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Department:
Science and Innovation
REPUBLIC OF SOUTH AFRICA



CSIR

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Call For Proposals

CSIR Photonics Centre's Rental Pool Programme 2025/26

The CSIR Photonics Centre's Rental Pool Programme (RPP) is funded through a grant received by the CSIR from the Department of Science and Innovation (DSI). The purpose of the fund is to stimulate and grow laser and laser-based applications research and development programmes within the South African research environment, to increase capacity in the National System of Innovation and to support the next generation of researchers in photonics-based technologies. The programme focuses on supporting laser-related research in all fields of natural sciences, engineering and health sciences. The fund allows access to equipment for use at the host institution of the applicant or for access to equipment housed at the CSIR Photonics Centre facilities.

The CSIR is inviting researchers employed at public universities and universities of technology in South Africa to participate and apply for funding to support their laser-related research programmes in the 2025/2026 financial and academic years. Researchers have the opportunity to submit a multi-year project proposal with a maximum duration of three years. Contracting with successful proposers will be done on an annual basis, with continued funding after year one of the projects subject to the submission and approval of an annual progress report. Grant holders with an approved multi-year project need not to re-apply. However, a detailed progress report is required to ensure the continuation of the project.

The fund makes provision for research-related costs, including:

1. Upgrading of existing laser equipment to ensure suitability for the proposed project;
2. Covering delivery and set-up charges of equipment received on loan from the CSIR at the university's facilities;
3. Procuring new equipment (including smaller diagnostic equipment) and laser-related consumables to support the proposed research project;
4. Covering maintenance costs for CSIR-owned equipment placed at the university's facilities; and
5. Accessing research and technical support provided by the CSIR in support of an approved application.

Consumables will remain the property of the grant holder's institution and will assist in establishing in-house laser infrastructure. The CSIR RPP grant scheme also makes provision for the replacement of older equipment.

The CSIR RPP grant scheme is only available to researchers employed at South African universities. The CSIR Rental Pool Programme application manual outlines the focus, eligibility criteria and review processes. Applications will be evaluated in line with the CSIR policies on equity and redress.

Researchers in all scientific and engineering disciplines who use laser technology in their research programmes are encouraged to apply. In the laser-based manufacturing field, applications aligned with the CSIR's research programmes in Additive Manufacturing and Laser Surface Engineering will receive preference.

Call opens: Monday, 16 September 2024

Call closes: Friday, 25 October 2024

Applications must be submitted electronically to CSIR Photonics Centre at nlcrentalpool@csir.co.za or tiduplooy@csir.co.za.

Applicants must ensure that all additional documents, as identified in the proposal template, are submitted with their application to CSIR Photonics Centre at nlcrentalpool@csir.co.za or tiduplooy@csir.co.za

Please direct all queries to:

Thomas du Plooy

CSIR Photonics Centre

Tel: [012 841 3511](tel:0128413511)

Cell: [082 443 1128](tel:0824431128)

Email: nlcrentalpool@csir.co.za or tiduplooy@csir.co.za



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Call for Applications Manual

2025 CSIR Photonics Centre Rental Pool Programme

September 2024

Supported by the



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PART 1: Introduction

1.1 Purpose

This manual provides information on opportunities for funding within the CSIR Photonics Centre's Rental Pool Programme (RPP) Grant Scheme.

The manual is intended to be an easy reference guide to the CSIR Photonics Centre RPP Grant Scheme and to assist potential participants in accessing the available funding. It does not, however, include a complete set of policies, procedures or systems supporting the programme.

1.2 Background

At the establishment of the CSIR Photonics Centre (previously known as the CSIR National Laser Centre) in 2000, the Centre started a laser equipment access programme now funded by the Department of Science and Innovation. The RPP provides higher education institutions (HEIs) in South Africa the opportunity to access several laser systems, laser diagnostic equipment and laser laboratories available at or from the CSIR Photonics Centre. In subsequent years, the equipment programme grew, and, through the careful management of allocated funding, the equipment base could be expanded and maintained.

