Controls & Mechatronics Engineer – 100%

Duration: Undetermined
Start Date: By agreement
Location: Innovationspark Zürich, Dübendorf, Switzerland
Workload: Full-time
Remote Work: Flexible, aligned with project needs
Autonomy: High ownership role; proactive engineering mindset required in a fast-moving environment

The EuroTube Foundation is a Swiss non-profit applied research center working at the forefront of next-generation sustainable infrastructure, fostering R&D at the intersection of industry and academia. This position is part of an Innosuisse-funded applied research project conducted in direct collaboration between the **EuroTube Foundation** and **Under Industries.**

Under Industries is a Swiss deep-tech startup developing next-generation trenchless construction technologies. Their core technology combines microtunneling robotics with in-situ thermoplastic tunnel lining manufacturing, building on multiple years of engineering development from advanced student engineering programs and applied research collaborations. Currently transitioning from prototype validation toward industrial deployment and real-world infrastructure applications.

Your Role within the Innosuisse Project – Controls & Mechatronics for Underground Robotic Extrusion
We are seeking a Controls & Mechatronics Engineer to lead the development and integration of control systems for a novel robotic polymer extrusion subsystem. The role focuses on turning a complex thermo-mechanical process into a stable, controllable system by combining embedded software, sensor integration, and system-level thinking. You will operate at the intersection of controls, electronics, and physical system behaviour in a multidisciplinary deep-tech environment.

Responsibilities

- **Control System Development**
  - Design and implement control strategies for thermal, pressure, and flow-driven processes
  - Development of real-time control software (embedded systems, C/C++ or similar)
  - Implementation of control algorithms (PID, state machines, system-level logic)
  - System modelling and tuning of dynamic processes
- **Electronics & Hardware Integration**
  - Selection and integration of sensors (temperature, pressure, position, flow, etc.)
  - Specification and integration of actuators (motors, heaters, valves, etc.)
  - Definition of system-level electronic architecture (MCU, interfaces, power systems)
  - Support wiring, bring-up, and debugging of hardware systems
- **Mechatronic System Integration**
  - Close collaboration with mechanical engineering on system design and interfaces
  - Integration of control systems into a thermo-mechanical extrusion process

    - Definition of interfaces between hardware, controls, and software
    - Contribution to system architecture decisions
- **Prototyping and Testing**
    - Support assembly and commissioning of prototype systems
    - Support laboratory and field testing campaigns
    - Failure analysis and root cause investigation
    - Iterative design improvement based on test data

Required Qualifications

- MSc (preferred) or BSc in Electrical Engineering, Mechatronics, Robotics, or related field
- 3+ years of experience in controls, embedded systems, or mechatronic system development
- Strong programming skills in C/C++ and industrial control systems (PLC / safety PLC)
- Experience with real-world hardware systems and sensor integration
- Hands-on mindset and willingness to work on prototypes
- Strong problem-solving and analytical thinking

Nice to have

- Experience with heavy machinery, robotics, or industrial equipment
- Polymer processing, extrusion, or thermal process systems
- Familiarity with industrial communication protocols (CAN, RS485, etc.)
- Basic PCB design experience
- Python for tooling, testing, or data analysis
- Experience in early-stage product development or startups

What we offer

- Direct impact on product and technology decisions
- Flexible and fast-moving startup environment
- Small team, extremely high ownership
- Exposure to real-world infrastructure deployment projects

How To Apply

If you are motivated to apply advanced engineering to real-world infrastructure challenges, we would be happy to hear from you.
Please send us your CV and motivation letter to: antoine.juge@eurotube.org

Don’t meet every requirement?

If you are excited about the role and our mission, we still encourage you to apply. We value strong problem-solving ability, hands-on engineering mindset, and learning speed as much as specific experience. Tell us in your application where you see yourself contributing most.