



Job Title	Senior Mechanical Engineer
Location	We're operating a hybrid work model where the role permits. Our labs are in Hanger Lane, but we offer the flexibility of Home Office (80%) / West London (20%)
Type	Full-time
Salary	Salary plus Equity We want our team to be invested in the business, rewarded through the creation of value. For this reason, we have a shareplan.
Holiday	25 days

About Supercritical:

Supercritical is developing the world's first high pressure, ultra-efficient water electrolyser for green hydrogen production. The system will be capable of overcoming many of the limitations experienced by today's incumbent electrolysis technologies. By harnessing the benefits of heat and pressure, Supercritical's proprietary design enables us to operate in the region of the highest electrical efficiencies seen commercially today, whilst delivering hydrogen at high pressure which is perfect for storage. The resultant green hydrogen and oxygen products that we produce can be used to decarbonise heavy industry, chemicals, transport and more. We have recently closed a £2.6million funding round and have announced two incredible projects - [WhiskHy](#) and [GreeNH3](#)

Globally 'Top 50 to watch for climate action' - CleanTech Group
Top5 Zero Emission Solution to watch in 2022 (StartUS Insights)
Runner-up and People's Choice in 'Shell's 2021 New Energy Challenge'
Finalist 'Hydrogen Hypothesis' - OZ Minerals

The opportunity:

Supercritical is looking for a well-rounded and experienced Senior Mechanical Engineer to join our Product team, with an emphasis on the static equipment in the balance of plant equipment that supports our proprietary electrolyser. The candidate will use their knowledge of high temperature high pressure operations to develop design concepts in accordance with applicable codes, specify and select equipment, and define testing and acceptance procedures for our pressurised vessels and heat exchangers.

The role offers an exciting opportunity to take part in pioneering projects enabling first of a kind systems pushing the boundaries with our 400 deg C and 240 barg operating condition.

With multiple projects now secured, we require a candidate capable of driving the development of the Supercritical Electrolyser through increasing scales while ensuring inherently safe design and compliance with design standards. The Senior Mechanical Engineer must be able to communicate confidently with suppliers, customers and other third parties.



Accountabilities:

You will

- Lead the specification and selection of static equipment within the Supercritical process.
- Offer expert insight in system design reviews and safety reviews such as FMEAs and HAZOPs
- Interface and collaborate well with the technology, process, safety and electrical teams to achieve Supercritical's common goal.
- Support the Technical team (focussing on electrolytic testing and the reactor design) as required, using knowledge of pressure containment and design standards.
- Lead vendor management and expediting.

About you

You will

- Be passionate about a net zero environment, excited by innovation and proactive in your pursuit of it.
- Have a Masters in mechanical or aeronautical engineering.
- 6+ years of professional experience as a mechanical engineer in a high pressure, high temperature industry, such as within the Gas, Refining, Petrochemicals, Chemical or Nuclear sectors. Experience of design/operation of high pressure, flammable gases is preferred.
- Have experience in specifying and sourcing pressure vessels designed to EN 13445, PD 5500, ASME BPVC (Nuclear Section III) and ASME VIII.
- Have experience in modelling, designing and specifying heat exchangers in software such as HTRI or Aspen EDR.
- Have a solid understanding of design and materials selection in high temperature, high pressure, corrosive environments and have design experience with the use of corrosion resistant alloys.
- Have participated in safety methodologies such as HAZOP, FMEA, DSEAR and ATEX.
- Thrive in a startup environment as a self starter and proactively identify problems and pursue solutions.
- Have strong organisational skills, attention to detail and enjoy working in a team environment.
- Be able to manage multiple projects simultaneously without losing sight of the long term goal.
- CAD software proficiency like Solidworks, Creo, NX, Solid Edge, Autodesk, Catia.

Desirable

- Knowledge of the hydrogen industry, electrolysers and/or fuel cell technologies is an advantage.
- Have experience with hydrogen design/operations.
- Experience of design for supercritical water.
- Proficiency in creating CFD models for flow distribution and heat transfer using CFD modelling softwares (inc COMSOL/ANSYS/StarCCM+).
- Have experience in specifying piping components and valves for high pressure high temperature applications
- Have worked in early stage product development and delivering a pathway to commercialisation.
- Some experience and knowledge in rotating equipment; reciprocating and centrifugal pumps turboexpanders and compressors.
- Experience in the specification of packaged equipment items.
- Experience in renewable power equipment development.