The European Organisation for Astronomical Research in the Southern Hemisphere (ESO) is the foremost intergovernmental astronomy organisation in Europe and the world’s most productive ground-based astronomical observatory. ESO carries out an ambitious programme focused on the design, construction and operation of powerful ground-based observing facilities enabling astronomers to make important scientific discoveries.

ESO operates three unique world-class observing sites in northern Chile: La Silla, Paranal and Chajnantor (home to ALMA and APEX), and the ESO Headquarters are located in Garching, near Munich, Germany.

At Paranal, ESO operates the Very Large Telescope, the world’s most advanced visible-light astronomical observatory. ESO is a major partner in ALMA, the largest astronomical project in existence. And on Cerro Armazones, ESO is building the 39-metre Extremely Large Telescope (ELT), which will become “the world’s biggest eye on the sky” and whose operations will be fully integrated into the Paranal Observatory.

Due to the need for additional resources associated with the ELT programme, for its Mechanical Engineering Department, within the Directorate of Engineering at its Headquarters in Garching, near Munich, Germany, ESO is advertising a Junior position of

**Opto-Mechanical Engineer**

As a member of the Directorate of Engineering the jobholder will work in the ESO matrix structure serving various projects and fulfilling tasks received from Project Managers. S/he will be assigned to the Instruments and Cryogenic Systems Group in the Mechanical Engineering Department and support projects like the ELT Instrumentation construction in the field of Mechanical Engineering, cryo vacuum technologies and AIV. This includes involvement in many phases of projects like follow-up of procurement contracts, manufacturing, integration, performance verification, acceptance and commissioning activities.

The Mechanical Engineer will be involved in collaborations with mainly European Institutes and/or consortia for the design and construction of Instruments. Visits to contractors’ premises and extended stays or temporary transfer to ESO's observatories in Chile are required to support project follow-up, installation and commissioning activities.

**Main Duties and Responsibilities:**

- Support the ELT instrumentation infrastructure project in particular in defining interfaces and in design, testing and qualification of specific key technologies e.g. low vibration vacuum and cryogenic systems.
- Testing and qualification of ELT standard cryo-vacuum components, in particular 4-Kelvin cryocooler systems and Liquid Nitrogen cooling systems.
- Support the ELT cryogenic supply and infrastructure project in system design, sub-system design and testing, specifications and statement of work definition, contract follow-up and installation in the ELT.
- Support the ELT instrumentation program with follow up instrument construction and developments.
- Support Instrument projects for mechanical design, opto-mechanical engineering, cryo-vacuum technologies and AIV.
- CAD and opto-mechanical design of astronomical instruments, subunits, mechanisms, optical components, detector systems for cryogenic applications.
- Support design and testing of optical components for HCI technologies, explicitly applicable in the thermal infrared.
• Support integration and commissioning of instruments including on-site installations at observatories.
• Willingness to work for installations at ESO Observatories over longer periods of several weeks respectively months.

Reports to:

Head of the Instruments and Cryogenic Systems Group of the Mechanical Engineering Department.

Key Competences and Experience:

Essential Competences and Experience

• The candidate shall have experience with design and understanding of astronomical instrumentation, in particular with their operation at cryogenic temperatures required for infrared / thermal-infrared applications
• S/He shall have good understanding of optical systems and optical alignment strategies using also invisible IR light sources like CO2 lasers
• The command of a state-of-the-art 3D CAD system is a key requirement. Command of the ESO standards Inventor and Vault is an asset.
• S/He shall be experienced to perform basic structural and thermal FEA.
• Excellent communication skills with a strong sense for team spirit are required to work in an international team environment. The ability to analyse and resolve problems with project managers, technical specialists and other stakeholders are also essential;
• The candidate shall be able to work in parallel for different projects, with different teams and within a matrix structure;
• 2-3 years of specific work experience

Desirable Competences and Experience, which are not mandatory, but considered an asset

• Practical experience in the process of design, drafting, documentation, manufacturing, assembly, integration, testing as well as verification, on-site installation and commissioning of astronomical Instruments.
• The command of a standard Instrument and detector control software
• Ability to acquire new skills, develop system understanding, and capabilities to follow-up and review VLT/ELT instrument developments from external consortia.
• Ability to work and fluently communicate within an international organization, and within large international consortia.

Qualifications:

Master Degree in Mechanical Engineering, Aerospace Engineering or similar Engineering disciplines.
Remuneration and Contract:

We offer an attractive remuneration package including a competitive salary (tax free), comprehensive pension scheme and medical, educational and other social benefits, as well as financial help in relocating your family and the possibility to place your child/children in day care.

The contract is for a fixed term duration of three years, and is subject to successful completion of the probation period. There is a possibility of extension(s) subject to individual performance and organisational requirements, in particular for the ELT Programme, and as defined in the applicable policies and staff rules and regulations. For any further information, please visit ESO’s conditions of employment.

Duty Station:

The position is based in Garching, Germany. Frequent traveling to contractor sites in Europe and to construction sites in Chile is required. The jobholder will be required to work at high altitudes above 3000m. Temporary transfer or/and long missions to Chile might be needed.

Career Path: V

Application:

If you are interested in working in areas of frontline science and technology and in a stimulating international environment, please visit http://www.eso.org for further details.

Applicants are invited to apply online at http://jobs.eso.org/. Applications must be completed in English and should include a motivation letter and CV. Within your CV, please provide the names and contact details of three persons familiar with your work and willing to provide a recommendation letter upon request. Referees will not be contacted without your prior consent.

Closing date for applications is 29 July 2019.

Interviews are expected to start soon after this date.

No nationality is in principle excluded, however, recruitment preference will be given to nationals of Australia, Austria, Belgium, the Czech Republic, Denmark, Finland, France, Germany, Ireland, Italy, the Netherlands, Poland, Portugal, Spain, Sweden, Switzerland, the United Kingdom and Chile irrespective of gender, age, disability, sexual orientation, race or religion.