

Science, Technology & Innovation Funding Authority
www.stdf.eg

Guide for Applicants

Basic Sciences Research Grants

(Call 2)

Chemistry– Mathematics– Physics

Deadline for submission: 13 February 2023 at 2:00 p.m.

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Basic Sciences Research Grants (Objective)

Basic Science Research Grants are aimed at research active individuals and groups in the fields of Chemistry, Mathematics, and Physics. It is expected that the funded programs will be directed towards innovative and cutting-edge fundamental research in these areas. The objective of the call is to advance such research in Egypt, and to identify and support existing endogenous expertise in these fields; to enhance their competitiveness, impact and integration at an international level.

The **specific aims** of this program are:

1. Reinforcing and promoting fundamental research in basic sciences in Egypt.
2. Encouraging multidisciplinary and cross-institutional theoretical research work.
3. Building and sustaining units of scientific excellence capable of achieving a critical mass of highly qualified and innovative theoretical scientists, whose work, overtime, can be exploited to address real-life challenges facing Egypt.
4. Nurturing an ecosystem harboring the progress of Basic Sciences in universities and research centers; to help their integrations into the international academic research community, and to enhance the overall capacity for endogenous research output.
5. In this context, reducing the exodus of scientific talents and reversing brain drain by attracting talented Egyptian expatriates.
6. In the spirit of the UNESCO international Year of Basic Science for Sustainable Development it is desired that projects be relevant to the technical and intellectual development of society Demonstrating this may be accomplished through showing that the proposed basic science research program includes lines of investigation that may serve technical, economic or social developmental needs in the medium term; or that the program involves the apprehension and development of advanced technological (e.g., experimental) or computational methods (e.g., state of the art data analysis or numerical coding), despite being purely curiosity driven; or that there will be a significant educational and/or public dissemination program associated with the proposed project, which in this case is expected to be concerned with cutting edge fundamental research areas that excite significant interest among the wider public (including university students and school pupils).

Research Topics

Mathematics

1. Analysis
2. Combinatorics
3. Dynamical Systems-Complex Systems (including mathematical modelling in ecology) *
4. Fluid Dynamics (including turbulence, climate and atmospheric science) *

5. Data Science (including artificial intelligence and machine learning) *
6. Game theory (mathematical modeling of strategic and logical decision making) *
7. Graph Theory/Topology
8. Mathematical modelling in economics*
9. Mathematical Logic
10. Mathematical Physics
11. Mathematical Statistics
12. Modern Algebra
13. Number Theory
14. Optimization
15. Probability Theory/Stochastic Processes
16. Symbolic Computations

*Starred items have significant interfaces with the physical and/or other sciences, interdisciplinary teams are thus encouraged to apply in these categories.

Chemistry

1. Carbon and Nano-Structures for Energy Harvesting and Conversion
2. Catalysts – A New Generation
3. Green Chemistry
4. Materials Chemistry
5. Molecular Machines
6. Nano-Fabrication

Physics

1. Astrophysics
2. Biophysics
3. Condensed Matter Physics
4. Gravity and Cosmology
5. Nonlinear Optics
6. Nuclear Physics

7. Particle Physics
8. Plasma Physics
9. Pulse-Shaping and Ultra-Short Laser Pulses
10. Quantum Computing and Quantum Information
11. Statistical physics and kinetics and applications, including to complex systems
12. Subwavelength Artificial Structures (including photonic and plasmonic materials)

II.1 Eligibility Criteria

An applying research team must be led by a distinguished researcher Principal Investigator (PI) who is an Egyptian citizen and is affiliated with an Egyptian research entity (universities, research centers/institutes, etc.). He/she should hold a PhD degree and has to show a substantial research track record (a high h-index for the PI is a favorable indication. In addition, other bibliometric indices may be considered). In addition to the Principal Investigator, the research team, operating within an Egyptian research entities, should comprise at least another PhD-qualified researcher and a number of doctoral and master graduate students. For groups associated with universities including undergraduate students as research team members is encouraged. It is recommended that the non-governmental hosting institutes are encouraged to participate by at least 20% of the total fund of the proposal. This is to show the administration interest in supporting the execution of the project.

