GOVERNMENT OF INDIA
MINISTRY OF SCIENCE AND TECHNOLOGY
DEPARTMENT OF SCIENCE AND TECHNOLOGY
Technology Mission Division

CALL FOR PROPOSALS

SOLAR ENERGY RESEARCH INITIATIVE (SERI)- 2016

DST's initiative on Solar Energy is positioned upstream with thrust on enabling knowledge based R&D activities for entire gamut of solar technologies including balance of systems. Solar Energy utilization for applications both for power as well as other than power generation with a view to provide convergent technology solutions under real-life conditions are being explored and assessed. The thematic research areas were identified based on national needs. The initiative supports upstream end of research, where knowledge, more advanced than the current practice in the industry finds a space. The initiative also supports translational research utilizing already available know-how to consolidate research outputs and advance current technologies to drive down the costs of delivered energy.

This call solicits proposals under two streams.

Stream A: Solar Energy Research (SER-2016) and

Stream B: Solar Components and Systems (COMPS-2016)

I. Stream A- Solar Energy Research (SER-2016)

The call focuses on promoting novel ideas and cutting edge research which would lead to not only new or improved design and performance of existing devices, sub-systems and systems but could also catalyse leap-frogging innovations and breakthroughs in the area of solar energy. Only those proposals which have direct relevance to solar energy production, harvesting, storage, transport and utilization will be considered. The Call will consciously avoid duplication and would not support open-ended basic research proposals on materials properties, investigation etc., which could well be considered under the Programme Advisory Committee (PAC) of Science and Engineering Research Board (SERB).

WHO CAN APPLY: Faculties/ Scientists working in regular position in recognized Academic Organisation/ Public funded R&D Institution/ Laboratories etc. either individually or in consortium can apply as PIs/ Co-PIs.

THEMATIC AREAS:

- Solar Photovoltaics,
- Solar Thermal,

- ❖ Interface of Solar Systems with Grid

PROJECT COST: Upto Rs. 100 lakh

DURATION: 36 months

CALL OPENING DATE: 13th April, 2016

CALL CLOSING DATE: 31st May, 2016

ASSESSMENT CRITERIA:

The scientific out-come of the proposal should have clear connect with solar energy application. This should be clearly brought out in the proposal. The proposal meeting this requirement would be evaluated based on following criteria;

- ❖ Novelty and Scientific uniqueness
- ❖ Research competence of Principal Investigators (PI) and Co-Investigators (Co-PI)
- ❖ Availability of Research /fabrication facilities at the Organisation/ Institute
- ❖ Proposal formulation (Precision in objective, adequacy and completeness of literature review, preliminary work done, methodology and work plan, resources requested for this purpose etc.)

COMPONENTS OF GRANT

1. Research Manpower (Nomenclature and salary as per DST guidelines)
2. Equipment /fabrication as required for the project.
3. Domestic travel
4. Consumables
5. Contingencies
6. Other cost
7. Overheads

SUBMISSION OF PROPOSALS: General guidelines for submission of proposals may be seen at Section III.

II. Stream B- Solar Components and Systems (COMPS- 2016)

OBJECTIVE OF CALL: The objective of the call is to foster interdisciplinary multi-institutional networked research projects synergising strengths of respective partners to deliver efficient devices/systems meeting national needs as well as global benchmarks.

The call envisages close interaction between industry, academia and research institutions. Participation of industrial collaborator from early stage is desirable to build long term linkage and take up leads to develop Technologies which could find a space in market place eventually. The outcome of the scientific endeavor under the call should be scalable and deliverables of the projects should have the potentials to change business as usual scenarios. The focus of this call is on developing systems/ sub-systems and devices meeting the priorities and requirements of the country. The need of scientific work and demand for deliverables emanating from the project need to be firmly established in the proposal. Special consideration will be given to the projects which identify prevalent and emerging India-Centric Challenges in Solar Energy. Projects proposed in participation with developer of solar plants identifying field level issues will be specifically focused for addressing engineering challenges. Projects aimed at indigenous development of Solar equipment and components, chemicals etc would also be specifically encouraged to dovetail into 'Make in India' focus. The call would also support:

- Pre-competitive technology development.
- Translational research utilising already available know-how to consolidate research outputs and advance current technologies.
- Thematic projects on specific technical issues identified by the industry.

WHO CAN APPLY: Faculties of recognized universities and academic institutions, scientists working in National Laboratories, R&D institutions and Research organizations recognized by DSIR individually or in consortium. Genuine and meaningful participation of industry having capability in the area and potential to commercialise the developed technology is desirable.