Through a grant from the Department of Science and Innovation, the CSIR Photonics Centre has again made funding available to support the CSIR RPP. This will support HEI research, specifically within the multi-disciplinary laser environment in 2025.

1.3 Strategic intent

The programme's aim is to support laser- and laser-based application research in South Africa, and to develop, encourage and support a unique programme to build and grow a sustainable corps of expert researchers in South Africa utilising laser technology in their research programmes. The objectives of the programme are to:

- Stimulate and support research at South African HEIs in laser-related research, in all research fields.
- Render technical and scientific support to RPP participants at the HEIs.
- Support the development of the next generation of scientists/engineers to rejuvenate and strengthen the ageing South African scientific and engineering community.
- Encourage research collaboration.
- Effectively manage and expand the CSIR Photonics Centre RPP.

PART 2: Call, Eligibility, Funding and Timelines

2.1 Call for applications

The call for the CSIR Photonics Centre RPP funding is facilitated through the RPP office hosted by the National Programmes group at the CSIR Photonics Centre. A template for new applications is distributed by this office to interested parties via the CSIR website, the CSIR Photonics Centre's database of contacts as well as through the research offices of all South African universities and universities of technology.

Proposals in response to this call must be forwarded to the CSIR Photonics Centre's National Programmes project office at tiduplooy@csir.co.za and nlcrentalpool@csir.co.za.

The scientific and technical contents of the proposed project will be refereed through a peer-review mechanism to assess the quality of the proposed research plan, human capital development potential and alignment with national priorities. Applications must be comprehensive to allow proper assessment of the research proposed.

Applicants are encouraged to approach the CSIR Photonics Centre for assistance with the completion of the application, specifically with reference to gathering information on equipment availability, pricing and the suitability of equipment.

For applications to access the high-power laser equipment at the CSIR Photonics Centre's Laser Enabled Manufacturing group, preference will be given to proposals aligned with the Photonics Centre's research programmes in additive manufacturing and laser surface engineering.

2.2 Funding

The programme allows access to equipment at the CSIR Photonics Centre facilities and equipment rental for use at the researcher's university laboratories. The programme also provides for the upgrading of existing equipment to ensure suitability for the proposed project. In summary, the grant funds the following activities:

- Preparation and upgrade of equipment approved within the programme.
- Maintenance of equipment supported by the CSIR RPP.
- Delivery, setup and return cost of equipment where necessary.
- Technical or scientific support from the CSIR Photonics Centre staff.
- Insurance costs for CSIR-owned equipment while at the HEI.
- Travel and accommodation costs are **limited to** travelling to CSIR Photonics Centre laboratories or facilities at HEIs where CSIR RPP equipment is hosted to access equipment in approved research projects.
- Accommodation and travel support for attendance of annual RPP Review Meeting (if applicable). Grant holders and their students who are involved in the supported project are required to attend this compulsory reporting session.
- New laser or ancillary equipment required to support research activities.

- Consumables required for research activities, **limited to** optics and other laser-based consumables to support the research project proposed.

Each project will be eligible for new ancillary equipment (smaller diagnostic equipment) to a maximum value of R100 000 and laser-related consumables to a maximum value of R75 000, **subject to funding availability**. Consumables will remain the property of the grant holder's institution and will assist in establishing in-house laser infrastructure.

All of the abovementioned costs will form the budget of each grant holder based on the equipment they request for their laboratories.

2.3 Timeline

The timelines for the CSIR Photonics Centre RPP Grant Scheme call is shown in **Table 1**. Also listed in this table are the expected dates for the outcomes' announcement of the applications.

Table 1: Call & outcomes' announcement

Call	Open	Close	Outcomes Announcement
2025	16 September 2024	25 October 2024	31 March 2025

2.4 Eligibility criteria

Researchers from all HEIs (public universities) may participate in the CSIR Photonics Centre RPP Grant Scheme.

The programme considers applications from researchers who are:

- Involved in laser-based research in any field in natural science, engineering and health sciences.
- Hold at least a master's degree and have a reasonable research track record.
- Employed at South African HEIs on a full-time permanent or full-time contract basis. If on contract basis, the length of the contract should at least be for the duration of the research project applied for and be clearly indicated in the application.

