

# Innovation in Applied Sciences, Technologies and Industrialization

Call for proposals  
August (2022)

## Table of Contents

|  |   |
|--|---|
| I. Grant Objectives .....              | 1 |
| II. Research Topics.....               | 1 |
| III. Eligibility Criteria .....        | 2 |
| IV. Submission Process .....           | 3 |
| V. Evaluation Criteria .....           | 3 |
| VI. Budget Estimation.....             | 4 |
| • Eligible costs (Allowable) .....     | 4 |
| • Cost of Equipment and Software ..... | 4 |
| • Travel Cost.....                     | 4 |
| • Incentives of Team Members .....     | 4 |
| • Indirect Costs.....                  | 4 |
| VII. Payment Procedures.....           | 5 |
| VIII. Follow Up .....                  | 5 |
| • Technical Reports.....               | 5 |
| • Financial Reports.....               | 5 |
| IX. Remarks and Conditions .....       | 5 |

## I. Grant Objectives

The Innovation in Applied Sciences, Technologies and Industrialization Grant (ASG) scheme is planned in response to the sustainable socio-economic development in Egypt in accordance with the Country's 2030 development vision. ASG provides competitive funding for transformation of discoveries. The main objective of this call is to bring into effect a product, a specific field methodology or a transformed technology which are important for the Egyptian economy. Direct contact should be established between academia and industry on high-technology. Small businesses and entrepreneurship are also considered in this call as partners or beneficiaries.

The call is directed to supporting pre-existing research outcomes and fostering technologies in a transitional research/discovery-to-application stage; potentially twining academic and industrial partnership in developing a final product, using national assets and technologies, and ultimately helping improve the socioeconomic system by reducing imports.

## II. Research Topics

### Materials applications

1. Innovative sustainable materials for buildings and highways construction.
2. Lightweight materials for industrial applications.
3. High performance materials for energy, agriculture and environment applications.

### Food security and farming technologies

1. Improving agricultural water productivity.
2. Preserving soil health as living ecosystem and regenerative agriculture.
3. Controlled environment agriculture (CEA) technologies.
4. Small farm in agriculture and fisheries.
5. Farming systems and climate change mitigation.

### Energy production, storage and management

1. Green and blue hydrogen generation, storage and transportation.
2. Energy management and optimization in the industrial processes.
3. Waste derived fuels (WDF) for partial substitution of conventional energy resources.
4. Solar photovoltaics and Solar energy for thermal conversion.
5. Renewable energy.

### Information and Communication Technologies:

1. Artificial Intelligence (AI) applications for economic and social development including the study of trust and explainability of AI systems.
2. Big data analytics for the analysis and/or visualization applications of complex data sources; e.g., health and population data, network data, satellite data, including time-series, and spatial-temporal data.
3. Data privacy and security.

4. Electronic health systems, Mobile health, and wearable devices.
5. Robotics applications in health, industries, agriculture, etc.
6. Low-cost computing devices and their applications in education, health, agriculture, tele-medicine, etc.
7. IoTs and their applications in energy systems, roads, water and sanitation systems, agriculture, etc.
8. Virtual reality, augmented reality, mixed reality, and the metaverse applications
9. ICT for smart and sustainable cities.
10. Using ICT for climate-Smart agriculture to address the interrelated challenges of food security and climate change.
11. Quantum computing and prospective applications.
12. Security in IoT

#### **Water treatment, resources and usage management**

1. New technologies for water desalination.
2. Water recycling for agriculture irrigation, potable water, industrial processes and restoration.
3. Efficient management of water resources.
4. Data mining of Egypt's groundwater, water quality, water usage, availability and stream flow.
5. Systematic studies of the possible effects of dam building in Nile basin countries on water flows.

#### **Environment and eco-systems sustainability**

1. Carbon capture and carbon dioxide conversion into economical products.
2. New technologies for biomass processing.
3. Improving freshwater and marine aquatic ecosystems.
4. Management and recycling of industrial and urban wastes.

### **III. Eligibility Criteria**

An applying research team must be led by a distinguished researcher who is an Egyptian citizen and is affiliated to a research entity (universities, research centers/ institutes. etc.). He/she should also hold a PhD degree and have to show good research experience (a high h-index for the Principal Investigator (PI) is a favorable indication. In addition, other bibliometric indices may be considered). The research team operating within an Egyptian university or a research institution should consist of a Principal Investigator (group leader), plus at least another PhD-qualified researcher and a number of doctoral and master graduate students.

Industrial experience within the research team would be a positive asset. Industrial partners with expertise relevant to the proffered project should thus be sought whenever they are available in the Egyptian market. Potential industrial partners should be identified to hold a strong record of success in production, as well as an influential impact on economic development.

#### IV. Submission Process

All applications must be uploaded on STDF website ([www.stdf.eg](http://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 according to the application form:

- 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
- Objectives of the proposed work
- Description of the proposed research work including the methodology to achieve its objectives
- Evidence of former 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
- Budget justification.
  - Facilities, software and equipment needed
  - Travels if needed
  - Cost of organization of workshops and related activities
- Expected project outcomes and impact
- References
- Gantt Chart
- Acknowledgement form
- Institutional endorsement letter

#### V. Evaluation Criteria

The funds are awarded based on the following criteria:

- Proposal scientific/technological/innovative quality (shall involve, but not limited to the following: comprehensible writing, added value and novelty, relative scientific expertise of researchers, adequate methodology, budgeting and proper costing, and project management),
- Potential for growing an endogenous knowledge in the proposed field that will result in transforming technologies for industrial applications.
- Introduce an innovative product based on pre-existing knowledge, discoveries and database not restricted under patent or intellectual property legal ship.
- Elevate the burden and reduce the cost of imports for alternative substitutes locally produced through national technologies.

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 STDF rules and regulations.

## VI. Budget Estimation

A grant Not exceeds two Million Egyptian Pounds is awarded to the accepted project in order to cover all costs required to accomplish the project during its entire period. Each item in the budget should be accurately justified, otherwise the proposal will be rejected.

The period of the project is up to two 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 the Budget format in the application form. The budget format in the proposal should be signed and stamped by the PI host institution.

- **Eligible costs (Allowable)**

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

- **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 facilities that are directly related and essential to the research project.

- **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.

- **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.

- **Indirect Costs**

A total of 5% up to L.E. 150,000 of the total budget of the project excluding the cost of equipment might be allocated as indirect cost that are payable to the researcher(s) host institution (where the researcher(s) is/are 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.

## VII. Payment Procedures

When a project is approved by STDF, a contract agreement will be signed between STDF, the principal investigator (PI), 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 (5% of the budget) is conditioned upon the delivery of the outputs specified in the proposal in the scheduled time (such as the developed product, specific methodology, high-impact publications, submission of articles to international journal, student theses based on the work specified in the proposal, presentations in renowned international conferences, ...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.

## VIII. Follow Up

### • 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 one month 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 and/or the team is performing poorly, STDF will take all measures in order to stop the project and recover the budget allocated.

### • Financial Reports

Two reports are requested every year (biannually) signed and stamped from the Institution as well as all the expenditure vouchers.

## IX. 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.