# Position Details

## Research Projects- CSOF4

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| The following information is for applicants |
| Advertised Job Title | Mechatronic Engineer |
| Job Reference | 92696 |
| Tenure | Specified Term of 3 years Full-time |
| Salary Range | AU$89,680 – AU$101,459 per annum plus up to 15.4% superannuation |
| Location(s) | Clayton, VIC |
| Relocation Assistance | Will be provided to the successful candidate if required |
| Applications are open to | Australian/New Zealand Citizens and Australian Permanent Residents Only |
| Position reports to the | Team Leader, Electrical Connections |
| Client Focus – Internal | 70% |
| Client Focus – External | 30% |
| Number of Direct Reports | 0 |
| Enquire about this job | Contact David Molenaar via email at david.molenaar@csiro.au or phone +61 3 9545 8893 |
| How to apply | Apply online at <https://jobs.csiro.au/> Internal applicants please apply via **Jobs Central**If you experience difficulties when applying, please email careers.online@csiro.au or call 1300 984 220. |

**Acknowledgement of Country**

CSIRO acknowledges the Traditional Owners of the land, sea and waters, of the areas that we live and work on across Australia. We acknowledge their continuing connection to their culture and pay our respects to their Elders past and present. View our [vision towards reconciliation](https://www.csiro.au/en/about/Indigenous-engagement/Reconciliation-Action-Plan).

**Child Safety**

CSIRO is committed to the safety and wellbeing of all children and young people involved in our activities and programs. View our [Child Safe Policy](https://www.csiro.au/en/about/policies/child-safe-policy).

### Role Overview

The role of Research Projects staff in CSIRO is to collaborate in scientific and technological activities with other research staff usually by assisting with detailed planning, undertaking or assisting with experimental, observational or technology development work, and in carrying out the more practical aspects of the work.

CSIRO Mineral Resources works closely with industry partners to deliver innovation to grow Australia's resource base, increase mining productivity and drive the industry's social and environmental performance for the benefit of the nation.

The role of Mechatronic Engineer is to support a growth area that has capacity to deliver a significant future IP&L revenue stream to the CSIRO Mineral Resources Processing Program via the ‘Shorts Mitigation Device technology’ amongst others. There are a several core technologies being developed, and a large number of opportunities being progressed with multiple clients in Australia and overseas across aluminium, copper, nickel, zinc and titanium commodities, with a mix of high-value add consulting, contracted experimental testing and longer-term co-investment prototype development and testing.

The role is central to ‘digitalising’ CSIRO’s unique global expertise in the Energy Efficient Electrical Connections ‘Domain’ for which we are presently global leaders. It will also be a key role to developing CSIRO’s ‘Intelligent Leaching Column Facilities’, which will become best-in-class and enables the deployment of the CSIRO patented VESITM solid-state sensing technology to be applied to significant global issues in low-grade ore processing, e-waste recycling and mine-site remediation (acid rock/mine drainage).

### Duties and Key Result Areas

* Design and construction of mechanical & electrical prototypes for industry deployment (trials).
* Oversee the Mechatronic, Electronic and Software components of externally sub-contracted works for prototype development.
* Support the Mechanical and Electrical engineering design of novel, complex experimental rigs, especially the data acquisition and control systems, including programming.
* Data analysis including economic modelling, experimental design using detailed statistical methods, and report writing including preparation of papers and presentations for industry engagement.
* Provide client on-site support for measurement campaigns and identification of follow-up opportunities.
* Day-to-day running of the laboratory including execution of larger scale experimental work, programming and adaptation of the control systems for new experimental campaigns, co-ordination of all maintenance and contractor works, facilitation of industry and V.I.P. visits to the laboratory.
* Undertake a wide variety of tasks or tasks with a high degree of specialisation.
* Show initiative to seek new approaches to meet experimental or technological needs when encountering new problems where methods are not defined.
* Liaise with clients to determine their needs and take personal responsibility for their satisfaction.
* Address problems promptly and in a constructive manner.
* Participate in planning projects and accept responsibility for scheduling and completion of major parts of the project, including evaluation of options, experimental design, data collection and analysis, user and customer research, user experience and/or software design, implementation and delivery,
* Make significant contributions to the interpretation and communication of research or technological results and may collaborate on drafting presentations to, and/or detailed written reports for, clients and the scientific and/or technology community.
* Communicate openly, effectively and respectfully with all staff, clients and suppliers in the interests of good business practice, collaboration and enhancement of CSIRO’s reputation.
* Work collaboratively as part of a multi-disciplinary research team to carry out tasks in support of CSIRO’s scientific objectives.
* Adhere to the spirit and practice of CSIRO’s Values, Code of Conduct, Health, Safety and Environment procedures and policy and diversity initiatives.
* Other duties as directed.

