सत्यमेव जयते

Department of Biotechnology
Ministry of Science & Technology
Government of India

CALL FOR PROPOSAL (2025-26)

IN

QUANTUM BIOTECHNOLOGY

For

TEAM BUILDING, NETWROKS & CLUSTERS DEVELOPMENT

Last Date of Submission **20th August 2025**

In the biotechnology domain, there is a need to understand the biological processes at deeper level. The biological systems often involves the exchange of energy with its environment in the form of molecular vibrations and photons, such a system is called as 'open Quantum System'. The principles of quantum mechanics are already in use in biomedical diagnostic equipments such as MRI and biosensors such as NMR etc. Quantum biotechnology can potentially have a huge impact on numerous technologies, including sensing, health, the environment, and information technologies including quantum computing applications in biotechnology such as in design of RNA based therapeutics.

Encouraged by 'National Quantum Mission', the Department of Biotechnology is announcing this Call for Proposal in order to develop the quantum based R&D ecosystem for understanding the biotechnological phenomenon at atomic level and application of its outcome for Industrial processes such as biomolecular engineering, developing detection and diagnostic tools, resolving synthetic biology challenges and product development such as precise biosensors and imaging technologies etc. as well as supporting the start up ecosystem.

This Call is open to Indian Scientists/Faculties including Computer Scientists, Engineers, Clinicians either alone or as a team involving the Industrial partner(s).

Note: In this call, only the research proposals proposing to build networks or clusters between institutions and involving investigators of different disciplines will be considered.

OBJECTIVES

The major goal is to develop the academic & Industrial biotechnology ecosystem in India with the following broad objectives: -

1. Developing Institutional capability and capacity in Quantum biotechnology
2. Creating skilled and quality human resource
3. Enhancing the academic-industrial linkages and boosting Start up ecosystem

4. Encouraging the Interdisciplinary work ethos and building networks & clusters

PRIORITY AREAS

The following priority areas have been identified in Quantum Biotechnology area for achieving the objectives:

a. Quantum inspired techniques and simulations for biotechnology applications e.g. study of biomolecular properties and reactions.
b. Quantum biosensing for medical diagnostic device development, in particular development of devices based on accurate magnetic & electric field measurements together with necessary electronics.
c. Quantum photonics and applications for developing sensitive imaging devices having high resolution and therapeutic purpose.
d. Support from closely related developments in nanorobotics, machine learning a nd mobile phone Apps in order to expand public outreach of the new devices.
e. Understanding the quantum dynamics of various biological phenomena for new biotechnology applications.

WHO CAN APPLY

Any Indian National holding a regular position (at least four years before superannuation) in any Indian academic and scientific institution either on their own or in collaboration with other academic institutions or Industry or start ups may apply.

CRITERIA FOR PROPOSAL SUBMISSION

The minimum requirement for proposal submission is as follows:

a. A Proposal should be written in English language ONLY
b. Investigators must hold a regular position in an academic and/or scientific institution
c. Proposals of exceptional quality leading to thorough execution of the priority areas and likely to deliver after the completion of the project will be preferred.
d. The proposal should have clear objectives, rationale, clearly specified deliverables and a detailed work plan as well as complimentary in case of network proposals.
e. Any collaborative/network proposal must clearly define the role of each collaborator. The role of collaborator must be complementary in nature rather than repetitive/independent to achieve the defined components of objectives. Network proposals will be given preference.
f. A proposal encompassing the comprehensive approach for achieving the defined priority areas will be preferred.
g. Investigator(s) having a track record for technology development will be preferred
h. The Indian principal investigator must have at least four years of the employment remaining in the institution at the time of proposal submission

i. Proposals having public-private partnership will be preferred

FINANCIAL SUPPORT

Funding procedures and eligible costs are subject to National regulations. Apart from the terms and conditions of the grant, the additional condition for this call is as follows -

a. DBT will provide the financial support ONLY to an academic and scientific institution, however, an industry may collaborate with them to develop a product [Note: The Institutions may follow the DBT's Intellectual Property Guidelines 2023].
b. The subsequent year funding depends upon timely submission of the annual progress report, financial documents as well as other documents desired and based on the performance appraisal of the project.
c. The support will be provided only for a period of three years from the date of sanction of the project. An extension of one/two year may be provided based on the performance/outcome of the project.
d. No financial support will be provided to an industry. The industry may partly support the academic component and a copy of the written agreement may be provided along with the proposal.
e. Infrastructure will be established in an academic institution ONLY.

MANDATORY REQUIREMENTS

Once the proposal is recommended for support the following documents must be submitted –

a. Declaration/Certificate, including the check list, signed by the Head of the institution
b. Applicable clearances of the Institutional Biosafety Committee, Certificate for Animal Ethics Committee, Institutional Ethics Committee or any other committee etc.
c. 'National Biodiversity Act (2002)' has to be followed by each investigator
d. Any project involves product/technology development/transfer/ commercialization; an applicant has to submit a declaration certificate duly endorsed by the Institution along with the proposal that to the best of the knowledge, the submission is original and does not violate or misappropriate any third party trade secret, "know-how," copyright, patent or other intellectual property right. Applicant also warrant and represent that there are no obligations of any nature, legal or otherwise, which would prohibit, restrict, or interfere with their participation in the call or submission of their design report, and agree to obtain any necessary clearances, authorizations and/or approvals prior to participation
e. Any other government regulation/framework or order

CRITERIA OF SELECTION

The following category of proposals will be given preference:

a. having academic and industrial linkage
b. multidisciplinary and inter-institutional

c. collaborative with clear objectives
d. having short term deliverable potential
e. proposing national interest e.g. proposing towards achievement of sustainable development goals
f. having either industrial component or international collaboration

MONITORING AND FOLLOW UP OF THE PROJECT EXECUTION

The Investigator is required to submit an annual progress report for evaluation by an expert committee as per DBT's guidelines or as and when required. The extension will be based purely on performance/outcome of the project.

PROPOSAL FORMAT &SUBMISSION

Electronic copy of a proposal needs to be submitted through DBT's online proposal submission system **(http://dbtepromis.nic.in/login.aspx)** under Call for Proposal for 'Quantum Biotechnology'. The following may be noted –

a. Incomplete or incorrectly filled up application with lack of essential information/ documents will be summarily rejected.
b. Proposal submitted through e-mail will not be entertained.
c. Proposals received after the last date of submission will not be considered.

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