

SCHEME FOR SETTING UP OF CENTRES OF EXCELLENCE IN THE FIELD OF CHEMICALS AND PETROCHEMICALS

GUIDELINES AND PROFORMA FOR SUBMISSION OF PROPOSALS

**GOVERNMENT OF INDIA
MINISTRY OF CHEMICALS AND FERTILIZERS
DEPARTMENT OF CHEMICALS AND PETROCHEMICALS
SHASTRI BHAWAN, NEW DELHI**

Scheme Guidelines

1. Introduction

The chemical and petrochemical industry in India is one of the key contributors to economic growth of the country. Chemicals and petrochemicals have become crucial in many areas such as pharmaceuticals, packaging, automotive, infrastructure, transport, and telecommunication etc. Research and development efforts to develop new products and their usage in an environmentally friendly and competitive way in new areas would strengthen the sector further.

The scheme envisages providing strategic funding for collaborative research starting from basic research to impactful commercial translation. The inputs from experts in each step of the research and development process would be ensured. The initiative would support Government institutions/ organizations already engaged in research and development activities in the sector to work on key emerging areas, so as to set up Centres of Excellence. These Centres of Excellence are expected to attract excellent researchers and developers, earning a reputation as a significant resource for the progress of science and technology and the spread of innovation in this field.

2. Broad Areas of Research

Centres of Excellence will be set up in existing educational and research institutions working in the field of Chemicals/ Petrochemicals, which inter-alia includes:

- Updating products for new uses, extending the cycle of existing products through modification;
- Innovative product technology and product design changes using chemicals and petrochemicals;
- Improvements in production processes to make them more efficient;
- Recycling process technology, innovative collection, segregation, cleaning and development of recycled products;

- Development of eco-friendly processes and products to minimize waste generation, reduce energy consumption, and utilize renewable feedstocks;
- Development of biodegradable and bio-based chemicals and polymers for various applications;
- Development of cost-effective technologies for waste water treatment; industrial spent water treatment for recycling;
- Polymer composites and nano-composites;
- Polymer-based specialized coatings and adhesives with tailored performance to be used in a wide variety of environments and applications;
- Separation and purification membranes to effectively address environmental concerns through cost-effective water purification/ desalination, gas separation etc.;
- Development of reference materials to augment testing activities in the chemicals/ petrochemicals sector;
- Research into novel materials such as polymers, composites, and nanomaterials for various industrial applications including packaging, construction, electronics, and healthcare;
- Enhancing efficiency and productivity through the optimization of chemical processes, including the use of advanced reactors, separation techniques, and process control strategies;
- Energy efficient processes for innovative product design and development;
- Other specialty applications to embrace newer, cut-throat technologies and innovations for producing affordable and qualitative products; and
- Other emerging areas in the field of chemicals/ petrochemicals – development of eco-efficient systems for various applications and any other ground breaking technologies for development of indigenous products.

3. Objectives of the Centre of Excellence

Each Centre of Excellence (CoE) would emerge as a recognized Centre for the analysis and dissemination of existing global knowledge in the chosen field, provide authoritative, strategic and timely information to stakeholders. The specific objectives are as follows:

- a. To focus on a specific area and create a competency centre;
- b. To establish sound institutional base for executing the programmes/ projects by strengthening the existing infrastructure;
- c. To undertake R&D, product and process development, process equipment selection, testing facility, training for industry;
- d. To upgrade the Centre's technical capacity and information architecture;
- e. To disseminate the results of the R&D and other activities through filing of patents, transforming the research proposal into a business proposal;
- f. Create skilled manpower competent to provide technical consultancy and facilitate Start-Up entrepreneurs, keeping in view the larger interests of the society; and
- g. To develop association between academia and industry for the benefit of the

sector.