Participation of post-graduate students (doctoral and master's students as key drivers), registered at a recognised South African HEI, is critical, as are collaborations with other researchers based at the applicant's institution and other institutions. These should be stated clearly by the researcher in the application. Although student involvement is a priority, the primary motivation for the research grant is to **address a specific research question**. Proposals which requests funding support merely for student training will not be considered.

2.5 Duration of the grant

Researchers can apply for a multi-year project, with a maximum duration of three years.

Contracting with successful applicants happens annually from 1 April to 31 March of the next year. Continuation funding for a second or a third year for approved projects can only be considered based on the submission of a comprehensive annual progress report at the end of each year of the project. Continuation is subject to the progress reported in the annual progress report, the quality of the annual progress report and the presentation made at the RPP grant holders feedback meeting arranged towards the end of each funding year, usually around end January / beginning February of the year of funding.

Continuation beyond the first three years can be considered if a new funding application is submitted to support a continued research programme.

2.6 Assessment process

All applications received by the CSIR Photonics Centre will be submitted to an independent review panel appointed by the CSIR Photonics Centre. The purpose of the review panel is to provide an assessment of the quality of the proposals received, and to recommend to the CSIR Photonics Centre whether proposals should be funded. The panel will consist of experts from industry, universities and international members. The assessment will primarily focus on scientific merit, capacity building, output, and impact as presented in the proposal. **Applicants are encouraged to ensure that all the necessary information is captured in the proposal that is required for the review panel to do a fair assessment of the proposed work.**

Continuation applications will also be assessed on progress, hence progress reports submitted to the CSIR Photonics Centre will form part of the application and evaluation process.

It will be expected that applicants present new applications to the RPP to present their research proposal to the independent review panel in February 2025. This presentation usually happens through a virtual platform such as Ms Teams, however, where necessary, the CSIR will provide mobility support to applicants that made the shortlist for projects to be reviewed by the independent review panel.

The following aspects are important considerations when submitting an RPP application.

2.6.1 Quality of the RPP application

*Applicants are strongly discouraged, and warned, not to commit plagiarism in the preparation of CSIR RPP project proposals, or in the reporting of work completed. The review process has recently picked up an increase in this grievous transgression. The Merriam-Webster dictionary defines **Plagiarize** as “to steal and pass off (the ideas or words of another) as one's own: use (another's production) without crediting the source”¹. Applications found to contain plagiarised passages will immediately be disqualified.*

*Applicants are **STRONGLY** discouraged to copy and paste large section of text from previous applications or progress reports. The peer-review panel notices this and regards this as an indication that applicants are not respecting the peer-review process. Applicants and document authors are encouraged to rather keep the inputs and discussion short and relevant to the section that they are completing, without the generating large amounts of text.*

Applicants are also encouraged to follow the instructions in the proposal or the annual progress report templates meticulously, to ensure that the review panel has the correct information available when assessing the information provided. Assessment of new applications or progress reports will only be based on the written text as found in the proposal or annual progress report, as supported by the presentation made on the new application or on the progress reported.

¹<https://www.merriam-webster.com/dictionary/plagiarize>

2.6.2 Management plan

The management plan submitted as part of the application must be a clear executable plan for the project. The following aspects must be addressed and should be clear when reviewing the management plan:

- The plan must include defined major project activities that will be executed as part of the project plan.
- For each activity, a start and end date must be provided.
- Resources (collaborators, team members, students and equipment) must be assigned to each of the defined activities.
- Each of the activities should also have a clearly defined deliverable.
- It is a requirement that a detailed Gantt chart, which corresponds to the management plan, is submitted as part of the application.

The management plan should also address any equipment-related activities, including specific maintenance requirements that need to be highlighted to the CSIR, as well as contingency planning around equipment breakdowns. The CSIR will take responsibility for major repair and maintenance tasks. It is expected from the grant holders and the institutions

to plan and provide routine maintenance services on equipment provided as part of the grant.

