

Senior Process Engineer

Tulum Energy is an early-stage technology company developing an innovative Turquoise Hydrogen pyrolysis solution for clean and inexpensive hydrogen production. Our platform technology will have a major impact in our world's attempt to decarbonize by reducing greenhouse gas emissions. As we race towards this critical goal, we are building a team of world class individuals that are comfortable working at a start-up company, are innovators and have a passion for climate change.

We are currently looking for a **Senior Process Engineer**. In this role you report directly to the Modelling Director and CTO, to analyze, develop, and optimize Tulum's technology to achieved key performance indicators (KPIs). Specific details are below.

Primary Responsibilities:

- The candidate will apply their extensive engineering expertise to enhance the design, execution, and performance of Tulum's Methane Pyrolysis Product
- The responsibilities will be tailored to the system's needs, but will include developing and implementing engineering solutions to improve/analyze system performance and reliability and preparing technical reports.
- Additionally, the Senior Process Engineer will drive process improvements to achieve key systems KPIs including:
 - Perform detailed thermal, combustion, mass and energy balance analyses and calculations
 - Lead the preparation of process-related drawings and documents including PFDs, P&IDs, process schematics, datasheets, technical reports & specifications, equipment general arrangement drawings;
 - Under the direction of the CTO and Modelling Director, perform equipment, pressure safety, relief & control valves sizing, etc. to conform to operational and site regulatory standards/requirements;
 - Provide quality review(s) of project documents and drawings;
 - Manage the tendering of equipment & component design packages, proposal development, and engineering estimates;
 - Build and maintain client relationships and respond to client requests;
 - Provide mentorship to junior colleagues/engineers;

- Help generate key Intellectual Property for the company to increase its Patent Portfolio and IP protection

Minimum Experience:

- Masters Level Mechanical or Chemical Engineer Degree (or equivalent) with 10+ years relevant experience in the process design, analysis and optimization of thermal, reacting and fluids systems including, but not limited to, thermal reactors/oxidizers, gasifiers, gas turbine combustion systems (land based or commercial), boiler burners, process heaters, petrochemical projects, etc.
- Solid understanding of Methane Pyrolysis, specifically Turquoise Hydrogen Production
- Thorough understanding of thermodynamics and reacting and non-reacting fluid dynamic flows
- Expert level expertise in a variety of Process and Chemical Engineering solvers including Aspen HYSYS, Aspen PLUS, DWSIM, or the like
- Intermediate experience in a variety of kinetic and equilibrium solvers as Cantera, Ansys Chemkin, Gaseq, or the like
- Experience with reduced order kinetic models integration into Chemical Process solvers
- Exceptional communication skills both written and verbal; ability to present results in front of a group of peers
- Support Design Team in product design and development activities
- Ensure that product design and performance meets technical and functional requirements
- Ability to work independently and as part of a team
- Mechanical aptitude, hands on, and the desire and capability to lead a team if needed

Additional Experience Desired:

- Ability to read and interpret CAD drawings
- Intermediate experience with CAD packages such as CATIA, Solid Works, AutoCAD, CREO or the like and associated GD&T standards
- Hands on experience using and operating flammable gases and operating combustion test rigs including data analysis and processing
- Experience with both high and low speed instrumentation (dynamic pressure and temperature sensors), flow meters, regulators, etc.



- Experience with process control system hardware and DAQ software (DCS, HMI, PLC, National Instruments),
- Versed in such software and programming tools as MATLAB, Python, C++, or the like

Location

The position is based in Milan Italy, but some remote working arrangements will be considered with visits to Milan as needed.

Tulum Energy

Tulum Energy is an early stage and dynamic Start-up Company. Our Standard employment package includes a base salary, Stock Options, Vacation and Health Insurance. For the current opening:

- Salary Range: \$80,000-\$120,000
- Permanent Full-Time Position