4. Elements of a Centre of Excellence (CoE)

A CoE project should have following basic elements:

- a. The CoE should aim to concentrate existing capacities and resources to facilitate collaboration across disciplines and across organizations on long-term programmes and projects of direct relevance to the sector.
- b. The CoE must strive to strengthen and broaden the scope of the Centre's external relations with an aim to help industry in the R&D sector and develop public private partnerships, wherever possible.
- c. All parties involved in the CoE will bring to the partnership a special expertise of strategic importance to the sector.
- d. The Team Leader of the proposed CoE must be an established research scientist who should have requisite administrative experience to direct the program and guide the co-investigator and other team members in the proposed CoE.
- e. The Team Leader should have continuity in research in the relevant area, as demonstrated from publications in the last five years in various peer-reviewed international journals.
- f. Similarly, the Co-investigator and other team members must be under the permanent payroll of the proposed Institute and should have publications in international journals.
- g. After demonstrating the feasibility of the idea at the research labs, the activity should move to demonstrate the feasibility in the market place/ field.
- h. The CoE should strive to transform the research into a business proposal for industries both upstream and downstream. The CoE should strive to achieve self-sustainability through research and development activities including patent registration and licensing, consultancies while focusing on its core mandate.
- i. CoEs would help in development of new products, new applications, innovation and improvement of technology, process innovation, quality, environmentally sustainable technologies and products etc.

5. Eligibility conditions

The proposals would be assessed based on the following parameters:

Essential

- a. Existing Central or State Government University, Government organizations with a proven track record of academic excellence or research.
- b. The institution should be currently engaged in research and development activities in the chemical/ petrochemical sector, as indicated by publications, research projects, consultancy assignments and registered PhD candidates.
- c. It should have adequate infrastructure in terms of land and building, to house the Centre of Excellence including, research scholars, equipment, plant/ machinery to

be purchased from the grant.

- d. The institute should have sufficient/ competent manpower/ research staff who could be engaged in the field in which the Centre of Excellence is proposed to be set up.

Desirable

- a. The projects having an industrial partner from the beginning for promoting applied research, technology transfer and commercialization would be preferred.

6. Duration of the scheme

The support from DCPC would be given for a period of 5 years, from the date of signing the Agreement with the Institute.

7. Funding pattern under the scheme

The funding pattern under the scheme will be as follows:

- a. The financial support under the scheme would include laboratory equipment, plant/ machinery, support to research staff (JRF, SRF, RA-till the project/ period), research literature and consumables, organizing workshops/ conferences/ seminars in the relevant area and filing of patents.
- b. The funding will be mainly in the form of capital expenditure. A minimum of 50% of the grant should be used for procurement of equipment for the project.
- c. The percentage of financial support from the Gol out of the total investment/ costs of the project will be a maximum of 50%, subject to an upper limit of Rs.5 crore. The balance will have to be met from the resources of the applicant institute and its partners.
- d. The funds will be released in three instalments.
- e. The second and third instalment will be released after receiving satisfactory achievement-cum-performance report, on acceptance of Utilization Certificate, and approval of Project Sanctioning Committee.
- f. Not more than 10% of the total grant sanctioned will be spent for organizing workshops, seminars, conferences etc. by the CoE.

8. Submission of proposals

Based on the aforementioned broad areas of research, the institutes may fill the enclosed proforma and submit research proposals on specific topics/ areas. After industry consultations/ suggestions, areas would be prioritized and finalized for selection as CoE.

9. Modalities/ Selection process

The evaluation and selection of a proposal will include the following steps:

- a. Internal to the Institute – the Team Leader of the proposed centre will prepare the Project Report and submit it to the Head of the institution, who after evaluating it at

his/ her level for qualitative improvements, will cause it to be submitted to DCPC with his/ her specific recommendations. He/ she will make observations on past achievements of the identified centre, its position in existing research, availability of infrastructure, potential for growth and requirements for additional support. Internal competition between different units/ centres of the same institute should be encouraged.