PROJECT SIZE: Not exceeding Rs. 3 crore

PROJECT DURATION: 3 years maximum

INDUSTRIAL CONTRIBUTION: Participating Industry would be required to invest within its own system i.e. production/ test lines and/or develop required infrastructure to adopt research leads and is expected to bring design and engineering capability for the benefit of the project. Contribution in cash, though welcome, is not mandatory for the projects submitted under this call.

CALL OPENING DATE: 13th April, 2016

CALL CLOSING DATE: 31st May, 2016

SPECTRUM OF ACTIVITIES SUPPORTED:

The spectrum of activities include translational research to convert available know how to useful product /process etc as well as applied research aimed at performance enhancement of existing devices and systems. This would also include Development and Engineering (D&E), Prototype Development of Product/ System, Process Development and equipment up gradation but not restricted to them.

ASSESSMENT CRITERIA:

The relevance proposal to call objectives need to be conclusively established. The proposal relevant to call objectives will be evaluated based on following criteria:

a. Need assessment and demand for proposed work,
b. Scientific appropriateness of deliverable of proposed approaches and technical merit
c. Expertise, facilities and track record of team. Appropriateness of industrial partner competence of each member, facilities available to conduct research
d. Proposal formulation. Literature/patent review, qualified objectives, methodology and work plan, clear and well defined deliverables.
e. Potential to proliferate solar energy deployment, competiveness of performance and cost goals.

INDICATIVE PROJECT TOPICS:

The interdisciplinary and transformative R&D proposals leading to development of efficient devices and system that could be adopted in the real field/industry utilization with well-identified /suitably quantified, scientific and technological gaps would be preferred while proposal on fundamental science, material science and study of properties etc would not be acceptable under the call. The scientific outcome of the proposal should have clear connection with application in field.

The following research emanating from several scientific discussion and consultation with stakeholders has been identified as focus of this call. However any other topic which could lower the cost of solar energy through technological innovations can also be proposed. In all cases, the proposal should be developed based on clearly felt a need and demand for the research endeavor. Proposal falling in either segment of Solar Energy viz. photovoltaics, thermal, storage, grid integration, building energy efficiency or cross cutting across them would be eligible for support. The identified thematic research topics are:

Thermal

- High Efficiency Power blocks and related components (heat exchangers, compressors, expanders, etc) with targeted capacities and efficiencies:-

  - Medium (150°C) to high temperature (300 °C) CSP technology based ORC systems.
  - Supercritical/ultra supercritical steam power cycles based systems
  - Supercritical CO_2 based Brayton cycle based systems.
  - Low capacity Stirling and alternate Engines.

- Heliostats, Dishes and Parabolic troughs: Materials, Designs and layouts; Reducing shading and blocking, Improving intercept factors, Reducing of Tracking Power and Costs, Optimization of reflector size, Ganging of reflectors, Cleaning systems.
- Receiver related issues: Maximization of efficiency & Minimisation of Optical & Thermal Losses: Optimization of receiver geometry, Radiation shields and windows, etc., Coatings, Integral Receivers, Heat transfer fluid specific (air, CO_2, direct steam, etc.) designs.
- Indigenization of Key CSP System Components taking in to account material availability and manufacturing capability; Development of medium capacity prime movers and components.
- Support Structure related studies including new low cost materials, Material compatibility, Protective coatings, design optimization for cost, stability under wind and thermal loads.
- Characterization and performance testing standards and facilities for components of CSP technologies such as Reflectors (including materials and coatings), Receivers (including selective coatings for high temperature applications, intensity profiling, etc) Prime movers, Heat exchangers and Heat transfer fluids.
- Benchmarking of optical and thermal design codes/methodologies and layouts for Dish, Heliostat and Parabolic trough/ Linear Fresnel fields
- Dust mitigation for thermal systems in India context.
- Thermal desalination of brackish sea water to produce potable water; material related issues and novel cost effective technologies.
- Integration of poly-generation (multi input and multi-output) technologies/novel thermodynamic cycles and configurations

- Material Compatibility issues such as corrosion, erosion, thermal stability and volume expansion
- Life cycle stability and thermal cycling fatigue issues.
- Matching up overall system dynamics with designed storage (Charging, discharging, cost effective heat transfer enhancement techniques, heat transfer issues)
- System hybridization / integration, packing arrangement, heat transfer fluid compatibility, size-to-capacity ratio
- Design of systems based on fast charging and controlled discharging, especially for Electro chemical /Thermo-chemical Systems

