



## Materials, Processes, and Technologies Engineer – Space – Permanent Position / CDI

### **\*\*PRESENTATION\*\***

ION-X is a start-up aiming to develop and commercialize a groundbreaking space propulsion technology for nano and micro-satellites.

The result of over 10 years of development within a leading-edge laboratory in this field, our technology offers exceptional performance and promises significant commercial opportunities. Our team of about twenty members has already conducted numerous tests on prototypes in our laboratory, confirming the disruptive potential of our technology and securing strong expressions of interest from European partners.

A first demonstration of our engine in orbit is in progress since early 2025 and more to come in the next months.

### **\*\*DESCRIPTION\*\***

We are looking for a **motivated and talented Materials, Processes, and Technologies Engineer** to play a key role in selecting, qualifying, and optimizing materials and manufacturing processes for our **disruptive ionic propulsion thruster**.

Joining a **dynamic and innovative** environment, you will collaborate closely with the **ION-X design teams** (mechanical, thermal, electronic, chemistry) based in Palaiseau. (In 2025, ION-X will relocate closer to Paris, remaining in the southern Paris area.)

**Reporting to our Chief Manufacturing Officer**, you will ensure that materials meet the strict environmental and mechanical constraints of space missions, such as extreme temperatures, radiation exposure, vacuum conditions, and mechanical stresses.

### **\*\*RESPONSIBILITIES\*\***

#### **Materials, Manufacturing & Innovation**

- Lead **material and process trade-off studies** to optimize structural, thermal, and radiation performance for space applications.
- Drive **innovation in materials, manufacturing techniques, and advanced coatings** to enhance performance and reliability.
- Define, validate, and optimize **critical manufacturing processes** such as machining, welding, coatings, brazing, and additive manufacturing.
- Implement **process control methodologies** to ensure repeatability and reliability from prototyping to serial production.
- Support **Design-for-Manufacturing (DFM)** principles to align engineering with production.

#### **Compliance, Testing & Reliability**

- Ensure **materials and processes comply** with space standards (ECSS, NASA, ASTM ...).
- Oversee **material selection, evaluation, validation, and qualification** following space industry guidelines (such as ECSS-Q-ST-70C and equivalents).
- Develop and execute **test protocols for thermal cycling, vacuum exposure, radiation resistance, and contamination control**.
- Conduct **failure analysis (SEM, FEA)** and **root cause investigations (RCA)** to improve system dependability.
- Apply **FMECA methodologies** to mitigate risks and enhance reliability.
- Develop **corrective actions and process refinements** to ensure product durability and mission success.

### Supply Chain, Documentation & Traceability

- Lead **supplier evaluation, qualification, and First Article Inspection (FAI)** to ensure compliance with quality management systems (ECSS & EN9100).
- Monitor **manufacturing deviations, corrective actions, and process control** for both in-house and supplier production.
- Ensure **full traceability** of materials and processes throughout the supply chain.
- Maintain a **structured material database** consolidating properties, test results, and supplier certifications.
- Support **internal and external audits**, ensuring compliance with documentation standards (ECSS-M-ST-40).

### **\*\*PROFILE REQUIRED\*\***

You hold a **Master's degree (Bac +5) in mechanical design or a related field**, with a **minimum 5 to 8 years of professional experience** in materials selection, processes implementation for **space** systems. You have:

- Strong knowledge of material science (metals, polymers, composites, ceramics).
- Expertise in mechanical and electrical technologies and manufacturing processes.
- Experience with testing and qualification for harsh space environments.
- Familiarity with aerospace and space standards (ECSS, NASA, ISO).
- Ability to conduct failure analysis and implement process improvements.
- Experience with CAD software, simulation tools, and lab testing equipment.
- Strong problem-solving skills and cross-functional collaboration.

You are autonomous, detail-oriented, pragmatic, and proactive with a problem-solving mindset. You thrive in team environments and appreciate the opportunity to grow within a fast-paced and innovative environment.

### **\*\*ROLE HIGHLIGHTS\*\***

- Unique opportunity to contribute to the development of one of the most efficient space propulsion systems ever launched into orbit.
- Be part of an exciting entrepreneurial journey within a passionate team, based in one of the most advanced research hubs in France.
- A constant challenge with daily opportunities to learn, grow, and develop your skills.

**To apply, please send your CV to:**  
**Emmanuel Plier, COO**  
[contact@ion-x.eu](mailto:contact@ion-x.eu)

