University of Nottingham
UK | CHINA | MALAYSIA

Role profile

Job title	Senior Mechanical Technician	**Job family and level**	Technical Services 4
School/ Department	Zero Carbon Cluster, Faculty of Engineering	**Location**	Hybrid Propulsion System facility, Jubilee Campus

Purpose of role

This technical role will support the Zero Carbon Cluster and Power Electronics Machine Control research groups, within the Faculty of Engineering. The role holder will ensure timescales and deliverables are met in accordance with the University's health and safety policies.

This will involve the setup and operation of bespoke test stands including research and industrial units under test, which can include cryostats, fuel cells, thermal engines, electrical machines and powered electronic components in the Hybrid Propulsion Systems (HPS) test facility. The role will support the Senior Technical Specialist (Hydrogen Propulsion) and work alongside other mechanical technicians and the PEMC electrical technical team within the HPS test facility.

	Main responsibilities (Primary accountabilities and responsibilities expected to fulfil the role)	**% time per year**

1	**Bespoke system test setup and testing**
	▪ Mechanical setup of the test stands for campaigns and otherwise when required, including:
	  ▪ Piping and connection of gaseous hydrogen delivery to test articles.
	  ▪ Arrangement of ventilation and extraction systems to safely remove excess hydrogen and exhaust products.
	  ▪ Connection of cryogenic and conventional cooling systems and other mechanical ancillaries.
	▪ Maintenance, operation, connection and control of the laboratory's specialised equipment, including hydrogen and ammonia delivery systems, air handling and gas safety
	▪ Mechanical alignment of test articles using laser or manual alignment tooling.
	▪ Maintenance of facility records, risk assessments and associated documentation, complying with relevant standards.
	▪ Supporting technical colleagues with the installation of electrical systems and test articles as required.
	▪ To program and operate bespoke test stands during testing campaigns to customer or agreed requirements, always ensuring safe operation and working within agreed parameters.
	▪ Use of specialised equipment in the prototype testing and reporting findings to the Senior Technical Specialist.
		50%

	▪ Support Senior Manufacturing, Mechanical, and Electrical Engineers for the Zero Carbon Cluster group.	
2	**Software and automation** ▪ Use of a variety of test stand operation packages and to help interpret outputs based on customer specification. ▪ Use of a variety of measurement and data capture platforms in the capture and interpretation of data from testing campaigns. ▪ Support automation of test processes to minimise human intervention and maximise efficiency and repeatability of delivery	20%
3	**Health & Safety** ▪ Ensure compliance with work-related legal Health and Safety regulations/standards, including risk assessments, the implementation of controls, and safe working practices. ▪ Act as the hydrogen laboratory 'authorised person' and manage the laboratory as required by the University's explosive atmospheres policies. ▪ Carry out the calibration, maintenance, and servicing schedules for test equipment and rigs associated with the facility. ▪ Maintain good housekeeping of all workshops and laboratories within the facility.	15%
4	**Specialist technical advice** ▪ To provide technical specialist advice in support of grant applications and in the contribution to research publications. ▪ Working with industrial customers, PEMC academics and researchers, assessing designs and offering advice on alternative engineering solutions to achieve the campaign objectives.	10%
5	**Other** ▪ Any other duties appropriate to the role and grade of the post holder.	5%

Person specification

	Essential	Desirable
Skills	▪ Analytical and technical problem-solving skills ▪ Ability to adopt a methodical approach and prioritise work in order to meet deadlines. ▪ Motivated, self-directed and independent ▪ Good oral and written communication skills to enable the identification and understanding of the 'customer' requirements. ▪ Ability to adapt communication styles to communicate clearly to a variety of audiences including specialist and senior level colleagues. ▪ Ability to build effective working relationships and collaborate with others both internally and externally	▪ Electrical engineering skills. ▪ Ability to assess and organise resource effectively and keep within a defined budget.
Knowledge and experience	▪ Experience of mechanical systems installations, possibly gained from an apprenticeship or previous role. ▪ Independent planning and execution of mechanical installations ▪ Understanding of health and safety work-related regulations, their implementation and the implications of non-compliance.	▪ Knowledge of hydrogen and cryogenic systems and associated risk analysis. ▪ Experience of test stand operation and setup ▪ Previous mechanical experience gained in an industrial or research role ▪ Experience of working with explosive atmospheres
Qualifications, certification and training (relevant to role)	▪ Minimum HNC or equivalent, plus relevant work experience in a similar role OR ▪ Previous work experience in a mechanical engineering role	▪ Level 3 Certificate in Hydrogen ▪ Swagelok hydrogen tubing system training
Statutory, legal or special requirements	▪ Eligibility to work in the UK	

Expectations and behaviours

The University has developed a clear set of core expectations and behaviours that our people should be demonstrating in their work, and as ambassadors of the University's strategy, vision and values. The following are essential to the role:

Valuing people	Understands that it is essential to provide a structure that people can thrive in. Knows how to communicate with people to create a healthy working environment and get the best out of people.
Taking ownership	Communicates vision clearly, providing direction and focus. Knows how to create a productive environment where people are inspired and can work cross-departmentally in partnership.
Forward thinking	Has the ambition to be a pioneer in own area, anticipating the future change, needs and challenges. Knows how to innovate within their work context and champions others to be inspired to be part of this ambition
Professional pride	Keeps up to date on latest thinking, trends and work practices. Supports team to be thought leaders; willing to challenge if obstacles get in the way.
Always inclusive	Establishes far reaching partnerships, well beyond own area across a broad range of networks. Understand role to pay due regard to the needs of the whole community.

Key relationships with others