Photovoltaics

- Fabrication of Silicon based devices, non-silicon devices, organic solar cell, dye sensitised solar cell, hybrid solar cell
  - Large area devices with target efficiency equal or greater than current international benchmarks (based on the emerging fields of optical metamaterials, plasmonics, quantum technology, nanotechnology, new materials like perovskites and polymer semiconductor science etc)
  - Pre-commercial scale devices encompassing novel processes of high through put, better power conversion efficiency, stability, reliability etc with commensurate reduction in cost
  - Fabrication of devices on substrate; glass, plastic, steel, cloth, paper etc. for targeted application.
- Import substitution of cost effective precursors/components/ systems/dyes/ inks/ jigs/ high purity material etc.
  - Development of energy harvesting modules
  - Development of efficient metalisation paste/ encapsulation and supportive materials
  - Dust repellant/self cleaning coatings/systems.

Grid Integration

- Matching up intermittent solar energy with development of appropriate storage system
- Solar pumps for field irrigation
- Advance PV panel failure detection systems
- Smart networks for renewable integrated sources both for stand alone and grid interactive.
- Augmentation of distribution network with frugal control system to couple renewable power in rural areas.
- Cost effective smart system for Roof top SPV
- Development and field performance of smart grid systems for islanded and re-synchronizable systems

SUBMISSION OF PROPOSALS: General guidelines for submission of proposals may be seen at Section III.

III. GENERAL GUIDELINES (FOR BOTH THE STREAMS)

PROJECT FORMULATION:

The proposals should clearly define the objectives and list the deliverables. The Methodology should be given in detail. For system and/or component development proposed, the deliverable should include a target performance, and establish in the proposal how their proposed process/ product/system stands in comparison to comparable national and international ones in terms of performance and projected cost. The CV of the project investigators should be brief and highlight their competence and experience related to the proposed project. Consortia may be formed wherever necessary by clearly explaining the need for forming the consortia and the roles and responsibilities of each partner. The industry partner should have proven standing and R&D capability in the area related to Solar Energy Technologies and should exhibit the potential to commercialize the products / systems developed under the proposal. The extent of participation and contribution of the industry partner should be clearly defined.

PROPOSAL SUBMISSION:

Note: Kindly note that:

- The PI can submit only one proposal against this SERI Call either in *stream A or stream B*. Submission of more than 1 proposal from a PI, would liable to be disqualification of all the submitted proposal.
- PIs who have been awarded a proposal from DST under Solar programme in last 18 months cannot apply.

Submit following documents in an Envelope marked "SERI Call/ Mention Name of Stream/ 2016: Name of Principal Investigator":

A. 3 copies of complete project proposal in prescribed format with all enclosures (1 marked original + 2 hard copies)
B. Soft copy in CD:
   i. Complete proposal (MS word and PDF)
   ii. Executive Summary of the proposal as given in Project Proposal format (in MS word document only)

The complete set of documents are to be addresses to: Mr. Vineet Saini, Scientist 'D', Room no 5, Hall-J,S&T Block II, Technology Mission Cell, Department of Science &Technology (DST), Technology Bhavan, New Mehrauli Road, New Delhi- 110016 and should reach latest by 17:00 hrs on 31st May 2016. Soft copy of Project Proposal and the Executive Summary (MS word) is also to be e-mailed (Email Subject: Mention Name of Stream/ Call- 2016/ Name of Principal Investigator/ Name of Institute) to sertmd2016@gmail.com.

SOLAR ENERGY RESEARCH INITIATIVE (SERI)

FORMAT FOR SUBMISSION OF PROPOSAL

CONTENTS

I. Executive Summary

(To be limited to two A-4 pages)

Ensure to read the Guidelines (in italics fonts) and fill the selected/relevant text only in the boxes

1.	***Stream Name*** *(Select the stream you are applying for)*	***SER:***	***COMPS:***

2.	Project Title		
3.	Project cost *(Amount in lakhs)*	DST:	Collaborator(s) *(if any):*
4.	Duration *(in months)*		
5.	PI Name Date of Birth		
6.	Co-PI (s) Name Date of Birth		
7.	Lead Organisation		
8.	Status of Lead Organisation	*Recognized universities and academic institutions/ National Laboratories/R&D institution,/Research organizations recognized by DSIR/Others-Specify the affiliation clearly (Govt /govt. undertaking/govt.-aided/private institution)*	
9.	Collaborator/Consortium partner name(s), *if any*	*(Consortium may be formed wherever necessary. In sections 11 and 12 of the proposal, clearly explain the need for forming the consortium and the roles and responsibilities of each partner).*	
10.	Collaborators'/ Consortium partners' Status	*(In case of private sector company, please indicate **DSIR** registration number of recognition of in-house R&D units)* *(Industry partner should have proven standing and R&D capability and should exhibit the potential to commercialize the products / systems developed under the proposal. The extent of participation and contribution of the industry partner should be clearly defined in the proposal).*	
11.	Objectives	***(Precise and quantified)***	
12.	Methodology	***(Highlight the novelty and unique aspects of the proposal)***	
13.	Deliverables	*(Deliverables should include target performance and projected cost when commercialized, and how these targets compare with existing national and international ones)*	