2.6.3 Scientific merit

This section should clearly articulate the main research question that the proposed work intends to address. The section must support and reflect a detailed description of the scientific background and demonstrate through the proposed research a high level of scientific and technical excellence. Scientific outputs and impact must be qualified.

In progress reports, grant holders and applicants are encouraged to list publications submitted but not yet accepted for publication, to provide the review panel with an accurate view of progress on the project.

Through the review of proposals and progress reports and investigating the type of journals and publications reported by applicants and grant holders to the programme, the CSIR has noted that some researchers elect to publish their work in predatory journals which have questionable peer-review processes in place. Although this may boost the number of published peer-review papers, the research efforts must be designed and constructed based on peer review in reputable scientific journals with ethically sound review processes in place.

2.6.4 Collaborations

The proposal format requires the applicant to provide detailed information on collaborations that will support the proposed project. A list of collaborators should be included, which clearly articulates the contribution of each of the collaborators to the programme. The information provided must be presented in such a way that will allow reviewers to assess the expertise and experience of the listed collaborators.

It is important to list all the members of the research team who constitute this collaboration. Be sure to highlight the PI track record, staff involvement, student involvement, postdocs, technical support and external collaborations (institutional, regionally, nationally and internationally).

2.6.5 Human capital development

In the section on human capital development, the applicant must list all students who will work on the project. It is **compulsory** to identify the main supervisor (and co-supervisor, if applicable), as well as provide the thesis or research project title on which the student is working. Generic thesis titles or research project titles are not acceptable.

Attention should be given to reflect on student demographics accurately. The applicant is expected to demonstrate that this project will actively seek to involve South African black and female students.

2.6.6 Relevance, impact and commercialisation

The proposal should clearly articulate the scientific, social, economic and environmental relevance and impact of the proposed work.

The proposal should provide information on the PI's plan for commercialisation for the research undertaken. The proposal should also describe a commercialisation route and identify possible commercialisation partners.

Even if there is no formal commercialisation strategy or commercialisation plan for the proposed work, applicants are encouraged to offer some evidence that commercialisation of the technology is being considered. This evidence can be direct or indirect or even anecdotal, indicating that there is some consideration for commercialisation of the technology. **Leaving this section of the proposal blank is not acceptable.**

2.7 Laser safety

Laser safety is of the utmost importance. The proposal should clearly nominate a laser safety officer, and plans around laser safety should be included in the management plan section of the proposal. For successful applicants, it will be expected that:

- A permanent member of the research team be assigned the role of laser safety officer;
- The nominated laser safety officer must be trained;
- All equipment users, including students, are provided with laser safety training.

It is expected that laboratories at universities that house CSIR-owned equipment are carefully managed from a safety, health and environmental perspective. Risk assessments and risk monitoring practices must be established, up to date and managed.

2.8 Proposal assessment criteria

Assessment criteria will be used to maintain consistency during the assessment of research proposals, each criterion is assigned a weight (see [Table 2](#)).

For new applications:

Table 2: Assessment criteria

Criterion	Details	Weight
Management Plan 15%	Feasibility & efficiency of management plan	10%
	Presentation of the proposal	5%
Scientific Merit 40%	Scientific/technical excellence	15%
	Scientific impact/outputs	25%
HR Development 25%	Research students and Post-Doctoral Fellows	5%
	Black & female students	15%
	PI track record	5%
Collaboration Network 10%	National, regional and intra-institutional network	6%
	International network	4%
Relevance & Impact 10%	Scientific, social, economic and environmental impact	4%
	Commercialisation plan	6%

For annual progress reports:

Table 3: Assessment criteria

Criterion	Details	Weight
Project Progress 15%	Project progress with regards to original or amended project schedule	10%
	Quality of the progress report and quality of the progress report presentation.	5%
Scientific Merit 40%	Scientific/technical excellence	15%
	Scientific impact/outputs	25%
HR Development 25%	Research students and Post-Doctoral Fellows	5%
	Black & female students	15%
	PI track record	5%
Collaboration Network 10%	National, regional and intra-institutional network	6%
	International network	4%
Relevance & Impact 10%	Scientific, social, economic and environmental impact	4%
	Commercialisation plan	6%

Based on the recommendations from the review panel, the CSIR Photonics Centre will allocate budget, rank the proposals received and make a decision on the projects that will be funded in the next funding cycle.