- b. Evaluation of proposals by the Expert Committee – the project proposals received from the institutes will be evaluated by an Expert Committee, chaired by Joint Secretary, DCPC. The Team Leader will make a presentation to the Expert Committee and the Expert Committee will make specific recommendations regarding selection of the centre based on relevance of work, current research status of the applicant institute, the quality and expertise of the team, depth of collaboration with the industry and the requirements proposed.
- c. Final approval – the proposals recommended by the Expert Committee will be placed before the Project Sanctioning Committee chaired by Secretary (DCPC).
- d. Wherever possible, the project will be run on the lines of Public Private Partnership. The financial input/ sponsorship has to be worked out as per the selected topics and institution's outputs. Besides, financial obligation has also to be undertaken by the institute/ autonomous body where the CoE is being created. A framework will be finalised if a PPP partner is available. The CoE shall strive to achieve a stream of income through its research and development activities including by way of patent registration and licensing, consultancies etc. to achieve a degree of financial independence while focusing on its core mandate.
- e. After selection, a Bond will have to be signed by the applicant institution with DCPC.

10. Monitoring Mechanism

The monitoring of the scheme will be ensured through the following measures:

- a. After signing of the bond, Progress Reports will be submitted half yearly to DCPC. Progress reports shall indicate inter-alia the date of commencement of the programme, location, name of the team leader, list of equipment/ plant machinery purchased, achievements with reference to milestones, names and number of scholars engaged, research activities undertaken, number of patents filed/ registered, services to the industry in the proposed area and income thereof, research papers, number of consultancies involving dissemination of knowledge to industries, earning from the consultancies, other dissemination activities etc.
- b. The Project Monitoring Committee will review the working of the CoE on a yearly basis including against the targets set, if any, by the Project Sanctioning Committee to consider release of the next instalment.
- c. Evaluation post implementation– after the release of the entire amount of DCPC's share, each CoE will be evaluated by a team of independent experts in terms of the outcome envisaged under the scheme and actual achievement. Each of these

centres will be given a grading based on the outcomes and the impact on the sector. The Committee shall make a SWOT analysis noting the success and shortcomings and suggest areas for continued improvement. The Department of Chemicals and Petrochemicals shall consider the recommendations of the Committee and take a final view. The decision arrived by the Department of Chemicals and Petrochemicals shall be binding on the CoE and it shall be incumbent on the CoE to act upon the same.

- d. Post such evaluation, each Centre shall report yearly their achievements to the Department to enable documenting the success stories as well as shortcomings for continued improvement and learning. This will also ensure continuity of research in the proposed area and implementation of timely advancements in the technology.

11. Terms and Conditions

The terms and conditions are as follows:

- a. Funds under the Scheme would be released under the Central Nodal Agency (CNA) Model-II Guidelines of the Department of Expenditure, Government of India.
- b. All CoEs are required to execute a Bond (in the prescribed proforma) on a non-judicial stamp paper before any grants-in-aid are released to them.
- c. The grant being released should be exclusively spent for the specified purpose for which it has been sanctioned within the stipulated time. Any unspent balance out of the amount sanctioned, including interest accrued, would be refunded to the Govt. of India by means of an Account's Payee Demand Draft drawn in favor of Drawing & Disbursing Officer, Department of Chemicals and Petrochemicals, payable at New Delhi.
- d. The grantee shall furnish to DCPC, utilization certificate and an audited statement of accounts pertaining to the grant as per the prevalent financial rules of Government of India and submit progress reports, UCs and other information at the end of each financial year.
- e. All the assets acquired or created from the grant shall be installed in the premises of the CoE and not in any other Department/ Division of the host institute, unless specifically approved by DCPC.
- f. The CoE would maintain a record of all the instruments and capital equipment procured in accordance with the extant rules of the Government of India.
- g. Concerned officers of DCPC or its authorized representatives may visit the organization/ CoE for ascertaining the progress of work and attempt to resolve any difficulties that might be encountered in the course of implementation.
- h. DCPC reserves the right to terminate support to the project at any stage, if it is convinced that the grant is not being utilized properly or that appropriate progress in the project work is not being made.
- i. DCPC will not have any liability towards the manpower appointed by the grantee institution for implementation of the project.