II.2 Submission Process

All applications must be uploaded on STDF website (www.stdf.eg), to which registration is required. Applicants are invited to submit proposals in the specified research areas of this call. The detailed proposal should be drafted according to the template and guidelines for preparing STDF proposals. Generally, the proposal should include the following sections:

- Cover Page
- Research team (Annex 1: Research team Information Table - Annex 2: CV of the principal investigator (PI) and all other members of the research team)
- Abstract, written in English and Arabic
- Introduction and background information (including adequate literature review)
- Objectives of the proposed work
- Description of the proposed research work including the methodology to achieve its objectives
- Evidence of track record of contributions of members of the research team to the proposal's topic. This may include a list of relevant publications of team members in the last five years
- Budget table (Annex 3: Budget format)
- Budget justification:
 - Expendable Supplies & Materials, software and equipment needed
 - Travel justification (when travel funds are solicited)
 - Cost of organization of schools, workshops and related activities
 - Description of any additional support - e.g. from home institution or additional grants -which may be available for project (including expected budget)

- Expected outcomes and impact of proposed program of research
- Plans for wider dissemination of results and public outreach
- References
- Appendices (any additional documents)
- Acknowledgement form
- Institutional endorsement letter/s

Together with the submitted proposal, it is desirable for the applicants to include a list of five internationally recognized scientists in the field of the proposed research.

II.3 Budget Estimation

A grant of 2,000,000 -3,000,000 Egyptian Pounds is awarded to an accepted project in order to cover costs required to accomplish the project during its entire period. The amount of fund depends on the specific areas of the call (Up to 2 Million for the mathematical projects and up to 3 Million for projects in the areas of chemistry or physics).

The period of the project is from two to three years. The full proposal must include a detailed budget in which all prices are given in Egyptian Pounds. Over estimation of the budget will be considered in the evaluation process. The applicants may refer to Annex 3 of the full-proposal: Budget format. The budget format in the proposal should be signed and stamped by the PI host institution.

II.3.1 Eligible costs (Allowable)

The eligible direct costs for the research are the costs identified as specific costs directly linked to the performance of the research.

II.3.2 The Incentives of Team Members

Monthly incentives are granted to members of the research team, based on their role/assigned tasks and time dedicated to the project, in accordance with STDF internal rules and regulations. Because of the theoretical nature of the topics included in this call, it is expected that half of the total budget could be used as incentives for members of the research team.

II.3.3 Travel Cost

The cost of stay in other countries is calculated according to STDF rules and regulations. Justification for travel should be provided in the proposal. Training in a leading university in the proposal's field is allowed for up to three months.

II.3.4 The Cost of Equipment and Software

The allocated amount for the purchase of equipment and software should be utilized for the purchase of new equipment, software licenses and expendable supplies & materials (with up to 20% of the total budget) that are directly related and necessary to the research project. The budget format in the proposal should be signed and stamped by the PI host institution.

II.3.5 The cost of Organization of Schools and Workshops

The allocated amount will be based on a favorable judgment of the description of the specific activity that should be directed towards the promotion of the area of research specified in the proposal. The details of the activities and their cost should thus be clearly listed in the proposal.

II.3.6 Indirect Costs

A total of 5% of the total budget of the project, excluding the cost of equipment, might be allocated as indirect cost that are payable to the principal researcher's host institution (where he/she is conducting the research work). Such indirect costs are payable for the usage of facility and infrastructure of the host institution and could cover the cost and salaries of administrative work.

II.4 Evaluation Criteria

In Principle, the funds are awarded based on the following criteria:

- Proposal's scientific/technological/innovative quality. This shall involve, but is not limited to, the following:
- well-argued and comprehensibly expressed scientific case, added value, novelty and potential impact, adequate methodology, scientific expertise of researchers; proper budgeting and costing, adequate project management and a convincing detailed plan.
- Potential for growing an endogenous knowledge in the proposed field that will place Egyptian researchers at the forefront of this particular area.
- The potential of establishing an internationally well recognized group capable of integrating into the international academic research community and advancing cutting edge research in the topics specified in this call.