2.9 General comments

It is important that proposals submitted are concise, and only provide information relevant to what is requested in the proposal template. Information provided must, however, be comprehensive, to allow the reviewers an opportunity to assess the potential of the proposal accurately. The review team will assess proposals on what is written in the proposal / annual progress document only, as supported by the presentation made by the grant holder's applicant.

Applicants and grant holders should also respect the review process and the CSIR-appointed review panel. Applicants and grant holders are encouraged to not copy and paste sections from one part of the proposal or annual progress report to another.

PART 3: MANAGEMENT OF GRANT AND EQUIPMENT

3.1 Contracting

For approved projects, a CSIR Rental Pool Grant contract will be established that contains the clauses and requirements for the management of the grant. The contract addresses responsibilities, intellectual property issues, ownership of the equipment, and the financial arrangements associated with the project. The contract is between the CSIR Photonics Centre and the host institution of the applicant.

The contract will be annual. It will be renewed annually through a new contract or a contract amendment for the funding allocation in subsequent years, **subject to the submission of an annual progress report, as well as a favourable review of the progress report.**

3.2 Reporting and use of equipment

On accepting the award (signing the contract), the grant holder must deliver on the annual research plan that formed part of the accepted application. An annual review meeting is scheduled at which all grant holders are required to report on progress. Meeting attendance is compulsory.

At the end of the calendar year, the grant holder will be required to prepare and submit an annual progress report on the project to the CSIR Photonics Centre. The report must address project progress, delivery of milestones, project outputs and outcomes as presented in the research plan. In instances where the original project application was a multi-year proposal, the annual progress report will be used in an evaluation process to determine whether the project will continue in the next financial year.

3.3 Payment of grants

The CSIR Photonics Centre will take responsibility for the acquisition of new equipment, shipment of equipment to universities, and the installation and maintenance of the equipment supplied under the agreement. Claims for payments of travel costs, consumables, and small auxiliary equipment approved as part of the project should be submitted to the CSIR Photonics Centre for payment. Claims should be submitted as an invoice, with associated proof of expenses for the attention of Mr Thomas du Plooy (tiduplooy@csir.co.za).

Invoices for payments should be addressed to:
The CSIR Photonics Centre
PO Box 395
Pretoria
0001

All invoices should reflect the CSIR's VAT number, i.e. 4470114283.

All invoices should also reflect the unique reference number assigned to the project, and available on the Rental Pool Grant contract or from the CSIR Photonics Centre.

No payments will be processed unless proof of expenses accompanies the invoice submitted to the CSIR Photonics Centre.

3.4 Assistance

Should you require clarification on any of the processes, criteria or plans presented in this manual, please do not hesitate to contact Thomas du Plooy at 012 841 3511 or 082 443 1128 or email nlcrentalpool@csir.co.za.

Appendix 1

A list of equipment accessible at the CSIR Photonics Centre facility.

Nd: YAG pulsed lasers
Nd: YAG laser ablation system for material processing applications (DML40S – Deckel Maho Gildemeister)
5kW IPG fibre laser system with robot manipulation (for laser material processing)
CW CO ₂ lasers (up to 100W)
LENS 850 R additive manufacturing system
5kW CO ₂ laser system (for laser materials processing)
Laser systems for spectroscopy
Low-output visible lasers
Low-output near-infrared lasers
Clark Femto Second Laser System (1mJ, 1 kHz)

Appendix 2

CSIR Photonics Centre research focus areas in 2024/2025.

Biophotonics research, with a focus on point-of-care diagnostics for HIV, Malaria, TB and other diseases.
Solid-state laser development research (1 and 2 micron source development)
Laser materials processing research (additive manufacturing, laser welding/cladding, Laser-based surface engineering technologies)