- j. DCPC will have no responsibility in case of any loss to life or property due to accident, fire or any other reasons. The host Institute is required to take appropriate safety and insurance measures to safeguard against any loss to human life and property related to the CoE.
- k. DCPC will have no liability on account of any omission or commission of regulatory/ statutory requirements by the CoE.
- l. The Grantee will indemnify, defend and hold harmless DCPC from and against, and in respect to, any and all losses, expenses, costs, obligations, liabilities and damages, including interest, penalties and attorney's fees and expenses.

PROFORMA FOR SUBMISSION OF PROPOSALS FOR CENTRE OF EXCELLENCE
(to be filled by the applicant)

PART I: GENERAL INFORMATION

1. Name of the Institute/ University/ Organization submitting the Project Proposal:
2. Address and status of the Institute:
3. Sources of funding for the institution and its projects:
4. Name and designation of the Executive Authority of the Institute/ University forwarding the application:
5. Project Title:
6. Duration of the proposed project (in years):
7. Total Cost:
8. If the project is multi-institutional; please furnish the following:
 - Name of Team Leader and Co-investigators:
 - Designation:
 - Address:
9. Scope of the proposed work (in broad sense):
10. Project Summary (Not to exceed one page. Please use separate sheet):

PART II: PARTICULARS OF TEAM LEADER/ INVESTIGATORS

1. Name:
2. Date of Birth:
3. Sex (M/F):
4. Designation:
5. Department: Institute/ University:
6. Address:
7. Contributions in the area of technology, including the field under which the project

is proposed

8. Number of research projects being handled at present:

9. Co-Investigators

(Note: Use separate pages, if more members of the applicant institute are involved)

PART III: TECHNICAL DETAILS OF THE PROJECT

(Under the following heads on separate sheets)

1. Objectives and scope of the project (not to exceed 2 pages):
2. Work Plan and Methodology:
3. Time schedule for the work (Please provide quantifiable outputs and PERT chart):
4. Project Outcomes and Deliverables, during the project duration and beyond:
5. Budget Estimate Break-up

A) Gol Grant

i) Non-Recurring

- Equipment

ii) Recurring

- Research Staff (C)
- Recurring Research Consumables (E)
- Organizing workshops/ seminar, outsourcing testing, participation in international conference, patent filling/ procurement of e-journals and contingency (F)

iii) Overheads @ 15% of Total recurring cost

Total (Sl. No. A (i) + A (ii) + A (iii)) -----[1]

B) Applicant Institute

i) Non-Recurring

- Equipment

ii) Recurring

Total (Sl. No. B (i) + B (ii)) -----[2]

C) Resources contributed by other collaborating institutions and industries, if any

Total (C) -----[3]

Grand Total = [1] + [2] + [3]

PART IV: DECLARATION/ CERTIFICATION

It is certified that,

- a. The research work proposed in the scheme/ project has not been submitted to any other agency for financial support.
- b. If the project involves field trials/ experiments/ exchange of specimens etc., we will ensure that ethical clearances would be taken from concerned ethical Committees/ competent authorities and the same would be conveyed to DCPC.
- c. Any research outcome or intellectual property right(s) arising out of the project shall be informed to DCPC.
- d. The institute/ university agrees that the equipment/ plant and machinery and other basic facilities shall be extended to investigator(s) throughout the duration of the project.
- e. The institute assumes to undertake the financial and other management responsibilities of the project and submit the utilization of grants annually to DCPC.

Signature of Team Leader

Date:

Signature of co-Investigator

Date:

**Signature of Executive Authority
of Institute/ University with seal**

Date: