

Minimum

Preferred

University degree in optical engineering, physics or related field.

PhD degree in optical engineering, physics or related field.

Experience

Minimum

Preferred

4 years in an instrumentation or operational environment.

- 4 years in an astronomical observatory.
- Participation in projects for development of optical systems.

Specialist competencies

Competencies and levels described in ING's Competencies Dictionary at

<https://titania.ing.iac.es:8444/display/ING/Description+of+ING+Competencies>

Technical disciplines

Level

Optical design; ray-tracing software

Advanced

Opto-mechanical precision measurements

Intermediate

Optical systems AIV

Advanced

Optical fibre technology

Advanced

Project management, monitoring of optics industrial processes

Intermediate

Transversal competencies

Personal Competencies

Basic

Intermediate

Advanced

Expert

Analytical

X

Decision making		X		
Initiative, proactivity			X	
Flexibility, adaptability		X		
Personal management			X	
Relational Competencies				
Effective leadership		X		
Team work		X		
Effective communication			X	
Functional Competencies				
Strategic thinking		X		
Planning, organisation			X	
Resource optimisation			X	
Technical Competencies				
Written communication			X	
Information technology			X	
Foreign languages			X	
Health and safety		X		
Multidisciplinary		X		