Position Description

Research Associate

ORGANISATIONAL ENVIRONMENT

UNSW is currently implementing a ten year strategy to 2025 and our ambition for the next decade is nothing less than to establish UNSW as Australia’s global university. We aspire to this in the belief that a great university, which is a global leader in discovery, innovation, impact, education and thought leadership, can make an enormous difference to the lives of people in Australia and around the world.

Following extensive consultation in 2015, we identified three strategic priority areas. Firstly, a drive for academic excellence in research and education. Universities are often classified as ‘research intensive’ or ‘teaching intensive’. UNSW is proud to be an exemplar of both. We are amongst a limited group of universities worldwide capable of delivering research excellence alongside the highest quality education on a large scale. Secondly, a passion for social engagement, which improves lives through advancing equality, diversity, open debate and economic progress. Thirdly, a commitment to achieving global impact through sharing our capability in research and education in the highest quality partnerships with institutions in both developed and emerging societies. We regard the interplay of academic excellence, social engagement and global impact as the hallmarks of a great forward-looking 21st century university.

To achieve this ambition we are attracting the very best academic and professional staff to play leadership roles in our organisation.

VALUES IN ACTION: OUR UNSW BEHAVIOURS

UNSW recognises the role of employees in driving a high-performance culture. The behavioural expectations for UNSW are below.

Delivers high performance and demonstrates service excellence.

Thinks creatively and develops new ways of working. Initiates and embraces change.

Works effectively within and across teams. Builds relationships with internal and external stakeholders to deliver on outcomes.
Values individual differences and contributions of all people and promotes inclusion.

Treats others with dignity and empathy. Communicates with integrity and openness.

OVERVIEW OF RELEVANT AREA AND POSITION SUMMARY

The School of Mechanical and Manufacturing Engineering is one of the largest and most prestigious in Australia, with 2500 student enrolments, 80 academic staff, 25 professional staff, and total annual budget of over $22 million including external research grants. Our mission is to prepare students for careers of leadership and innovation, create new scientific advances, and translate research outcomes to positively impact national and global industry and society. We are seeking to attract high-calibre researchers and educators to expand our thriving research programs and contribute to our education excellence in Aerospace, Mechanical Engineering, Advanced Manufacturing Engineering, Robotics and Mechatronics. For further information about the School, please visit http://www.engineering.unsw.edu.au/mechanical-engineering/.

The Research Associate will work in the area of advanced manufacturing within the School to carry out research in cross-length scale manufacturing processes and provide support to HDR students and other researchers working on various topics in manufacturing processes.

The role of Research Associate reports to the Head of School or an appointed delegate.

RESPONSIBILITIES

Specific responsibilities for this role include:

- Conduct research in the areas of micro-jet flow for thin film printing and abrasive jet machining at cross-length scales independently and as part of a team.

- Provide support to HDR students, higher degree practicum students and visiting academics working in various topics in abrasive jet machining, laser machining, hybrid laser-waterjet machining and thin film printing, using experimental, theoretical and computational (e.g. FEM, CFD, FDM, BEM) approaches.

- Contribute to the writing of scientific papers for international journals and progress reports to other researchers and industry partners.

- Assist with the coordination of research activities and actively contribute to research outputs to meet project milestones.

- Contribute to the preparation of research proposal submissions to funding bodies and actively seek collaboration with industry partners as appropriate.

- Participate in and/or present at conferences and/or workshops relevant to the project as required.

- In collaboration with other researchers and technical staff, develop, program and operate the research equipment and test rigs needed for the project to satisfactory operation.

- Train researchers for the safe operation of research equipment in abrasive jet machining, thin film printing and hybrid laser-waterjet processes.

- Cooperate with all health and safety policies and procedures of the university and take all reasonable care to ensure that your actions or omissions do not impact on the health and safety of yourself or others.
SELECTION CRITERIA

• PhD with at least 2 years of postdoctoral experience in Mechanical/Manufacturing Engineering or related area.
• Demonstrated ability to conduct independent research with limited supervision.
• Demonstrated track record of publications and conference presentations relative to opportunity.
• Demonstrated ability to work in a team, collaborate across disciplines and build effective relationships.
• Strong interpersonal skills with demonstrated ability to communicate and interact with a diverse range of stakeholders and students.
• Demonstrated experience in computational modelling and simulation of the high-pressure jet flow and/or high velocity micro-particle impact characteristics.
• Demonstrated experience in abrasive jet research using experimental, analytical and computational approaches.
• Demonstrated experience in research using micro-inkjet for thin film printing. Good knowledge in laser and hybrid laser-waterjet machining is an advantage.
• Knowledge of health and safety responsibilities and commitment to attending relevant health and safety training.

It is not the intention of the position description to limit the scope or accountabilities of the position but to highlight the most important aspects of the position. The aspects mentioned above may be altered in accordance with the changing requirements of the role.