13. Budget details:

A.	Project Manpower *(Post & Nos* *Research group/ institution-wise if more than one institutions are involved)*	DST: (*JRF/SRF/Research Associate/ Project Assistant / other Professional Manpower)*	Collaborator(s):
B.	List of Equipments required *(Research group/ institution-wise if more than one institutions are involved)*	DST:	Collaborator(s):
C.	Fabricated system /prototype, if any	DST:	Collaborator(s):
D	Nature of Contribution from Collaborators	In Cash & Kind *(Please elaborate)*	

14. Funds requirements from DST:

(All amount in lakh)

S. No	Item Head	1st Year	2nd Year	3rd Year	Total (Rs.)
A	**Non-recurring (Capital Items)**				
1	Permanent Equipments				
2.	Plant cost /Fabricated systems/ Demonstration models				
	Sub total (capital items)				
B	**Recurring Items (General)**				
1.	Manpower				
2.	Consumables				
3.	Contingencies				
4.	Travel				
5.	Other Costs (Outsource work etc),if any				
6.	Overhead				
	Sub total (General)				
C	**Total cost of the project (A+B)**				

A. Total requirement of funds from DST =
Mention break up of the total funds in case of multi institutional projects=

B. Contribution of participating institution(s), if any=

Total project cost (A+B) =

II. CORE PROPOSAL

(Kindly ensure to read the guidelines (in italics fonts) and fill the text accordingly)

1. **Project Title**

2. **Lead Principal Investigator (PI)***

Name:

Designation:

Complete Address *(with city pin code):*

Telephone & Mobile No. :

E-mail:

Co-Principal Investigator(s) (Co-PIs)

Name:

Designation:

Complete Address *(with city pin code):*

Telephone & Mobile No. :

E-mail:

3. **Consortium partner organization(s) / collaborator(s):**

Name(s) of Co- Principal Investigator(s)*:

Designation:

Complete address *(with city pin code)*:

Telephone & Mobile No. :

E-mail:

(PI age should not exceed the superannuation age during the duration of project and must be regular employee of organization. Project shall not be considered in absence of Co- PIs. .Lead Principal Coordinating Investigator has to be identified in case of Consortium Projects)*

4. **Collaborating Agencies/Industries** *(If any)*

(Consortia may be formed wherever necessary. In sections 11 and 12 of the proposal, clearly explain the need for forming the consortia and the roles and responsibilities of each partner.)

5. **Target Beneficiaries**

6. **Objectives of the Proposal**

(Precise and quantified: Estimated possible values, Use bullet form)

7. **Critical Review of Status Identifying Gaps**

(***include important references & IPR survey****)*

7.1 National Status Review

7.2 International Status Review

8. Novelty / uniqueness of the Proposal *(not more than 50 words)*

9. Outline of the Project

(*Define the problem and give technical details including schematics wherever necessary)*

10. Deliverables of the project *(select the relevant option and give its brief details .(Deliverables should have a clean connect with its utilisation in field and indicate performance and projected cost when commercialized, and mention how these targets compare with existing national and international ones)*

i) New/Upgraded Product:
ii) New/Upscaled Process:
iii) New/ Upgraded System:
iv) Services (including software):
v) Performance analysis: (Scientific data generation, analysis and evaluation)
vi) Feasibility analysis:
vii) Technological Capability:
viii) Database development and documentation:
ix) Proof of new concepts at a device level.
x) Achieving State of art performance in a chosen device

11. Methodology

(This section should also include preliminary/background work done by all the investigators, which is relevant to the project. The description of methodology should adequately demonstrate the pathways, main work element etc and highlight the capability of the investigators to achieve them)

12. Work Plan (*mention project activities and Highlight Milestones)*

Sl no.	***Activity/Milestone***	***1st year***		***2nd year***		**3rd year**	
		1-6 M	***6-12 M***	***13-18 M***	***19-24 M***	***25-30 M***	***31-36 M***
A1							
A2							
-							
**	*Draft completion report for review (3 month prior to date of completion)*						

13. Names of 5 Experts/Agencies/ Institutions working in the similar area

(Please give complete Name, Designation, Email, Address with pin code, telephone number)

14. Any other information relevant to the Project proposal/ execution of the project

(Importance of the proposed R & D to India ,Group strength, site details, economic analysis, Institutional Details etc)

15. Facilities and Infrastructure already available to the PI(s) at their Institute for Implementing the project.

S.no	Equipment Name / Funding Source	For which purpose it would be utilised in current project

III. BUDGET ESTIMATES

Break-up of Total Budget

I. Funds requirement from DST **All amount in lakh**

Institute name in consortium	**Capital Items (A) (Non- recurring) (Rs.)**	**Other items (B) Recurring head (Rs.)**	**Total (C = A+B) (Rs.)**
Total			

II) Nature of Contribution from Collaborators, if any : Cash / Kind *(Please elaborate)*

III) Total cost = Rs. (DST) + Rs. (Cash amount provided by Collaborator,if any) = Rs.

Budget

(* To be given institution/ research group-wise in case of consortium projects)

Name of the Institute :

a) DST Support (All Amount in Lakh)

S. No	**Item Head**	**1st Year**	**2nd Year**	**3rd Year**	**Total (Rs. In lakh)**
A	**Non-recurring (Capital Items)**				
1	Permanent Equipment				
2.	Plant cost /Fabricated systems/ Demonstration models				
	Sub total (capital items)				
B	**Recurring Items (General)**				
1.	Manpower				
2.	Consumables				
3.	Contingencies				
4.	Travel				
5.	Other Costs (Outsource work etc),if any				
6.	Overhead				
	Sub total (General)				
C	**Total cost of the project (A+B)**				

Details of Itemized Budget

(To be given separate for each institution/ research group-wise in case of consortium projects)*

Name of the Institute :

A. Non-recurring (Capital Items)

A1. Equipment*

Budget for Permanent Equipment (To be borne by DST**)**

Description of Equipment	**Unit Landed Price (CIF+ Custom Duty/ Taxes + others charges etc)* (Rs.in lakh)**	**Nos. of Equipment**	**Total Cost (Rs. in lakh)**	**Justification in context of proposed work.**
		Gross total =		

Page/sheet indicating the total landed cost in Indian rupees(* ***Ensure to mention Currency Exchange rate considered in case of imported equipments,* *freight , taxes, spares, special installation, etc)* ***Please project the actual cost taking into account reliable cost estimates as no cost revision would be admissible***

A2. Fabrication system: Tailor made models/ experimental set up (if any)

i) Budget for Fabrication system/Tailor made items

Description of fabricated system	**Unit Landed Price (CIF+ Custom Duty+ others charges)* (Rs in lakh)**	**Nos. of Equipment**	**Total Rupees (Rs. in lakh)**	**Justification in context of proposed work**

	Gross total

Page/sheet indicating the total landed cost in Indian rupees(**Ensure to mention Currency Exchange rate considered in case of imported equipments, freight , taxes, spares, special installation, etc) **Please project the actual cost taking into account reliable cost estimates as no cost revision would be admissible***

B. Recurring Items (General)
B1. Manpower

Designation*	**Educational Qualification**	**Experience in years, if applicable**	**Justification**

(* Refer latest guidelines at DST website)

Manpower Budget
JRF /SRF/ Research Associates/ Project Assistants Details (applicable for the given category)

Designation	**Total Emoluments (in Rupees)**				**No. of persons**	**(Inclusive of all Allowances) Total Amount (Rs.)**
	1st Year	2nd Year	3rd Year	Total (1st +2nd+3rd Years)		
	Gross amount required for manpower budget head =					

Please mention category/ class of city for admissible HRA along with %.

B2. Consumables

Budget for Consumable Materials (*To be borne by DST***)**

Items	**Unit Price**	**Qty Neeeded**	**Amount (Rs. in lakh)**	**Justification**
Gross total =Rs lakh				

B3. Contingencies

Budget for Contingencies (*To be borne by DST***)**

Items *(unforeseen expenses, patents,report preparations etc)*	**Amount (Rs. in lakh)**	**Justification**
Total		

B4. Domestic Travel*

Budget for Domestic Travel (To be borne by DST**)**

Items (to attend)	**Total Amount**	**Detailed Justification (In case of extensive field visits needed in project indicating breakup of cost w.r.t. to journeys, mode and class of transport needed)**
Review meetings		
Total		

(*) Foreign travel is generally not permitted under DST grants. Class and mode of transportation should be as per the entitlement of the concerned staff in the institute.

B5. Other Costs ,if applicable

Budget for Other Costs (To be borne by DST**)**

Item	**Total (Rs. in lakh)**	**Detailed Justification (derived cost calculation and relevant Quotation at Annexure- / page no*)**
Outsource work		
Other items,if any		
Gross total =	Rs.	

Collaborator budget / Contribution

Submit similar above detail breakup for each collaborator, if any

Organization details:

a. Designation of the financial authority in organization:

b. Whether organization registered with Govt. of India Public Financial Management System* (PFMS): Yes/ No

c. If not, please get it registered as soon as possible at PFMS website which is mandatory. If yes, inform Agency code registered at PFMS

IV. Proforma for Bio-Data of Principal Investigator(s) (PI), Co-Principal Investigator(s) (Co PI) and Coordinating Investigator of each partner Institution (Please be brief and follow the format)

1. **Name**

2. **Gender**

3. **Date of Birth**

4. **E-mail ID**

5. **Qualifications**

S. No.	Degree	Institution	Year	Division/Class

6. **Employment Experience**

S. No.	Position & Organisation	Nature of Job	Period

7. **Selected List of Ten Best Publications** *(relevant to the proposed project)*

8. **Patents filed/Granted with details** *(relevant to the proposed project)*

9. **Books Published /Chapters contributed** ***(relevant to the proposed project)***

10. **Sponsored Research Projects (last five years)**

S. No	Title	Sponsoring Agency and Officer Concerned	Period	Amount	Achievements

a. Consultancy Projects (last five years)

S. No	Title	Sponsoring Agency	Period	Amount

b. Sponsored Research/Consultancy Projects submitted for approval

S.No.	Title	Funding Agency	Duration	Amount

11. Awards and Honours:

A. National list

B. International list:

12 Technologies Developed / Transferred:

(please provide details of technologies transferred to industry, technologies commercialized)

Date (Signature of PI)

V. UNDERTAKING FROM THE INVESTIGATOR(S)

Project Title:

1. I/We have carefully read the terms and conditions of the Solar Energy Research Initiative (SERI) Programme and I/We agree to abide by them.
2. I/We have not submitted this or a similar Project proposal elsewhere for financial support.
3. I/We have explored and ensured that the equipment and the basic facilities described in the Research Proposal, will actually be available as and when required for the purpose of the Project. I/We shall not request financial support under this project, for procurement of these items.
4. I/We undertake that spare or idle capacity of the permanent equipment procured under the project will be made available to other legitimate users from parent and other organizations.
5. I/We have enclosed the following :

A Endorsement from the Heads of the Institution
(on letter head)

B Undertaking from the Collaborator(s)
(on letter head)

C Complete Project Proposal with all enclosures
*(1 marked' **original'** + 2 hard copies + 1 soft copy as .doc file)*

Name(s) and Signature(s) of the Investigators*

Date

Place

(* To be signed by PI and Co-PI of each Participating Institution)

VI. ENDORSEMENT FROM THE HEAD OF THE ORGANISATION

(*To be typed on the letter-head of the organization*)
(To be provided by each of the participating Institutions)

Project Title

1. Certified that the organization welcomes the participation of Dr/Mr/Mrs ……..as the PI and Dr/Mr/Mrs……as the Co-PI for the project and that in the unforeseen and legitimate event of discontinuation by the PI, the Co-PI will assume full responsibility for completion of the project. Information to this effect, endorsed by me, will be promptly sent to the DST.
2. Certified that the equipment, other basic facilities and other administrative facilities as per the terms and conditions of the award of the Project, will be extended to the investigator(s) throughout the duration of the project.
3. The Organization shall ensure that financial and purchase procedures are followed as per the prevailing norms of the organization, within the allocated budget.
4. The Organisation shall provide timely the Statement of Expenditure and the Utilisation Certificate of the grant as required by the DST in the prescribed format.
5. **The grant for the proposal, if approved , the funds shall be transferred to following organization account :**

1	Name of A/c holder (as per Bank record)	
2	Bank Account No.	
3	Bank Branch Name & Address	
4	MICR Code	
5	IFSC Code	
6	E-mail (Agency /PI)	
7	Mobile No. (Agency/PI)	
8	Unique agency code*	

*** Refer website : https://pfms.nic.in/Users/LoginDetails/Login.aspx?ReturnUrl=%2f**

(Head of the Institute)
Seal/Stamp

Date
Place

VII. Endorsement from collaborating Industry/ Agency *(if any)*

(On the official letter head)

I have gone through the Project proposal entitled…….. submitted by ……*(Name of PI)* …of…….*(Name of the Institute)* for DST funding and noted the obligations and responsibilities indicated in our name which are as below :

1. Contribution in financial terms *(mention amount in Rs.)*

2. Contribution in kind *(list activities)*

I hereby affirm that my organization/ industry is committed to participate in the Project to the full extent as indicated including financial liabilities accruing therefrom as detailed above. A brief profile of my organization is summarised below:

Name of Organisation
Line of Business/ Major Products
No. of employees
Annual Turn over

The Annual Report for the last financial year is enclosed.

