# Postdoctoral Fellowship – CSOF4

Role summary for potential applicants

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| Advertised Job Title**:** | CSIRO Postdoctoral Fellowship in Nanofabrication |
| Reference Number**:** | 59528 |
| Classification**:** | CSOF4 |
| Salary Range: | AU $85k to AU $93k plus up to 15.4% superannuation |
| Location**:** | Clayton, Victoria |
| Tenure: | Specified term ending 30 June 2020 |
| Relocation assistance**:** | Will be provided to the successful candidate if required. |
| Applications are open to: | Australian/New Zealand Citizens and Australian Residents only.  ***Note:*** *Non-citizens must have full work-rights for the duration of this contract.* |
| Functional Area**:** | Research Scientist / Engineer - Postdoc |
| % Client Focus - Internal: | 90% |
| % Client Focus - External: | 10% |
| Reports to the: | Team Leader |
| Number of Direct Reports: | 0 |

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| **Role Overview:** |
| **Postdoctoral Fellowships**  The Postdoctoral Fellow will work closely with a leading Research Scientist or Engineer in their respective field. They will carry out innovative, impactful research of strategic importance to CSIRO with the possibility of novel and important scientific outcomes and present the findings in appropriate publications and at conferences.  This Postdoctoral Fellow will work in a highly interdisciplinary research project lying at the intersection of nanofabrication, photoelectrochemistry and hydrogen production. As part of the Solar Materials Team, and in collaboration with the Nanomaterials and Devices Team, you will develop plasmonic nanostructured surfaces that act as photocatalysts during water splitting reactions. You will then measure the performance of these materials and develop ways to enhance their reactivity. You will work closely with the Hydrogen Future Science Platform, CSIRO’s Energy and Manufacturing Business Units and the Melbourne Centre for Nanofabrication. |

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| **Duties and Key Result Areas:** |
| * Under the direction of senior research scientists, carry out innovative, impactful research of strategic importance to CSIRO that will, where possible, lead to novel and important scientific outcomes. * Measure the performance of photocatalytic surfaces in hydrogen producing reactions using standard photoelectrochemical techniques. * Perform the fabrication of nanostructured surfaces using vacuum based techniques, such as sputtering, and thermal- and e-beam evaporation. * Characterise the nanostructures materials using a suite of standard analytical techniques. * Adapt existing and develop new scientific techniques and experimental protocols. * Liaise with industry partners to identify potential commercial applications of the technology. * Undertake regular reviews of relevant literature and patents. * Produce high quality scientific and/or engineering papers suitable for publication in quality journals, for client reports and granting of patents. * Prepare appropriate conference papers and present those at conferences as agreed with your supervisor. * Contribute to the development of innovative concepts and ideas for further research. * Make a contribution to the effective functioning of the research team and help deliver CSIRO’s organisational objectives and plans. * Work collaboratively with colleagues within your team, the business unit and across CSIRO. * Communicate effectively and respectfully with all staff, clients and suppliers in the interests of good business practice, collaboration and enhancement of CSIRO’s reputation. * Adhere to the spirit and practice of CSIRO’s Values, Health, Safety and Environment plans and policies, Diversity initiatives and Zero Harm goals. * Undertake an appropriate training and development program developed by CSIRO. * Other duties as directed.   **CSIRO’s postdoctoral training program**is developed between the Postdoctoral Fellow and a CSIRO scientist or engineer. The program will focus on enhancing the Fellows’ capabilities to the level expected of an independent researcher and will include on-the-job and course-based development encompassing:   * Discipline-specific techniques and protocols * Professional growth * Project management * Communication and influencing skills * Working and collaborating with others   <http://www.csiro.au/en/Careers/Student-and-graduate-programs/Postdoctoral-fellowships> |

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| **Selection Criteria:** |
| *Under CSIRO policy only those who meet all essential criteria can be appointed*  ***Pre-Requisites:***   1. **Education/Qualifications:** A doctorate (or will shortly satisfy the requirements of a PhD) in a relevant discipline area, such as Physical Chemistry relevant to Electrochemistry, Photo-electrochemistry and/or water splitting.   ***Please note:*** *To be eligible for this role you must have* ***no more than 4 years (or part time equivalent)*** *of relevant postdoctoral research experience.*   1. **Communication: High level written and oral communication skills with the ability to represent the research team effectively internally and externally, including at national and international conferences.** 2. **Publications: A record of publications in quality, peer reviewed journals.** 3. **Behaviours:** A history of professional and respectful behaviours and attitudes in a collaborative environment.   ***Essential Criteria:***   1. Detailed fundamental knowledge of photoelectrochemistry. 2. Demonstrated experience in electrochemistry, photoelectrochemistry and/or photocatalysis, such as hydrogen production via water splitting or a related process. 3. A sound understanding of the fundamental issues and present challenges relating to photoelectrochemical water splitting for hydrogen generation. 4. Enthusiasm for and experience with laboratory work including fabrication of photoelectrochemical cells and the physical, chemical and electrochemical measurement; 5. **The ability to work effectively as part of a multi-disciplinary, regionally dispersed research team, plus the motivation and discipline to carry out autonomous research.** 6. A record of science innovation and creativity, plus the ability & willingness to incorporate novel ideas and approaches into scientific investigations.   **Desirable Criteria:**   1. Experience in vacuum based deposition methods, such as sputtering, thermal- and e-beam evaporation. 2. Experience in nanofabrication methods, such as e-beam lithography and nanoimprinting. 3. Experience in the characterisation of surfaces by techniques such as SEM, XRD and UV-Vis.   **As Australia’s Innovation Catalyst, CSIRO has strategic actions underpinned by behaviours aligned to**:   * Excellent science * Inclusion, trust & respect * Health, safety & environment * Delivery on commitments.   **In your application and at interview you will need to demonstrate alignment with these behaviours.**  To be appointed as a Postdoctoral Fellow within CSIRO, candidates are required to have **submitted** their PhD at the time of commencement, as a minimum requirement, if PhD conferment has not been obtained. If a candidate has submitted, but their PhD has not yet been formally attained, the starting salary will be CSOF4-1 (AU$82,450).Upon CSIRO receiving written confirmation that the PhD has been awarded (within a six month period from commencement date), the salary will be increased to the negotiated level and the difference will be back-paid to the Officer’s start date.  ***Special requirements:***  Appointment to this role may be subject to conditions including security/medical/character clearance requirements. Applicants who are not Australian Citizens or Permanent Residents may be required to undergo additional security clearance processes; which may include medical examinations and an international standardised test of English language proficiency (i.e. IELTS test).- <http://www.ielts.org/default.aspx> |

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| **Other Information:** |
| **How to Apply**  Please apply for this position online at <https://jobs.csiro.au/>  Please load your CV (Maximum 2MB). You may also be required to respond to some screening questions.  If you experience difficulties applying online call 1300 984 220 for assistance. Outside Australian business hours please email: [csiro-careers@csiro.au](mailto:csiro-careers@csiro.au).  **Referees**: Please provide contact details of two previous supervisor or academic/professional referees in your resume/CV. We will ask your permission before making contact.  **Contact:** If after reading the position details above you require more information please contact:  **Dr Noel Duffy** via email: noel.duffy@csiro.au or phone: **+61 3 9545 7828**  Please do not email your application directly to Dr Chesman. Applications received via this method may not be considered by the selection panel.  **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).  We work flexibly at CSIRO, offering a range of options for how, when and where you work. Talk to us about how this role could be flexible for you.  Find out more! [CSIRO Balance](https://www.csiro.au/en/Careers/A-great-place-to-work/Work-life-balance)  **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.  Through our scientists and research facilities, CSIRO Energy 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) |