



2007 Manual
Nanotechnology Flagship Programme

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1. Introduction

The *South African Nanotechnology Strategy* addresses itself to the opportunities presented by this new wave of technology and seeks to strengthen the integrated development focus of Government. The *Strategy* takes cognisance of the needs of local industry and society and compliments the national technology missions that have been identified in the *National R&D Strategy*. It focuses on essential building blocks of nanoscience which are synthesis, characterisation and fabrication. Nanotechnology and nanoscience in South Africa would create opportunities for human capital development, particularly for designate groups that have been historically disadvantaged.

Government realizes the need for South Africa to optimally share in the benefits of nanotechnology and thus enhance its global competitiveness and sustainable economic growth. To this end, the DST has outlined the implementation plan (and support mechanisms) for the ultimate realization of the strategic objectives. A programme of flagship projects has been identified as part of this implementation plan. Its purpose is to demonstrate the benefits of nanotechnology and nanoscience and its impact on some of the key challenges facing South Africa.

Driven by the main objectives of the *National R&D Strategy*, which are to enhance quality of life and increase economic growth, the Nanotechnology Flagship Programme (NFP) should target relevant impact areas. Considering the status of nanotechnology in the world and how South Africa relates to it and the needs and opportunities identified, the areas where nanotechnology can generate most benefits for South Africa can be grouped into the following six focus areas as identified in the *South African Nanotechnology Strategy*:

- Water
- Energy
- Health
- Chemical and Bio-Processing
- Mining and Minerals

- Advanced Materials and Manufacturing.

2. Objectives

Amongst others, the precise objectives of the NFP are to:

- Develop human resource capacity that focuses on Historically Disadvantaged Institutions (HDIs), women and people with disabilities;
- Accelerate national efforts to build excellence in research and development capacity;
- Attract and retain young scientists and professionals of the highest caliber; and
- Support young scientists and professionals in basic and applied research, and promotion of innovation.

3. Scope of Work

The NFP grants will fund large, collaborative and/or multidisciplinary research projects. Such grants will be available to institutions with a mandate of increasing scale and focus or bringing together complementary expertise.

Projects funded by the NFP will be grouped into two development clusters as identified in the *South African Nanotechnology Strategy*: industrial (mining and minerals, chemical and bio-processing and materials and manufacturing) and social (water, health, energy).

3.1 Who can apply?

All researchers who hold a doctoral degree and who are attached to any of the following organizations are eligible to apply:

- South African universities,
- National research laboratories such as the Science Councils, other government laboratories, the national facilities, and
- Museums

3.2 Institutional Responsibility

Institutions submitting applications for funding are required to:

- Approve and authorize all applications submitted, through the institutional management structure, and demonstrate their support to the project.

3.3 Grant Conditions

In order for the proposal to be accepted as one that qualifies to go through the evaluation process, it should meet the following conditions:

- Continuation projects: Progress report at the end of each financial year. The report should provide information on progress against the agreed set of performance indicators, output measures and revised budgets. The report will also provide justification for the continuation of funding.

3.4 Proposal Requirements

For the proposal to be considered, it should have the following information:

- The proposal must include institutional support and commitment for the project.
- Demonstrate international exposure for young researchers.
- Indicate how the project will be used to attract foreign skills in Nanoscience and technology.

3.5 Evaluation Process

Below are the criteria and weights that will be used by the NRF to select proposals for funding:

Evaluation Criteria

Criterion	Details	Weight
Scientific Merit and research team 30%	Scientific/technical excellence	15%
	Research team track record	15%
HR Development 50%	Training of Research students and Post-Doctoral Fellows	10%
	Black & female students	20%
	Research students and Post-doctoral Fellows international exposure	10%
	Harnessing international expertise	10%
Alignment with the Flagship objectives 20%	Scientific, Social, Economic and Environmental impact	10%
	Potential outputs	10%

4. How to apply

The call for the NFP application will be open for a two months period, i.e. **1 September 2007 to 30 October 2007**. The application which is posted as an MS Word can be downloaded from the NRF website, www.nrf.ac.za/nanoflagship. All sections of the form must be completed.

Two copies of the form should then be return back to the NRF:

- One copy of the completed form should be forwarded to the NRF via the university Research Office, complete with required signatures.
- The other copy should be an e-mail version of the original emailed to Mrs. Lorraine Smith at lsmith@nrf.ac.za

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5. Funding

While there is no set limitation on the maximum or minimum that applicants can apply for, it is anticipated that each flagship project will be funded for three years at around R1-1.5 million per annum and continued funding will be subject to a review of the project achievements and outputs. The funds can be used to cover costs associated with:

- Student support (no part time students will be considered)
 - Masters
 - PhD
 - Post Doctoral
 - Student assistantships

LEVEL	VALUE OF SUPPORT (p/a)	MAX PERIOD OF SUPPORT (years)
Student Assistantships		
Final year undergraduate degree/diploma	R 6 000	1
4 th year BTech/Honours	R 20 000	1
Bursaries		
Master's	R 40 000	2
Doctoral	R 60 000	3
Fellowships		
Post-Doctoral Fellowships	R 80 000	2

- Sabbatical – the contribution is R10 000 per month for a maximum period of 6 months.
- Public awareness – an amount of up to R50 000 can be awarded for public awareness activities which are expected to be done in collaboration with SAASTA. The project leaders are required to involve SAASTA in marketing of

the programme in their regions. A plan for such marketing should be outlined in the proposal.

- Research Equipment – requests only up to R100 000 will be considered.

- **Project costs**

These costs include research materials and supplies, and local travel costs (although local travel costs are applied for separately in the application). Justification of expenses must be clearly discernible from the work plan provided in the application.

- **Local/domestic Travel**

- **Conferences (local and abroad)**

The NRF will contribute towards the attendance of reputable conferences of standing, provided that the applicant presents a paper or a poster.

Maximum levels of support:

TYPE	MAXIMUM LEVEL OF SUPPORT
Local conference	R 4 000 pa
International conference	R 17 000 pa

Visiting scientists

- Scientists from academia, industry or science councils who have special skills that can add value and capacity to the project through the transfer of techniques, skills and knowledge. Such visiting scientists should be individuals of good standing in their research fields and may be drawn from local or foreign institutions. The period of stay should be appropriate for the purpose of the visit up to a maximum of 12 months. Funding will be shared between the institution and the NRF – up to a maximum NRF contribution of R60 000 (*pro rata*). Repeated invitations to the same person will not be accepted.

- **Temporary support**

In deserving cases, funding will be made available to enable grantholders to employ people to assist with the research activities within the project. Maximum contribution is R40 000 per year on a *pro rata* basis.

- **Mentoring**

The primary purpose of this category of grant is to provide mentorship to academic staff and students. The maximum contribution is R4000.

What is not funded by the Programme:

- Basic computers
- Journal subscriptions and/or society subscriptions
- Consultants