(Head of the Organisation)
Seal/Stamp

Date
Place

Annexure- I

Department of Science & Technology
Solar Energy Research Initiative (SERI) Programme
Terms & Conditions of the Grant

1. Approval of the Research Proposal and the grant released for it is for the specific Project sanctioned and the released grant should be exclusively spent on the Project within the stipulated period. The Institution may use funds obtained from any other Organisation with the concurrence of DST, for the Project. **Any un-spent balance out of the amount sanctioned must be surrendered to the Government of India through a crossed Cheque/ Demand Draft drawn in favour of Drawing & Disbursing Officer, DST, New Delhi.**

2. For permanent, semi-permanent assets acquired solely or mainly out of the Project grant, an audited record in the form of a register shall be maintained by the Grantee Organisation. The term "Assets" include (a) the immovable property acquired out of the grant; and (b) movable property of capital nature where the value exceeds Rs 50,000/-. The Organisation is required to send to the Department of Science & Technology a list of Assets acquired from the grant. The grant shall not be utilized for construction of any building unless a specific provision is made for that purpose. Full infrastructural facilities by way of accommodation, water, electricity, communication, etc. for smooth implementation of the Project shall be provided by the Organisation.

3. All the Assets acquired from the grant will be the property of the Government of India and should not be disposed off or encumbered or utilized for purposes other than those for which the grant had been sanctioned, without the prior sanction of DST. These should also be reflected on you website.

4. At the conclusion/ termination of the Project, the Government of India will be free to sell or otherwise dispose off the Assets which are the property of the Government. The Organisation shall render to the Government necessary facilities for arranging the sale of these Assets. The Government of India has the discretion to gift the Assets to the Organisation or transfer them to any other Organisation if it is considered appropriate.

5. The Organisation / PI will furnish Six-Monthly Progress Report *(5 copies)* of the work on the Project on half-yearly basis form date of start. The first half-year period shall be rounded off to the last date of the sixth month. The subsequent periods of six months shall begin from the first day of the following calendar month. In addition, DST may designate a Scientist/ Specialist or an Expert Panel to visit the Organisation periodically to review the progress of the work being carried out and to suggest suitable measures to ensure realisation of the objectives of the Project. During the implementation of the Project, the Organisation will provide all facilities to the visiting scientist/ specialist or the Expert Panel by way of accommodation, etc. at the time of their visit. On completion of the Project, final consolidated "project completion report " on the work done on the project will be prepared after incorporating the suggestions ,if any, from the

revieers of the project and ten copies of the same will be submitted to Project Completion Report as per the DST format on the work done on the Project should be sent to DST.

6. At the time of seeking further installment of the grant, the Organisation/ PI has to furnish the following documents:

a) Utilisation Certificate **(UC)** and Statement of Expenditure **(SE)** for the previous financial year (in original or copy if sent earlier);

b) An authenticated Statement of Expenditure **(SE)** including committed Expenditure for the Project **till the previous month**.

c) Progress report ,if not sent earlier.

7. Request for specific approval of DST to **carry forward** the unutilised grant to the next financial year for utilisation for the same Project, should be sent along with UC and SE, after completion of the financial year.

8. **The Comptroller & Auditor General of India, at his discretion, shall have the right of access to the books and accounts of the Organisation maintained in respect of the grant received from the Government of India.**

9. The Organisation will maintain separate audited accounts for the Project and would keep the whole of the grant in a bank account earning interest, the interest thus earned should be reported to DST and should be reflected in the Statement of Expenditure. The interest thus earned will be treated as a credit to the Organisation to be adjusted towards further installment of the grant.

10. The Organisation will neither entrust the implementation of the work (except the out-sourced part as approved) for which the grant has been sanctioned to any other Organisation nor will it divert the grant receipts to any other Organisation as assistance. In case the Organisation is not in a position to implement or complete the Project, it should, forthwith, refund to DST the entire grant received by it or the balance grant remaining with it.

