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Job Description

Post title: **Research Fellow on Active Thermography**

School / Department: School of Engineering / Department of Aeronautics and Astronautics

Faculty / Directorate: Engineering and Physical Sciences

Job Family: Education, Research and Enterprise (ERE)

Grade: Level 4

ERE Pathway (if applicable): Research

Post reporting to: Nico Avdelidis

Post line report(s): None

Post base location: Boldrewood Innovation Campus

Job purpose: Research: Building research skills, experience and networks, with appropriate guidance, support and supervision. Work is typically focused on a personal programme of research or contributing to wider programmes of research.

Leadership, Management and Engagement: Planning own work and contributing effectively to leadership, management and engagement activities, with appropriate guidance, support and supervision.

## Key accountabilities and indicative time allocation:

1. **80%**

**Research Contribution**:

* Evaluate all active thermography approaches for composites inspection.
* Develop a database of raw and processed thermographic images of different defects - geometries on composites.
* Develop rigorous and original research contributions that lead to the discovery of new knowledge, insight and/or understanding.
* Test of thermographic image processing tools and techniques (all applicable to composites) to improve defect detection.
* Support the automation of the active thermography inspection (integration of robotic arm with active thermography approach selected).
* Support demonstrations - trials within the industrial environments selected within the project.
* Ensure that research outputs are findable, accessible, interoperable and reproducible (FAIR) and, wherever possible, open access.
* Take opportunities to ensure research activities benefit educational practice.

1. **10%**

**Leadership, Management and Engagement Contribution**:

Building on the Leadership, Management and Engagement contributions inherent in other Level 4 activities:

* Plan and prioritise own work effectively.
* Undertake defined tasks and contribute effectively to team or project work.
* Actively contribute to, and support, Equality, Diversity and Inclusion initiatives within your role, ensuring that EDI principles are integrated into daily tasks and interactions.
* Support and help ensure the health and wellbeing of colleagues.

1. **10%**

Any other duties as allocated by the line manager following consultation with the post holder.

Internal and external relationships:

Project collaborators and other members of the department

Special requirements:

To be available to travel to participate in meetings as required by the research project.

To attend national and international conferences for the purpose of disseminating research results.

# Person Specification – Skills and Competencies

All essential and desirable criteria outlined in this Person Specification will be assessed through a combination of recruitment application and CV, and where applicable an interview.

**Knowledge, Experience and Qualifications**

Essential

* Substantial and authoritative practical knowledge and experience in materials engineering, materials science, failure analysis or closely related discipline, supported by detailed understanding.
  + The required level of knowledge and understanding will normally have been gained through some or all of the following:
    - Considerable work experience
    - Vocational training
    - Formal qualification(s) equivalent to Level 7 or 8 of the [Regulated Qualifications Framework](https://eur03.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.gov.uk%2Fwhat-different-qualification-levels-mean%2Flist-of-qualification-levels&data=05%7C02%7CN.Garcia-Araez%40soton.ac.uk%7C78e90b8d926c43e7321f08ddeb86fb4e%7C4a5378f929f44d3ebe89669d03ada9d8%7C0%7C0%7C638925687195329537%7CUnknown%7CTWFpbGZsb3d8eyJFbXB0eU1hcGkiOnRydWUsIlYiOiIwLjAuMDAwMCIsIlAiOiJXaW4zMiIsIkFOIjoiTWFpbCIsIldUIjoyfQ%3D%3D%7C0%7C%7C%7C&sdata=yBl37xI0oKUwlzoKUfGenX8FjAGbLdlv4QAIM1bfZEI%3D&reserved=0) e.g. master’s degree, postgraduate certificate, diploma, PhD in engineering, materials science or closely related discipline in or Level 7 or 8 award, certificate, diploma.
* Research experience and high-level knowledge in the following areas:
  + Testing of composite materials and structures.
  + Non-Destructive testing of materials and structures.
  + Image acquisition and analysis and classification of data.

Desirable

* Research experience in the following areas:
  + Thermography testing and evaluation of materials and structures.
  + Algorithm deployment for automated diagnostics and machine vision for composites.

