# Postdoctoral Research Fellows (CSOF 4)

Role summary for potential applicants

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| Advertised Job Title | Postdoctoral Research Fellows in Seismology–*Deep Earth Imaging* Future Science Platform Team |
| Reference Number | 47946 |
| Classification | CSOF4 |
| Salary Range | AU$80k to AU$91k plus up to 15.4% superannuation |
| Location | Kensington, Western Australia (2 positions) |
| Tenure | Fixed three-year term |
| Relocation assistance | Provided to successful candidates if required. |
| Applications are open to: | * All Candidates |
| Functional Area | Research Scientist / Engineer – Postdoctoral Fellow |
| % Client Focus - Internal | 80% |
| % Client Focus - External | 20% |
| Reports to | Theme Leader (Seismic Imaging) and *Deep Earth Imaging* Future Science Platform (CSIRO Energy) |

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| **Overview** |
| **Postdoctoral Fellowships** at CSIRO provide opportunities to scientists and engineers who have completed their doctoral studies and who have less than three years of relevant postdoctoral work experience. These fellowships will help launch their careers, provide experience that will enhance their career prospects, and facilitate the recruitment and development of potential leaders for CSIRO.  Postdoctoral Fellows **are appointed for up to three years** and work closely with leading research scientists and engineers in their respective fields. They carry out innovative, impactful research of strategic importance to CSIRO with the possibility of novel and important scientific outcomes and present the findings in international publications and conferences.  Australia’s future minerals, energy and water resources will come from greater depths in the onshore regions and from deep offshore plays. Our ability to find, define and exploit mineral resources is limited by a deep and complex regolith that covers about 80% of the Australian land mass. Undiscovered conventional oil and gas lies in deeper or more subtle traps, or else will come from unconventional sources onshore that require new geophysical methods to quantify. *Deep Earth Imaging* science will help us more precisely image and understand the significance of subsurface rock properties, which in turn will unlock the resource potential of this vast and relatively under-explored continent.  As a part of this effort, we seek two outstanding early career researchers in the broad domains of **Full Waveform Inversion** and **Passive Seismology** as new members of the growing team. Successful candidates will develop innovative seismic imaging methods that use data from dense broadband and short period seismic arrays, large-N seismic arrays and exploration-grade 2D and 3D seismic data from Australia and elsewhere to image the subsurface on multiple scales. |

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| **Duties and Key Result Areas** |
| * Under the direction of a senior research scientist, successful candidates will conduct innovative research aligned with the goals of *Deep Earth Imaging* that ideally lead to novel and important scientific outcomes: * Develop novel seismic imaging methods and use earthquakes and ambient seismic wavefields to image the Australian crust on different scales using continuous and event data from seismic arrays; * Develop and use active source imaging techniques such as full waveform inversion and reverse time migration integrated with petrophysical knowledge. * Undertake regular reviews of relevant literature and intellectual property. * Produce quality scientific and/or engineering papers suitable for publication in quality journals, presentation to clients, and/or applications for patents. * Prepare and present conference papers as agreed with the Theme Leader (Seismic Imaging). * Contribute to the development of innovative concepts and ideas for further research. * Contribute to the effective functioning of the *Deep Earth Imaging* research team and help deliver to CSIRO’s organisational objectives, plans and strategies. * Work collaboratively with colleagues within the *Deep Earth Imaging* team, the Energy Business unit and other CSIRO business units. * 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 a personalised plan developed jointly by the Fellow and the Theme Leader (Seismic Imaging). The program will focus on enhancing the Fellow’s 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; and * Working and collaborating with others. * <http://www.csiro.au/en/Careers/Student-and-graduate-programs/Postdoctoral-fellowships> |

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| **Selection Criteria:** |
| Note: Under CSIRO policy only those who meet all essential criteria can be appointed.  ***Pre-Requisites***   1. **Education/Qualification** A doctorate (or will shortly satisfy the requirements of a PhD) in a relevant discipline such as seismology, computational seismology.   **Please note:** To be eligible for this role you must have **no more than 3 years** of relevant postdoctoral 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.   ***Selection Criteria***   1. Experience in seismic imaging using active and/or passive sources. 2. Demonstrated experience and skill in computer programming. 3. Evidence of high quality written and oral communication skills achieved through high-level reporting, publication, and presentation. 4. **Evidence ability to work effectively as part of a multi-disciplinary, regionally-dispersed research team** 5. **Motivation and self-discipline to conduct independent research.** 6. A record of science innovation and creativity with the ability and willingness to incorporate novel ideas and approaches into scientific investigation.   **Desirable Criteria**   1. Advanced computing skills, with a specific emphasis on high-performance computing. 2. Experience in Bayesian inversion, numerical optimisation and rock physics.   **CSIRO Values:**  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.  To be appointed as a CSIRO Postdoctoral Fellow, candidates must have **submitted** their PhD at the time of commencement as a minimum requirement. If a candidate has submitted, but their PhD has not yet been formally awarded, the Fellow’s starting salary will be CSOF4.1*.* Upon verification via written confirmation that the PhD has been awarded (within a six-month period from date of commencement), the Fellow’s salary will be increased to the negotiated level and the difference will be retroactively back-paid to the Fellow’s start date.  **Other special requirements**  Appointment 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. These may include medical examinations and an international standardised test of English language proficiency. |

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| **Other Information:** |
| **How to Apply**  Please apply via <https://jobs.csiro.au/careers> Search Positions vacant for Reference Number NNNNN. Please load 1 document only (your CV and cover letter) outlining your suitability for the position and your motivation for applying. (Please note: Our system is unable to forward additional separate documents to the selection panel). If you are asked to provide additional information then doing so will enhance your application. Applicants who do not provide the requested information may not be considered further.  If you experience difficulties applying online **call 1300 984 220.** Outside business hours please email: [csiro-careers@csiro.au](mailto:csiro-careers@csiro.au).  **Referees** Please provide the contact details of two academic/professional referees in your resume/CV.  **Contact** If, after reading the selection documentation you require further information, please contact:  Dr Erdinc Saygin via email: erdinc.saygin@csiro.au  Please do not email your application directly to Dr Saygin. Applications received via this method will not be considered.  **About CSIRO** At CSIRO we do the extraordinary every day. We innovate for tomorrow and help improve today – for our customers, all Australians and the world. *We imagine. We collaborate. We innovate.*  **CSIRO Energy** By 2020, CSIRO Energy aims to deliver technology options and science that will enhance Australia’s economic competitiveness and regional energy security while enabling the transition to a lower emissions energy future.  **What CSIRO offers** Successful candidates will join CSIRO’s new *Deep Earth Imaging* Future Science Platform, a team of 18 early career researchers with expertise in geophysics, geology, and data science, together with a leadership team comprising five senior science leaders.  Find out more at <http://www.csiro.au> |