

Project Title: Chemical Engineer/Technician

Company: Skyrora

Supervisor: Robin Hague

Location: Newquay, Cornwall

Company Description:

Skyrora is a space launch vehicle company, headquartered in Edinburgh, that is moving very fast in the development of a holistically designed launch vehicle evolved from previous British launch capability. We aim to target the small satellite market, providing dedicated, versatile and responsive launches from the North of Scotland. A number of logistical and design approaches are expected to give the Skyrora launch vehicle a market leading balance of cost and responsiveness. A key factor in achieving this is in the use of Hydrogen Peroxide, like Black Arrow, as a versatile, storable and self-igniting oxidiser. This brings significant design and operational virtues in combination with kerosene. Cost-effectiveness will be further enhanced through the application of additive manufacturing, advanced forming techniques and design-for-manufacture.

Skyrora's strategy is to initially increase size and apogee of the rocket to build up to a sub-orbital launch with our vehicle Skyrora-1, this is scheduled for Q2 2019. Following this we will then continue development to produce our orbital launch vehicle the Skyrora-XL. This step-by-step strategy allows us to de-risk our processes as we work towards our main orbital launch vehicle Skyrora XL. As well as being useful for testing, Skyrora 1 can be used for scientific experiments providing quick access to a microgravity environment in a cost-effective manner. Our main vehicle, the Skyrora XL, is a three-stage launch vehicle designed to carry more than 300kg in payloads into a sun-synchronous orbit. We're already testing engines for this vehicle and plan to launch when the new UK spaceport and regulations are in place.

Project Description:

Skyrora are seeking a chemical engineer who will work together with our lead chemical engineer on a number of roles relating to a High-Test Peroxide (HTP) facility and the engine testing of our third-stage orbital engine. They will be involved in ensuring the quality of distillation of a high concentration hydrogen peroxide (90%) and working with our in-house chemists to improve output levels and efficiency of the plant.

At the HTP facility, the applicant will be required to:

- Handle quality control of raw materials and the end product
- Oversee technological control of the distillation process of the highly concentrated hydrogen peroxide (90%)

- Work alongside our in-house chemist to ensure the production plant is set up efficiently in order to provide maximum output levels
- Involvement in the design of plant and equipment configuration to allow for adaption to suit project range and technologies involved, taking environmental and economic aspects into account
- Optimising production by analysing processes and compiling de-bottleneck studies

Applicant Specification:

Chemistry or chemical engineering background is essential, although we are also interested to hear from any applicants who have knowledge relating to aerospace engineering in addition to chemical engineering – open to candidates with undergraduate or post-graduate (Masters or PhD) degrees.

Minimum Requirements:

Bachelor's degree in chemistry or chemical engineering. Masters is preferable but not essential.

Preferred Additional Requirements:

Some knowledge or previous experience working with hydrogen peroxide is preferable but not essential.

Further details:

8 weeks minimum fixed term contract to be agreed with successful candidate but nominally with a start date around 10/12/2018, with a completion around 01/02/2019. Salary is £1,400 per calendar month.

Closing Date for Applications: 5pm on the 28th November 2018

Applications should be made through the online form attaching a CV, before the closing date. Please note that elements of the form left incomplete will be deemed to render the application ineligible. They will be checked for eligibility and forwarded to the employer.