

## ANNEX E

### OPERATION OF FUNDS AND PROGRESS REPORT

1. Title of the Project: Study of performance and safety parameters of Wearable E-Textile for Heating Application	Project number: LITD 0004
2. Name & Address of Project leader: Kankat Ghosh, Department of Electrical Engineering, Indian Institute of Technology Jammu - 181 221	Date of Commencement: dd/mm/yyyy 01/07/2024

3. Details of Equipment Purchased (if any):

Name of equipment	Cost	Supplier	Date of purchase/ placing order for each item of equipment
NA	NA	NA	NA
NOTE - The equipment fund once fixed cannot be enhanced. Project leaders are advised to give authenticated estimates of the cost of equipment. Equipment should invariably be purchased within 1 month from the date of receipt of the fund and/or sanction letter.			

4. Fund received Rs. 191565 .

5. Expenditure made in Rupees: (Please provide the details)

Expenditure	Amount	Taxes (as applicable)	Total
Manpower cost	81290	NA	81290
Consumables	18111.91	3,260.14	21,372.05
Equipment	NA	NA	NA
Travel	24306	NA	24,306
Others	64500	NA	64,500
Grand Total	1,88,207.91	3,260.14	191468.05

6. Amount saved (if any) from the last instalment: Rs 96.95

7. Date on which scheme will complete its normal tenure of months 31 Dec 24 .

8. Whether extension beyond normal tenure has been requested. Yes/No.

If yes, justification for extension and programme of work to be completed. Also mention as to why the work could not be completed as per the original plan.

{Extension beyond normal tenure should be requested at the Project Monitoring Session before end of tenure (as given in ToR)}.

9. Constraints (if any) faced in the progress of work and suggestions to overcome them.

The industries are reluctant to entertain the factory visit. They stop picking call after one or two

interactions. It is being difficult to schedule a visit to the companies.

Suggestion: It will be great to have a letter under BIS letterhead that we are doing this survey based project for the study of performance and safety parameters of wearable E-Textile for heating applications

10. Any deviation from original plan with its nature and cause.

Just to mention the delayed notification of project start date (around end of July) which further delayed in employing the manpower. However, we have worked hard enough to complete the tasks. The manufacturers identified and communicated but they did not respond well so far. One of them is visited and relevant data are collected. The rest will be followed up in the next phase.

11. List of publication giving full bibliographic details accrued from this project (copies of the paper (s) should be enclosed).

NA

12. Summary of work done (200 words).

Have reviewed literature and other international standards that would relate to the heated wearable e-textiles. Have identified few Indian manufacturers and initiated correspondence asking for industrial visits and samples. Have made a plan for testing methods possible during the next phase of the project work. Have made preliminary arrangements for testing. Have developed few hardware to support the test. More importantly we have made a custom firmware to work with a custom-made thermal camera for the temperature measurements and mapping which will be the main test hardware required for the next phase of the work. One manufacturer site is visited and the required data are collected. The electrical tests on various samples from different companies are done. The results are compiled.

13. Proposed programme of work for the next month (1000 words).

For the next month, we intend to follow up closely with the identified manufacturers for industrial visits, sample and data collection. Will procure different samples in different categories offered by the manufacturers. They will be tested for performance, safety and durability and its findings will be reported and results analyzed.

Task	Timeline	Month 5			
		W1	W2	W3	W4
1. Preparation of the 1 <sup>st</sup> phase report					
2. Visit to Industry					
3. Purchase of consumables					
4. Purchase of the products under test from the industries					
5. Experiments on the samples and analysis of results					

14. Detailed Progress Report enlisting the objectives in beginning briefly (up to five pages maximum).

Attached herewith as a PDF file with name – ‘Phase 1 report LITD 0004’



Signature of Project leader

(Kankat Ghosh)

Date: 20<sup>th</sup> October, 2024

Note: No column should be left blank; write not applicable (NA), wherever applicable.