

Dicio Conflatio

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Vacuum Engineer – Fusion Prototype Full-time or Long-term Mission

About Dicio Conflatio

Dicio Conflatio is an early-stage deeptech company developing innovative concepts in advanced energy and plasma-based systems. The company is currently working on the design and construction of a very early-stage linear fusion prototype, with a strong focus on experimental validation, measurable data, and progressive scaling of the installation.

The working environment is intentionally agile, interdisciplinary, and hands-on, with close interaction between scientific, engineering, and technical profiles.

Main Mission

Lead the design, implementation, and commissioning of the vacuum system for the fusion prototype, including the associated cryogenic equipment and utilities where required. The position is focused on translating high-level physical requirements into a robust, buildable, and evolutive vacuum infrastructure, from early conceptual design through procurement and assembly. Particular attention will be given to the integration and safe use of liquid-nitrogen systems for cooling, cold traps, thermal management, or other experimental needs.

Key Responsibilities

- Act as lead engineer for the vacuum system of the experimental setup.
- Translate scientific requirements (characteristic dimensions, target gas density, operating regimes) into a complete vacuum chamber and system design.
- Design the vacuum chamber layout using CAD, including ports, windows, internal components, and mechanical interfaces.
- Design and implement the gas injection system, likely involving multiple injection points (central region and mirror sections).
- Specify, select, and order all vacuum-related and associated cryogenic components (chambers, flanges, pumps, gauges, valves, feedthroughs, insulated lines, dewars, cold traps, and instrumentation).
- Design and integrate simple cryogenic systems, particularly liquid-nitrogen circuits,

including storage and transfer arrangements, thermal insulation, venting, pressure relief, instrumentation, and interfaces with the vacuum installation.

- Supervise or directly participate in the assembly and integration of the vacuum and cryogenic systems.
- Establish safe operating procedures for liquid nitrogen, addressing oxygen-deficiency hazards, cold burns, pressure build-up, ventilation, handling, and emergency response.
- Coordinate with the scientific team and other engineers during system definition and iteration.
- Contribute to installation planning, commissioning, and early experimental operation.
- Document design choices, procedures, and lessons learned.

Required Skills and Experience

- Proven hands-on experience in the design of large or complex vacuum systems.
- Ability to independently design a complete vacuum chamber and pumping architecture from scientific specifications.
- Excellent CAD skills (mandatory).
- Strong knowledge of vacuum technologies (HV/UHV, materials, seals, pumping strategies, leak detection), together with practical familiarity with thermal and cryogenic constraints.
- Experience managing procurement and technical follow-up with suppliers.
- Practical mindset with experience supervising or performing mechanical assembly.

Additional / Highly Valued Experience

- Experience with vacuum systems for plasma or fusion devices.
- High-voltage engineering (desirable but not mandatory; may be complemented by a dedicated specialist).
- Experience with gas handling and injection systems.
- Experience designing, operating, or maintaining cryogenic equipment, particularly liquid-nitrogen systems, is highly valued. Knowledge of relevant safety practices, oxygen-deficiency monitoring, and pressure-relief requirements would be an advantage.
- Familiarity with experimental physics environments and diagnostics.

Team Context and Project Timing

The project is currently at an early design stage. While some system outlines may emerge in

the coming months, the exact timeline remains flexible. We are therefore seeking to identify and engage the right candidate early, even if full technical workload ramps up progressively. The ability to contribute to conceptual design, anticipation, and technical decision-making in an evolving context is essential.

Profile

- Engineer or physicist-engineer with substantial laboratory experience.
- Comfortable operating with partial specifications and evolving requirements.
- Autonomous, rigorous, and strongly hands-on.
- Interest in joining a high-impact project at a very early stage.

Contract Type

Full-time position, long-term contract, or long-duration consulting mission.
Start date flexible.

Compensation depending on profile and experience (indicative)

Senior or junior profile (extensive hands-on experience with complex vacuum systems, autonomy on design and integration)

€60k – €85k+ gross annual full-time equivalent

Final compensation will depend on experience level, responsibilities, contract type (employee or consulting), and level of involvement in the project.

How to Apply

Please send a CV and a brief description of relevant experience to:
catherine.pepin@dicioconflatio.com