Upon the eligibility check phase, eligible proposals are technically evaluated for final decision. Evaluation of proposals is carried out by STDF with the assistance of national / international independent experts. STDF staff ensures that the evaluation process is transparent, robust and fair, and in alignment with its rules and regulations.

II.5 Payment Procedures

When a project is approved by STDF, a contract agreement will be signed between STDF, the principal investigator, and the host institute. The budget will be disbursed as installments. The number of installments depends on the duration of the project. The first installment will be disbursed at the beginning of the project. The other installments will be paid after the receipt and approval of the progress reports.

The disbursement of the final installment of the project (10% of the budget) is conditioned upon the delivery of the outputs specified in the proposal in the scheduled time (such as high-impact publications, submission of articles to international journals, student theses based on the work specified in the proposal, presentations in renowned international conferences, organizing meetings...etc.) which should be highlighted in the final report. The payment of the final installment is subject to the internal rules and regulations of STDF and can cover only the indirect costs as well as the remaining incentives.

II.6 Follow Up

A- Technical Reports

Biannual technical progress reports should be submitted according to STDF progress reports formats. The final report of the project should be submitted no later than two months after the official end date of the project and should follow STDF final report format. together with an Achievements Report.

All submitted reports are evaluated by STDF and a feedback is sent to the project's PI and host institute.

For rejected follow-up reports, STDF has the authority to impose additional follow-up and monitoring progress reports totally independent from the regular way.

If the submitted progress/final reports show that the team did not achieve the set objectives as specified in the original proposal -- or provides convincing reasons for following and achieving a related set of updated objectives -- and/or the team is performing poorly, STDF will take all measures in order to stop the project and recover the budget allocated.

B- Financial Reports

Biannual financial progress reports should be submitted according to STDF progress reports formats, signed and stamped from the Institution as well as all the expenditure vouchers.

III. General Remarks and Conditions

- All proposals must be uploaded to the STDF website, proposals submitted by e-mail or sent as hard copies will not be considered.
- All proposals must use the exact formatting requirements for the current call given in the attached Application Form. Failure to adhere to the exact format required will result in rejecting the proposal.
- All proposals must be in English Language.
- The application must include a signed and stamped endorsement Letter from the institution's legal representative -president- as shown in the application form.
- Same proposal should not be submitted in more than one grant. (Duplicate submission of the same proposal is not allowed).
- Each PI can only submit a maximum of two proposals until notified with the evaluation results of his/her submitted proposals.
- Each PI cannot submit more than one proposal in the same call.
- A plagiarism check will be applied to all proposals. Accordingly, the proposal must be submitted in a readable PDF format (i.e. not scanned), to facilitate plagiarism checks.
- At any time, a contracted STDF project team member should only be participating in a maximum of 3 projects (or a maximum of 2 projects as a PI/Co-PI).
- DO NOT submit proposals previously funded either by STDF or any other funding agency. Proposals deemed to be funded by other grants will be disqualified & applicants will be banned from submitting proposals to STDF.
- Any publications delivered as a result of STDF funded proposals, should acknowledge STDF funding in the publication.
- STDF's intellectual property rules (IPR) rules and regulations in addition to STDF code of ethics are applied to all submitted proposals.
- Foreign partners are allowed in this grant only as consultants given that the relevant approval has been obtained, and only consultants' fees are allowed for those partners.
- Equipment purchased using STDF funds must be made available to all Egyptian researchers, provided that the project work is not disrupted.
- If more than one institution is involved it has to be clearly stated which institution is in charge and the role of each partner institution has to be specified.
- Extending a project's duration is not allowed. Only under very strict justified conditions shall STDF allow project extension, and any request for project extension will affect negatively STDF future decisions regarding the performance of the research team members.
- Having members from different departments or research institutes in the same research team is allowed and encouraged.
- Conflict of interest should be avoided in any proposal application.
- All proposals will be evaluated on a competitive basis.