# Postgraduate Top-Up Scholarships

Role summary for potential applicants

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| Advertised Job Title**:** | CSIRO Postgraduate Scholarships - **Manufacturing** |
| Reference Number**:** | 47416 |
| Scholarship: | AU$7,000 per year as a top up scholarship (stipend), plus a generous operating budget of up to $10,000 per annum |
| Location**:** | Various locations across Australia |
| Length of Engagement: | (Up to) 3 year term (concordant with existing RTP or scholarship) |
| Applications are open to: | Australian Citizens Only  Australian Citizens and Permanent Residents Only   * All Candidates |
| Research Areas**:** | Various – please see the list at the end of this document |
| How to Apply: | *Before you apply please read the information in this document about these scholarships and the research projects on offer. There is additional information on our* [*Postgraduate scholarships*](http://www.csiro.au/en/Careers/Student-and-graduate-programs/Postgraduate-scholarships) *page at CSIRO Careers.*  To apply, please prepare **ONE** document which includes all of the following:   1. your **CV/resume**; 2. the names and contact details of two previous supervisors or academic/ professional referees; 3. the reasons why the research area(s) you have selected is of interest to you; 4. how your previous skills/knowledge and experience meet the requirements; and 5. an outline of your longer-term career aspirations and detail how this program will help you achieve them.   After preparing the above document please return to the advertisement and complete the following steps to apply:   1. click on the ‘***Apply Now***’ button to either create a Candidate Profile or to login to your current account. Enter your personal details and then click *‘****Next***’ to move to the application form 2. complete the form and upload the **one document** you prepared as requested above in the field labelled ‘***Resume and cover letter***’ 3. complete the ***Preferences*** section by selecting your **2 preferred research areas** from the list below in order of preference in the *Preference 1* and *Preference 2* fields (e.g. ***Manufacturing 1***; ***Manufacturing 2;***  etc); and 4. upload your **academic results** in the ‘***Requested Information***‘ field.   If you experience difficulties applying online call 1300 984 220 and someone will be able to assist you. Outside business hours please email: [csiro-careers@csiro.au](mailto:csiro-careers@csiro.au).  *Please do not email your application. Applications received via this method may not be considered.* |

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| About CSIRO**:** | At the Commonwealth Scientific and Industrial Research Organisation (CSIRO), we shape the future. We do this by using science and technology to solve real issues. Our solutions make a difference to industry, people and the planet.  We’ve been pushing the edge of what’s possible for almost 90 years. Today we have thousands of talented people working across Australia and internationally. Our people work closely with industry and communities to leave a lasting legacy. Collectively, our innovation and excellence places us in the top ten applied research agencies in the world.  CSIRO. We imagine. We collaborate. We innovate. |

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| **Role Overview:** |
| CSIRO’s Postgraduate Scholarship Program provides enhanced opportunities in science and engineering for outstanding graduates enrolling each year at Australian tertiary institutions as full-time postgraduates for research leading to the award of a PhD. Top-up Scholarships (or in some circumstances full scholarships) are being offered in 46 priority research areas.  Top-up scholarships will be the norm and are available to PhD students who have gained (or expect to gain) a Research Training Program (RTP) scholarship or equivalent scholarship.  At the time of submitting an application for a CSIRO PhD Scholarship, students must have, or expect to gain, first class honours or equivalent in a relevant research area. Students must also expect to receive a Research Training Program (RTP) scholarship or university equivalent commencing in that year. Exceptional students who, for a justifiable reason, do not have an RTP may be considered for a full scholarship.  Joint supervision of students by a university and a CSIRO supervisor is required and such joint supervisory arrangements must be consistent with the Higher Degree by Research Regulations of the host university. The primary supervisor may be either the university or CSIRO supervisor.  Recipients of CSIRO Postgraduate Studentships are generally required to be Australian citizens or have permanent residency status. However, in fields in which there is a national skill shortage, studentships may be awarded to overseas candidates provided they are prepared to seek permanent residency as soon as possible within Australian Government policy guidelines. International students must be able to show evidence of admission to an Australian university, as well as evidence that either their living costs or international student tuition fees are being covered by another scholarship or from private funds.  CSIRO Postgraduate Scholarships are being offered in the priority research topic areas at various locations. Details of research areas and contact details are available in the **pages below**. |

