# PhD Top-Up Scholarship

Role summary for potential applicants

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| Advertised Job Title: | Postgraduate Top-up Scholarship  – Advancing High Temperature Solar Thermal Storage Technology |
| Reference Number**:** | 10561 |
| Classification**:** | PhD Postgraduate Student |
| Salary Range: | AU$7.5K per annum top-up for holders of an Australian Postgraduate Award enrolled in a PhD degree program. |
| Location**:** | Negotiable CSIRO Site (or at nominated ASTRI University Partner’s site) |
| Tenure: | Specified Term of (Up to) 3 year term (concordant with existing APA or scholarship) |
| Relocation assistance**:** | Not provided. |
| Applications are open to: | Australian Citizens Only  Australian Citizens and Permanent Residents Only   * All Candidates |

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| **Role Overview:** |
| CSIRO Energy’s National Solar Energy Centre (NSEC) in Newcastle conducts world class research and development related to advanced solar processes and technology. CSIRO now welcomes Expressions of Interest for PhD Top-up Scholarship from postgraduates with engineering, mathematics or physics background to join an exciting, interdisciplinary team in advancing solar thermal storage science and technology in partnership with the Australian Solar Thermal Research Initiative (ASTRI). Of particular interest would be a student with strong knowledge and skills in engineering, mathematics, process simulation and/or computational modeling related to thermal processes involving solid materials. |

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| **Duties and Key Result Areas:** |
| **Priority Research Area Description:**  High temperature solar thermal storage is critical in achieving high solar energy efficiency. The ability to effectively store and transport large quantity of thermal storage media at high temperature will enhance the availability and utilization factor of the solar power plant, thus improving the overall process economics. Solid particles provide good thermal storage capacity and stability at temperatures higher than other storage media such as molten salt. Combining both sensible heat and thermal-chemical enthalpy of the material, large thermal energy can be stored for subsequent utilization.  Innovative engineering solutions that enable effective storage and recovery (extraction) of thermal energy from hot solid particles to generate power / electricity is an integral and critical part of the new generation solar thermal energy technology.  CSIRO is seeking self-motivated and innovative postgraduate student to join the research team to undertake research studies in the area of high temperature solar thermal energy storage. Areas of research aligned with the specific CSIRO solar thermal storage projects may include:   * Novel thermal processes and energy storage systems (engineering and physics) * Process dynamic simulation and integration (engineering and process simulation) * Particulate flow and dynamic behaviour including experimental and advanced computational modelling (engineering, physics and mathematics)   The successful candidate will work jointly with Dr Seng Lim and Dr Jim Hinkley at the CSIRO Energy business units based at Melbourne and Newcastle respectively, in addition to his/her university supervisor. |
| **Scholarship Information:** |
| The top up scholarships are available to PhD students who have gained (or expect to gain) an Australian Postgraduate Award (APA) or equivalent scholarship at an Australian university.  While the normal expectation is that scholarships will be full time, they may be converted from full time to part time where CSIRO agrees that there are compelling reasons for this and the APA, if any, is also converted to part time.  At the time of submitting an application for an PhD Scholarship top-up, students must also expect to receive an Australian Postgraduate Award (APA) or university equivalent commencing in that year.  Joint supervision of students by a university and a CSIRO supervisor is required wherever possible, and such joint supervisory arrangements must be consistent with the Higher Degree by Research Regulations of the host university. It is expected in most cases the primary supervisor will be the university supervisor.  Recipients of CSIRO Postgraduate Studentships and Supplementary Awards 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 Department of Immigration and Citizenship 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.  Top-up scholarships are being offered in a number of output research areas and it is expected that a significant component of research will be undertaken at CSIRO except where it is demonstrated the facilities necessary are also available at the host university. |

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| **Selection Criteria:** |
| ***Pre-Requisite***  The student must hold (or expect to gain) an Australian Postgraduate Scholarship or equivalent and be accepted as a PhD student at an Australian University. The student must not be in full time employment, and must not be subject to an obligation to a third party to provide that party with rights to any IP created in the course of their degree.  Applicants must address the core selection criteria (project details, academic calibre and research prospects) in your resume. Evidence of academic results is also required.  The four criteria on which the applications will be assessed are:   1. **Quality and relevance of student project**   The primary assessment criterion for top-up scholarships is the quality and relevance of the project being proposed. The research must be complementary to, and clearly aligned with, the advertised priority research area.   1. **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 degree from a recognised University.   1. **Availability of appropriate university supervision**   The relevance of the University supervisor’s research background and their willingness to supervise the student in partnership with the CSIRO supervisor should also be made clear.   1. **Potential to support directions of the research area**   The potential of the proposed student project to support the directions of the advertised research priority area is essential.  **CSIRO is a values based organisation. You will need to demonstrate behaviours aligned to our values of:**   * Integrity of Excellent Science * Trust & Respect * Creative Spirit * Delivering on Commitments * Health, Safety & Sustainability |

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| **Other Information:** |
| **How to Apply**  Please apply for this position online at [www.csiro.au/careers](http://www.csiro.au/careers). You may be asked to provide additional information (online) relevant to the selection criteria. If so, then responding will enhance your application so please take the time to provide relevant succinct answers.  If you experience difficulties applying online call 1300 301 509 and someone will be able to assist you. Outside business hours please email: [csiro-careers@csiro.au](mailto:csiro-careers@csiro.au).  **Referees:** If you do not already have the names and contact details of two previous supervisors or academic/ professional referees included in your resume/CV please add these before uploading your CV.  **Contact:** If after reading the selection documentation you require further information please contact:  Dr Seng Limvia email at [seng.lim@csiro.au](mailto:seng.lim@csiro.au) or phone: +61 3 9545 8529.  *Please do not email your application directly to Dr Seng Lim. Applications received via this method will not be considered.*  **About CSIRO:** Australia is founding its future on science and innovation. Its national science agency, the Commonwealth Scientific and Industrial Research Organisation (CSIRO) is a powerhouse of ideas, technologies and skills for building prosperity, growth, health and sustainability. It serves governments, industries, business and communities across the nation.  Find out more! [www.csiro.au](http://www.csiro.au).  **About CSIRO Energy** We are pioneering low-emission technologies that create value for industry and households and provide the knowledge which will help guide Australia towards a smart, secure energy future. For further information on the CSIRO Energy Flagship please visit <http://www.csiro.au/en/EF>  Through our scientists and research facilities, CSIRO Energy Flagship is playing an essential role in achieving reduced emissions and the better use of energy resources. Our solar project priorities focus on research at the National Solar Energy Centre and examine the technical, economic, environmental and transitional issues for uptake of new energy technologies.  See more: [www.csiro.au/energy](http://www.csiro.au/energy)  The **Solar Energy Group** offers CSIRO’s core capability in solar thermal and photovoltaic technologies for power generation and energy storage. Our solar research activities covers the entire technology value chain including new materials discovery, solar reflector, receiver, energy storage, thermo-chemical conversion and power cycle. Where appropriate, the Group collaborates with other research disciplines within CSIRO with complementary expertise and skills. |