**Teamwork and Communication**

Essential

* Able to work independently and make appropriate decisions.
* Work effectively in a team, understanding the strengths and weaknesses of others to help teamwork development.
* Communicate new and complex information effectively, both verbally and in writing, engaging the interest of the target audience.
* Able to present research results at group meetings and conferences.
* Able to write up research results for publication in leading peer-viewed journals

**Planning, Organisation and Resource Management**

Essential

* Able to organise a range of activities to deadline and quality standards.

**Problem Solving and Initiative**

Essential

* Able to develop understanding of complex problems and apply in-depth knowledge to address them.

# Job Hazard Assessment

A full health clearance is required for this role where any hazards marked “**^**”, using the agreed Occupational Health referral template [available from here](https://sotonac.sharepoint.com/teams/HealthWellbeing/SitePages/Occupational-Health.aspx). Where a full health clearance is required, this will apply to all role holders, including existing members of staff.

## Physical Environment

Working outside **^** Not applicable

Exposure to noise levels >80dbA **^** Not applicable

Working with dust or fumes **^** Not applicable

Working with skin irritants **^** Not applicable

Working with chemicals (industrial or cleaning) **^** Not applicable

Working in a confined space **^** Not applicable

Working at height **^** Not applicable

Working with sewage **^** Not applicable

Contact with cytotoxins **^** Not applicable

Exposure Prone Procedure (EPP) work **^** Not applicable

Contact with clinical specimens or pathology work **^**  Not applicable

Direct patient care or patient contact Not applicable

Exposure to temperature extremes Not applicable

Frequent hand washing Not applicable

Ionising radiation Not applicable

## Psychological and Social Environment

Working shifts **^** Not applicable

Working nights **^** Not applicable

Lone working Not applicable

Working with children Not applicable

Exposure to persons with challenging behaviourNot applicable

Working with larger groups Not applicable

## Equipment, Tools and Machines

Working with vibrating machinery or tools **^** Not applicable

Driving duties e.g. LGV, PCVs, forklift trucks **^** Not applicable

Food handling Not applicable

Contact with latexNot applicable

## Physical Abilities

Prolonged physical movements or actions e.g. walking **^** Not applicable

Prolonged Standing or Sitting **^** Not applicable

Moving or handling heavy loads **^** Not applicable

Repetitive pulling or pushing **^** Not applicable

Repetitive climbing (steps, stools, ladders, stairs) **^** Not applicable

Repetitive crouching, kneeling or stooping Not applicable

Repetitive lifting Not applicable

Fine motor grips (e.g. pipetting) Not applicable

Repetitive reaching below shoulder height Not applicable

Repetitive reaching at shoulder height Not applicable

Repetitive reaching above shoulder height Not applicable

# Behaviours

Our [Inclusion and Respectful Behaviour Policy](https://www.southampton.ac.uk/about/governance/regulations-policies/policies/inclusion-respectful-behaviour) describes the expectations of everyone who is a part of our community.

Our **Southampton Behaviours** (below) outline the responsibilities we each have in working collaboratively to achieve our University strategy.

**Personal Leadership**

- I take personal responsibility for my own actions and an active approach towards my development.

- I reflect on my own behaviour, actively seek feedback and adapt my behaviour accordingly.

- I demonstrate pride, passion and enthusiasm for our University community.

- I demonstrate respect and build trust with an open and honest approach.

**Working Together**

- I work collaboratively and build productive relationships across our University and beyond.

- I actively listen to others and communicate clearly and appropriately with everyone.

- I take an inclusive approach, value the differences that people bring and encourage others to contribute and flourish.

- I proactively work through challenge and conflict, considering others’ views to achieve positive and productive outcomes.

**Developing Others**

- I help to create an environment that engages and motivates others.

- I take time to support and enable people to be the best they can be.

- I recognise and value others’ achievements, give praise and celebrate their success.

- I deliver balanced feedback to enable others to improve their contribution.

**Delivering Quality**

- I identify opportunities and take action to make improvements.

- I plan and prioritise efficiently and effectively, taking account of people, processes and resources.

- I am accountable for tackling issues, making difficult decisions and seeing them through to their conclusion.

- I encourage creativity and innovation in others, to deliver workable solutions.

**Driving Sustainability**

- I consider the impact on people before taking decisions or actions that may affect them.

- I embrace, enable and embed change effectively.

- I regularly take account of external and internal factors, assessing the need for change, and gaining support to move forward.

- I take time to understand our University strategy and communicate this to others.