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| **Selection Criteria:** |
| ***The criteria on which the applications will be assessed are:***   1. **Quality and relevance of student project:** The primary assessment criterion for a CSIRO Postgraduate Scholarship is the quality and relevance of the project being proposed. The research must be aligned with, the advertised priority research area. 2. **Academic calibre of the student:** The quality of the student is also critical to the assessment of a scholarship and candidates must hold (or expect to gain) a relevant first class honours (or equivalent) degree from a recognised University. 3. **Availability of appropriate university supervision:** The relevance of the University supervisor’s research background and their willingness to supervise the student in collaboration with the CSIRO supervisor should also be made clear.   As Australia’s Innovation Catalyst, CSIRO has strategic actions underpinned by behaviours aligned to Excellent science, Inclusion, trust & respect, Health, safety & environment and Deliver on commitments. In your application and at interview you will need to demonstrate alignment with these behaviours. |

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| **Research Area No.** | **Manufacturing - Postgraduate Scholarships Research Areas:** |
| **Manufacturing 1** | **Project Title**  Enzyme-mediated immobilisation to surfaces for biosensors or enzyme-mediated synthesis.  **Project Description**  Applications such as biosensors and enzyme-mediated synthesis require proteins to be immobilised. Sortase A couples proteins via formation of a covalent intermediate which could be exploited for protein immobilisation.  **Contact:** George Georgaklis on (03) 9545 2467 or email [George.Georgaklis@csiro.au](mailto:George.Georgaklis@csiro.au) |
| **Manufacturing 2** | **Project Title**  Bi-component wet spinning of novel carbon fibre precursors.  **Project Description**  To develop multifunctional carbon fibres where strength and stiffness comes from one component while functionality, such as conductivity, low density, or toughness comes from the other component.  **Contact:** George Georgaklis on (03) 9545 2467 or email [George.Georgaklis@csiro.au](mailto:George.Georgaklis@csiro.au) |
| **Manufacturing 3** | **Project Title**  M3 (Integrated Multiphysics and multi-scale modelling of metallic additive-manufacturing processes)  **Project Description**  Several processes occur in metallic additive manufacturing (AM), including powder raking, powder melting and flow of the liquid metal, and development of microstructure and residual stresses in the components produced. The project will involve development of a computational model of one of these processes, and integration of this model into an 'in silico' simulation of the full AM process. The aim is initially to deepen understanding of the AM process, but ultimately to assist with certification of AM components and with process control.  **Contact:** George Georgaklis on (03) 9545 2467 or email [George.Georgaklis@csiro.au](mailto:George.Georgaklis@csiro.au) |
| **Manufacturing 4** | **Project Title**  Quantum sensing and devices  **Project Description**  Quantum sensors have been identified in many industry sectors as a priority. These industry sectors are defence, mineral exploration and telecommunications that need to achieve capabilities currently not possible such as quantum, limited sensing, amplification, and telecommunications. The candidate will join the team working on R&D of superconducting sensors and applied systems in Quantum Engineering.  **Contact:** George Georgaklis on (03) 9545 2467 or email [George.Georgaklis@csiro.au](mailto:George.Georgaklis@csiro.au) |
| **Manufacturing 5** | **Project Title**  High-Speed, Magnetically-Levitated Motors and Generators  **Project Description**  There are many emerging applications for high speed motors/generators and CSIRO wishes to build upon its past successes with 50,000 rpm motors/generators by increasing speed to > 100,000 rpm. The research will be very challenging with contributions required in mechanical integrity, iron loss, and stability and stiffness of magnetic bearings. A PhD student is sought who has a sound grounding in magnetic design, power electronics, control systems, and mechanical design.  **Contact:** George Georgaklis on (03) 9545 2467 or email [George.Georgaklis@csiro.au](mailto:George.Georgaklis@csiro.au) |