# Position Description

## Research Scientist/Engineer – CSOF5

The following information is for applicants

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| Advertised Job Title**:** | Research Scientist |
| Job Reference: | 60181 |
| Relocation Assistance**:** | Will be provided to the successful candidate if required. |
| Applications Are Open To: | Open to all Candidates  *For Specified Term positions, we will accept applications from Temporary Residents with working rights for the length of the term, who do not require sponsorship.* |
| Percentage of Client Focus - Internal: | 20% |
| Percentage of Client Focus - External: | 80% |
| Reports to the: | Team Leader |
| Number of Direct Reports: | 0 |
| Name and Contact Details For Applicant Enquiries | Jin-Soo Kim via email: [Jin-Soo.Kim@csiro.au](mailto:Jin-Soo.Kim@csiro.au)  *Please do not email your application directly to Mr Kim. Applications received via this method may not be considered by the selection panel.* |
| Contact Details For Applying | Call 1300 984 220 or email [careers.online@csiro.au](mailto:careers.online@csiro.au). |
| How to Apply: | Please apply online at [jobs.csiro.au](https://jobs.csiro.au/) and enter the requisition number**.** Internal applicants please apply via ‘Jobs Central’ through the ‘People Hub’ icon |

## Role Overview:

The role of Research Scientist Staff in CSIRO is to conduct innovative research leading to scientific achievements that are aligned with CSIRO’s strategies. You may be engaged in scientific activity ranging from fundamental research to the investigation of specific industry or community problems. You will have the opportunity to build and maintain networks, play a lead role in securing project funds, provide scientific leadership and pursue new ideas and approaches that create new concepts.

The role is to enhance the scientific capabilities of CSIRO solar group in CST (Concentrated Solar Thermal) area and to support its commercialisation activities. This will include the modelling and experimental investigation of solar collector systems (such as heliostat field and receiver), optimisation of their efficiencies and investigation of novel approaches for the design of solar plants.

The research project is mostly funded by ASTRI ([Australian Solar Thermal Research Initiative](http://www.astri.org.au/)), which advances the research on solar thermal technologies in Australia and aims at a substantial reduction of costs to harness solar energy

## Duties and Key Result Areas:

* Numerical modelling and optimisation of CST subsystems such as heliostat field optics and receiver geometry.
* Numerical modelling and experimental investigation of hydrodynamics and heat transfer associated with solar receivers and heat exchangers.
* Assist with the development of CSIRO’s proprietary CST software tools:
* HelioControl (heliostat field control and calibration system),
* Heliosim (integrated heliostat field and receiver modelling and optimisation software).
* Incorporate novel approaches to scientific investigations by adapting and/or developing original concepts and ideas for new, existing and further research.
* Communicate effectively and respectfully in the interests of good business practice, collaboration and enhancement of CSIRO’s reputation.
* Produce high quality scientific and/or engineering papers suitable for publication in quality journals and for presentation at national and international conferences.
* Work effectively as part of a multi-disciplinary, often regionally dispersed research team, to undertake independent scientific investigations and carry out associated tasks under the guidance of more senior Research Scientists/Engineers.
* Under the guidance of Senior Research Scientists/ Engineers, work collaboratively and honestly with internal and external colleagues, clients and partners to help define and satisfy objectives for small to medium research projects.
* Assist in leading small research projects, including the negotiation of resource requirements.
* Provide coaching and on-the-job training to technical staff and students to ensure experiments are established in accordance with research design.
* Adhere to the spirit and practice of CSIRO’s Values, Health, Safety and Environment plans and policies, Diversity initiatives and Zero Harm goals.
* Other duties as directed by the Research Group Leader

## Competencies:

1. **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.**
2. **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.**
3. **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.**
4. **Judgement and Problem Solving:** Investigates underlying issues of complex and ill-defined problems and develops appropriate response by adapting/creating and testing alternative solutions.
5. **Independence: Plans, sets and works to meet challenging standards and goals for self and/or others. Recognises where endeavours will make the most impact or difference, decides on desired outcome and sets realistic goals to reach this target.**
6. **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.

## Selection Criteria:

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

* A doctorate and/or equivalent research or industry related experience in a relevant discipline area, such as engineering, physics or computer science
* Experience with conjugate heat transfer systems involving radiation, convection and conduction
* Familiarity with numerical methods and optimisation algorithms
* Strong proficiency in scientific computer coding
* **The ability to work effectively as part of a multi-disciplinary, regionally dispersed research team, and carry out independent individual research, to achieve organisational goals.**
* A record of science innovation and creativity plus the ability & willingness to incorporate novel ideas and approaches into scientific investigations.

**Desirable Criteria:**

* Experience with numerical (e.g. ray tracing) and/or analytical radiation transfer simulation techniques
* Experience with modelling (e.g. CFD) and/or experimental investigation of multiphase flow and heat transfer
* Experience in the development of professional computer software (preferably C++)

## Special Requirements:

Appointment to this role may be subject to conditions including security/national police/medical/character clearance requirements. Applicants who are not Australian Citizens or Permanent Residents may be required to undergo additional security clearances, which may include medical examinations and an international standardised test of English language proficiency (i.e. IELTS test).- <https://ielts.com.au/>

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