# Postdoctoral Fellowship – CSOF4

Role summary for potential applicants

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| Advertised Job Title**:** | Postdoctoral Fellowship in Long Shelf Life Rice |
| Reference Number**:** | 58442 |
| Classification**:** | CSOF4 |
| Salary Range: | AU $82K to AU $93K plus up to 15.4% superannuation |
| Location**:** | Black Mountain Science and Innovation Park, ACT |
| Tenure: | Specified Term of 2 years |
| Relocation assistance**:** | Will be provided to the successful candidate if required |
| Applications are open to: | Australian Citizens Only  Australian Citizens and Permanent Residents Only   * All Candidates |
| Functional Area**:** | Research Scientist / Engineer - Postdoc |
| % Client Focus - Internal: | 50% |
| % Client Focus - External: | 50% |
| Reports to the: | Dr Qing Liu, Principal Research Scientist |
| Number of Direct Reports: | 4 |

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| **Role Overview:** |
| **Postdoctoral Fellowships** at CSIRO provide opportunities to scientists and engineers who have completed their doctorate and have less than three years 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.  This position is **for up to 24 months** and will work closely with a leading Research Scientist in their respective field. They carry out innovative, impactful research of strategic importance to CSIRO with the possibility of novel and important scientific outcomes. They present the findings in appropriate publications and at conferences.  Rice bran constitutes about 5-10% of brown rice, which is the most nutritious part of a rice grain as it is rich in oil, protein, fibre, vitamins, minerals and highly potent antioxidants. Although the health benefits of consumption of wholegrains are well documented, the level of consumption in some sectors of the community remains low.  Commercial food preparation using rice bran oil or incorporating rice bran in food production is mainly hampered by the poor oxidative stability due to the presence of high level of polyunsaturated fatty acids that are prone to auto-oxidation and responsible for the undesirable rancid smell and bitter taste that renders the bran unsuitable for consumption. CSIRO has generated rice lines with significantly lower levels of polyunsaturates, which could be used for in-depth analysis in terms of oxidative stability and potential impacts on the shelf life of rice bran oil, whole grain brown rice and associated food products. In collaboration with International Rice Research Institute (IRRI), further development of high oxidative stability rice through numerous biotechnological approaches will be evaluated. Further, rice bran contains significant levels of gamma-oryzanol and Vitamin E as important antioxidants. The genetic variation and oxidation-inhibiting effects of these valuable oil-soluble antioxidants on rice bran oil and processed food products derived from whole grain rice/rice bran will be evaluated. The genetic manipulation of gramma-oryzanol biosynthetic pathway will also be explored. Following concept-proof experiments, a non-GM strategy employing a powerful TILLING platform uncovering rice mutants will be carried out in collaboration with the Chinese Academy of Sciences (CAS). In summary, this project aims to develop genetic and processing technologies for oxidatively stable rice bran which could be a feedstock to derive new foods and or food ingredients with health promoting properties. |

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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. * Producing quality research in the area of rice grain quality. * Develop rice plants with enhanced oxidative stability. * Investigate the oxidative stability and metabolic properties of the previously generated high oleic rice. * Undertake regular reviews of relevant literature and patents. * Prepare high quality scientific papers for publication, client reports and patents. * Prepare conference presentations 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. 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 plant physiology, molecular biology and/or biochemistry.   ***Please note:*** *To be eligible for this role you must have* ***no more than 3 years (or part time equivalent)*** *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. **Behaviours:** A history of professional and respectful behaviours and attitudes in a collaborative environment.   ***Essential Criteria:***   1. **Strong background in molecular plant biology or equivalent. Strong background in plant metabolism and biochemistry or equivalent.** 2. **Experience with molecular techniques and/or working with transgenic plants.** 3. **The ability to work effectively as part of a multi-disciplinary team plus the motivation and discipline to carry out autonomous research.** 4. **Proven ability to write with clarity suitable for peer-reviewed journal papers.** 5. **A record of science innovation and creativity, plus the ability and willingness to incorporate novel ideas and approaches into scientific investigations.**   **Desirable Criteria:**   1. Expertise in genome editing technology. 2. Knowledge in antioxidants and plant secondary metabolism. 3. Experience with big data analysis.   **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 ($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.  **Other 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/> and enter requisition number **58442**. Internal applicants please apply via ‘Jobs Central’ in SAP (click ‘Recruitment’)  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 Crispin Howitt via email: Crispin.Howitt@csiro.au  Please do not email your application directly to Dr Howitt. 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).  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/The-CSIRO-Experience/Balance)  **CSIRO Agriculture and Food** is helping Australian farmers and industry improve productivity and sustainability across the agriculture sector. We work directly with farmers and related industries to help us understand the challenges agricultural businesses face, develop a shared vision of how science can make the greatest difference and ultimately deliver practicable solutions.  For more information on CSIRO Agriculture and Food, visit <http://www.csiro.au/en/Research/AF>  **What CSIRO offers you**  This project presents the opportunity to combine basic scientific research in plant molecular biology using a unique set of germplasms to address basic but broad-reaching questions that could result in a tangible applied outcome: long shelf life brown rice and rice bran oil with high oxidative stability.  The CSIRO supervisory team includes young to senior career scientists specialising in wide range of complementary areas including analyses of the wheat grain development, composition and quality. The postdoctoral fellow will also benefit from collaboration with experts in IRRI, and Institute of Botany, Chinese Academy of Sciences, Beijing.  The multidisciplinary team of supervisors will expose the postdoctoral fellow to the latest technologies and knowledge in cereal quality research, as well as giving important insights into intellectual property and impact in the private sector.  The successful candidate will be located in the new state of the art research “Synergy” building at the Black Mountain Science and Innovation Park, which will also host scientists from different research programs, giving plenty of opportunities for productive scientific interactions. Part of the research might be carried out in CSIRO’s Werribee site in Victoria.  CSIRO is Australia prime research organisation, with more than 5000 staff, multiple locations around the country and with research spanning biological, atmospheric, chemical and medical fields. Canberra was chosen “the best place to live in the world” by a survey of the organisation for Economic Co-operation and Development in 2014. Quality of life is high, there is large multicultural diversity and plenty of amazing outdoors opportunities close by. Childcare facilities are available at CSIRO and flexible work arrangements can be requested. |