Vacuum Technician (TE-VSC-BVO-2025-40-GRAE)

Geneva, Switzerland

Full-time

Job Description

Are you ready to work on one of the most advanced vacuum systems on the planet? With 130 km of cutting-edge vacuum vessels, CERN operates one of the largest and most complex vacuum systems ever built. If you're driven by the challenge of pushing the boundaries of science and technology, this is your chance to make your mark.

Within your role, you will join the Vacuum, Surfaces, and Coatings (VSC) Group, which is at the forefront of CERN's pioneering technological research, overseeing all high and ultra-high vacuum systems across the CERN accelerators. From design to operation, surface engineering to acceptance tests, we handle it all. The Beam Vacuum Operation section (BVO) ensures the flawless operation and continuous upgrade of the vacuum equipment critical to the Large Hadron Collider (LHC), the most powerful particle accelerator ever built. This includes the systems that enable hadron beams to circulate through superconducting magnets and detectors.

Your responsibilities

As a member of a team responsible for the vacuum systems of the Large Hadron Collider, your role will involve participating in acceptance tests of vacuum equipment.

These activities will take place within dedicated workshops, laboratories, and the LHC tunnel area. You will collaborate closely with students, trainees, experienced technicians, and engineers in a highly motivating and international environment.

Vacuum measurements:

- Conduct precise measurements of ultra-high-vacuum systems.
- Utilize mass spectrometers to identify and quantify residual gases in vacuum systems, with a focus on detecting organic contaminants.

Assembly and Leak Detection:

- Perform mechanical assembly of vacuum components.
- Conduct helium leak detection of sub-assemblies and fully assembled accelerator vacuum equipment.

Documentation and Procurement:

- Create and maintain comprehensive documentation for vacuum equipment.
- Assist in logistics and oversee the procurement process for vacuum components.

Participate in interventions within the LHC tunnel:

- Mechanical installation.
- Helium leak detection.
- In-situ heating procedures.
- Activation of non-evaporable getter coatings.

Your profile

- Proven experience in precision mechanical assembly.

Preferred Skills

Technical:

- Operating and interpreting readings from various UHV vacuum gauges.
- Assembling UHV-compatible components and systems.
- Operating helium leak detectors and analysing results.
- Generating and maintaining technical documentation.
- Performing on-site vacuum system interventions, including mechanical installation and in-situ testing.

Analytical:

- Interpreting mass spectra to identify common residual gases and organic contaminants.

Documentation and Management:

- Managing basic inventory.
- Understanding procurement procedures.

Language Requirements:

- Fluency in English, with the willingness to learn French at CERN.

Eligibility criteria:

- You are a national of a CERN Member or Associate Member State.
- **By the application deadline,** you have a **maximum of two years of professional experience since graduation** in a technical field **and your highest educational qualification is a general secondary education diploma**.
- You have never had a CERN fellow or graduate contract before.

- Applicants with a Bachelor's, Master's or PhD degree are not eligible.

Additional information

Job closing date: **26.03.2025 at 23:59 (midnight) CET.**

Contract duration: 24 months, with a possible extension up to 36 months maximum.

Working hours: 40 hours per week

Target start date: 01-June-2025

This position involves:

- Work in Radiation Areas.
- Interventions in underground installations.
- A valid driving licence.

Job reference: TE-VSC-BVO-2025-40-GRAE

Field of work: Mechanical Engineering

Application link: **https://smrtr.io/q9r_K**

What we offer

- A monthly stipend of **4624 Swiss Francs (net of tax)**.
- Coverage by CERN's comprehensive **health scheme** (for yourself, your spouse and children), and membership of the CERN **Pension Fund**.
- Depending on your individual circumstances: installation grant; family, child and infant allowances; payment of travel expenses at the beginning and end of contract.
- **30 days of paid leave per year**.
- On-the-job and formal training at CERN as well as in-house language courses for English and/or French.

About us

At CERN, the European Organization for Nuclear Research, physicists and engineers are probing the fundamental structure of the universe. Using the world's largest and most complex scientific instruments, they study the basic constituents of matter - fundamental particles that are made to collide together at close to the speed of light. The process gives

physicists clues about how particles interact, and provides insights into the fundamental laws of nature. Find out more on http://home.cern.

Diversity has been an integral part of CERN's mission since its foundation and is an established value of the Organization. Employing a diverse workforce is central to our success.