11. All the personnel including Research personnel appointed under the Project, for the full/ part duration of the Project, are to be treated as project personnel on contract to organization and will be governed by the administrative rules/ service conditions (for leave, TA/DA, etc.) of the implementing institute.. They are not to be treated as employees of the Government of India and DST will have no liability, whatsoever, for the project personnel after the completion of the Project duration.

12. For expeditious implementation of the research Project, PI will take the assistance of the Organisation in the process of selection and appointment of staff and payment to them. Pay Scale

and emoluments for the posts not covered under DST's OM are governed by the norms prevalent in the implementing Organisation or as decided in consultation with DST.

13. **DST reserves the right to terminate the Project at any stage if it is convinced that the grant has not been properly utilised or sufficienct progress has not been reported under the project or sufficient effort have not been devoted.**

14. **The Project becomes operative with immediate or within a maximum of 1month from the date on which the funds is received by the implementing Organisation.** This date should be immediately intimated by the Grantee authorities/ Principal Investigator to DST.

15. The grantee organization shall associate a Co-PI with the project ,if not already a part of the project team. The Co-PI shall function as PI in the absence of PI and should be totally in knowledge of the activities of the project to avoid loss to the project , in case PI leaves the organization.If PI to whom a grant for a Project has been sanctioned wishes to leave the Grantee Organisation where the Project is sanctioned , Grantee Organisation/PI will inform DST of the same and in consultation with DST, evolve steps to ensure successful completion of the Project through co-PI before relieving the PI or appoint another equivalent position officer as PI.

16. Investigator(s) wishing to publish technical/ scientific papers based on the research work done under the Project, should acknowledge the assistance received from DST, indicating the Project sanction number under which Grant has been given to the Grantee organization So PI will submit a copy of the paper to the ministry as soon as it is published.

17. If the results of research are to be legally protected under the IPR , the results should not be published without action being taken to secure legal protection for the research results. For further information/ clarification on this subject The Director, Technology Information, Forecasting and Assessment Centre (TIFAC), Patent Facilitating Cell, Vishwakarma Bhawan, Shaheed Jeet Singh Marg, New Mehrauli Road, New Delhi- 110016, tifac@nda.vsnl.net.in, may be contacted.

18. If the results of the work carried out under the grant require preparation of a technical booklet/guides/software/CD etc. in such cases the grantee organization will publish/prepare sufficient copies (number of copies to be decided in consultation with DST) and keep a portion for their use/ dissemination and submit the remaining copies to the Ministry for their use and distribution.

19. If the result is in the form of a survey repot/ product performance evaluation or other such activities which have commercial implications, the grantee organization will not publish the results without specific written approval of this Ministry.

20. The grantee institution/PI should provide a copy of the 'FullText Document' of the patent within one month of its publication**.**

21. The grantee organization(s)/ Inventor(s) are required to seek protection of Intellectual Property Rights for the results/ output of the sanctioned projects. The terms and conditions regarding IPR issues shall be in accordance with the guidelines contained in the DST issued with the concurrence of Ministry of Finance, Department of Expenditure vide their O.M. No.33 (5) PF-1199, dated 22nd February, 2000 or subsequent circulars which may be issued by DST/MOF on the subject.

22. In case of any dispute the decision of Secretary, Ministry of Science and Technology shall be final.

Research manpower Guidelines:

DST Emoluments for Research Personnels (wef 01.10.2014)

:

A. Junior Research Fellow (JRF) / Senior Research Fellow (SRF)

Sl. No.	Designation & Qualification	Emoluments per month
I	**Junior Research Fellow (JRF)** Post Graduate Degree in Basic Science with NET qualification or Graduate Degree in Professional Course with NET qualification or Post Graduate Degree in Professional Course	Rs. 25,000/-
II	**Senior Research Fellow (SRF)** Qualification prescribed for JRF with two years of research experience	Rs. 28,000/-

The local institution shall review the performance of JRF after two years through an appropriate Review Committee constituted by the Head of the Institution. The fellow may be awarded SRF after successful assessment by the Review Committee.

B. Research Associate

Research associates may be fixed at a consolidated amount at one of the 3 pay levels given below depending upon the qualification and experience. The Institution/Organization

concerned may decide the level in which a particular associate should be placed based on the experience. The Essential Qualification (EQ) for RA is as follows:
Ph. D/MD/MDS or equivalent degree or having 3 years of research, teaching and design and development experience after MVSc/M.Pharm/ME/M.Tech with at least one research paper in Science Citation Indexed (SCI) journal.

Sl. No.	Category	Emoluments per month
I	Research Associate-I	Rs. 36,000/-
II	Research Associate-II	Rs. 38,000/-
III	Research Associate-III	Rs. 40,000/-