## **Selection Criteria**

#### Essential

*Under CSIRO policy only those who meet all essential criteria can be appointed.*

1. A bachelor’s degree in Mechatronic or Electronics Engineering.
2. Minimum four (4) years of demonstrated professional engineering experience deploying mechatronic and electronic engineering concepts for real-world projects, including experience with, for example:
	1. Electronics fast prototyping with microcontroller development boards, e.g., STM32, ESP and Arduino.
	2. Firmware and driver development for microcontrollers in C, use of vendor HALs and RTOS (optional).
	3. Interfacing with a variety of sensors and actuators including multi-device/distributed architectures and knowledge of Modbus or similar protocols.
	4. Circuit design, in Altium or similar, from ideation to PCB routing and fabrication.
	5. Scripting languages (e.g., Python) for testing, data analysis and web interface.
3. Strong communication skills, both orally and in writing, offering factual information supported by data, definitions, examples, illustrations or other aids, which will assist in conveying meaning.
4. Demonstrated problem solving skills, and ability to investigate the underlying issues of complex and ill-defined problems, and develop appropriate responses by adapting/creating and testing alternative solutions.
5. Demonstrated ability to work agilely and effectively as part of both large and small multi-disciplinary teams, and willingness to proactively seek and consider the ideas and opinions of others from within and outside the team to help form decisions, plans or actions.

## **Desirable**

1. Demonstrated ability to train, instruct, or supervise other staff to complete allocated tasks and activities.
2. Work experience in industrial and/or research environment, in sectors such as minerals, materials, chemicals and energy.
3. Experience with analog circuit design.
4. Experience with National Instruments Hardware and LabVIEW environment.
5. A passion for developing scientific and engineering knowledge for the benefit of Australia.

## **Required Competencies**

* **Teamwork and Collaboration:** Cooperates with others to achieve organisational objectives and may share team resources in order to do this. Collaborates with other teams as well as industry colleagues.
* **Influence and Communication:** Uses knowledge of other party's priorities and adapts presentations or discussions to appeal to the interests and level of the audience. Anticipates and prepares for others’ reactions.
* **Resource Management/Leadership:** Allocates activities, directs tasks and manages resources to meet objectives. Provides coaching and on the job training, recognises and supports staff achievements and fosters open communication in the team.
* **Judgement and Problem Solving:** Investigates underlying issues of complex and ill-defined problems and develops appropriate response by adapting/creating and testing alternative solutions.
* **Independence:** Recognise and makes immediate changes to improve performance (faster, better, lower cost, more efficiently, better quality, improved client satisfaction).
* **Adaptability:**Copes with ambiguity or situations that lack clarity. Adapts readily to changing circumstances and new responsibilities (which may include activities outside own preferences) in the interests of achieving team objectives. Recognises the need for and undertakes personal development as a result of changes.

Special Requirements

Appointment to this role is subject to provision of a pre-employment background check and may be subject to other security/medical/character clearance requirements.

* The successful candidate will undertake a **pre-employment background check**. Please note that individuals with criminal records are not automatically deemed ineligible. Each application will be considered on its merits.
* The successful candidate will be required to undertake a **pre-employment medical examination** prior to commencement. Please note that the successful candidate must be willing and able to carry out fieldwork domestically and internationally when required, in mine-sites and metals production environments, and they should be able to pass a full industrial mine-site medical with zero medical restrictions.
* This role has child safety obligations. Accordingly, the successful candidate will be required to obtain and provide evidence that they hold a **valid paid/employee (not volunteer) Working with Children/ Vulnerable People Check** prior to confirmation of appointment.

## **About CSIRO**

We solve the greatest challenges through innovative science and technology. To find out more visit us [online](http://www.csiro.au/)!

CSIRO is a values-based organisation.  In your application and at interview you will need to demonstrate behaviours aligned to our values of:

* 1. People First
	2. Further Together
	3. Making it Real
	4. Trusted

Find out more about CSIRO [Mineral Resources](https://www.csiro.au/en/Research/MRF)