

**FORMAT
For
PROJECT COMPLETION REPORT FOR
RPS PROJECTS**

(Please include sufficient details in sections 8-10 so as to facilitate proper evaluation of your project.)

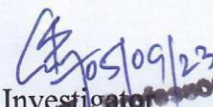
File No. : File No.8-142/RIFD/RPS-NER/Policy-1/2018-19
(as mentioned in sanction letter)

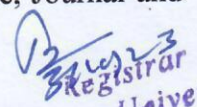
Date of Sanction : 14.03.2019

Subject Area : Engineering

1. Principal Investigator : Prof. Soumik Roy, Dept of ECE, Tezpur University, Nappam Post, Tezpur, Assam – 784 028.
2. Project Title : Design and Implementation of Low Cost Hybrid aquaponics System
3. Total Cost of the Project : Rs. 21,86,000.00
4. Date of Commencement of the Project : 05.04.2019
5. Duration of the Project : 03 Years (Extended till 30th April'2023)
6. Date of Completion : 30th April'2023
7. Objectives of the Project : Annexure-II
8. Salient Research Achievements : Annexure-III
 - 8.1 New Findings/Achievements/IPR Potential : NIL
 - 8.2 Product/Process Developed : Complete Hybrid hydroponics systems is developed (Annexure-III)
 - 8.3 Patent(s) Applied for/Taken, if any : NIL
 - 8.4 B. Tech. Project / M. Tech Thesis / : B. Tech. Project (02 Batch)
9. Conclusions Summarizing the Achievements Indicating the Scope for Future Work. Annexure-III
10. List of Publications Arising from the Project (please give Author (s), Title, Journal and Year) : 01 under review

Dated:


Principal Investigator
Department of Electronic & Comm. Engg.
Tezpur University


Registrar/Director/Principal
(Signature & Seal)
Tezpur University

(Investigators may please note that sections 8-10 of the report will serve as essential inputs for experts to judge the success of the project. These must therefore be included in sufficient detail.)


FORMAT FOR GENERAL FINANCIAL RULES

(FORM GFR- 19)

Assets acquired wholly or substantially out of Government grants

Register maintained by grantee institution
Block Account maintained by sanctioning authorities
Name of Sanctioning Authority

1. Serial No. : 01
2. Name of grantee institution : Tezpur University
3. No. and date of sanction : File No.8-142/RIFD/RPS-NER/Policy-1/2018-19 Date: 14.03.2019
4. Amount of the sanctioned grant : Rs. 21,21,000.00
5. Brief purpose of the grant : Design and Implementation of Low Cost Hybrid aquaponics System
6. Whether any condition(s) regarding the right of ownership of Government in the property or other assets acquired out of the grant was incorporated in the grant-in-aid sanction : NO
7. Particulars of assets actually credited or acquired : As per UC Non-recurring items
8. Value of the assets as on 03.04.2023: Rs. 15,34,995.00
9. Purpose for which utilized at present: Project work
10. Encumbered or not: No
11. Reasons if encumbered:
12. Disposed of or not: No
13. Reasons and authority, if any, for disposal : N/A
14. Amount realized on disposal: N/A
15. Remarks:


Registrar/Director/Principal
(Signature & Seal)
Tezpur University

Annexure-II


Project Title : Design and Implementation of Low Cost Hybrid aquaponics System

Objectives of the Project :

Agriculture is one of the sector that has an important role in human life. Aquaculture is globally the fastest growing sector of agriculture that needs to be sustainable and must also meet bio-economic demands. Traditional agriculture methods for growing plants require huge land space, time and manpower. The proposed project aims to design and implement an advanced aquaponic system for raising fish and plants in re-circulating system where the fish provide nutrients and beneficial bacteria to plants, the plants then cleanse the organic matter and nutrients in water and return it back to the fish.

The main objectives of the proposed project is to design and develop an efficient aquaponics system that can synergize fish farming and plant growing. This system can be divided into following four parts-

1. Hydroponics Piping and Pumping
2. Aquaculture (fish)
3. Plants.
4. Sensors data acquisition system
5. Control and management unit to process data and execute the control operations.


05/09/23

Annexure-III

Project Title : Design and Implementation of Low Cost Hybrid aquaponics System

Salient Research Achievements :

The study introduces a new method for monitoring aquaponics through the utilization of a modularized Internet of Things (IoT) system that incorporates edge-computing capabilities. The present system effectively tackles various constraints often observed in traditional handheld aquaponics systems, such as notable time delays, labor-intensive procedures, suboptimal effectiveness, and restricted expandability. This study has examined the integrity of monitoring parameters within the aquaponics system and has identified the potential for concurrent remote monitoring and intelligent control of the environment, water quality, and plant growth conditions. The proposed system aims to ensure the effective functioning of an aquaponics system and provides a basis for investigating the cultivation-breeding ratio to a limited degree. Regarding the environmental and water-quality parameters, the system effectively addresses numerous challenges associated with conventional handheld aquaponics systems, including significant latency, labor-intensive operations, low efficiency, and limited scalability. Moreover, the incorporation of edge computing was implemented to establish an end-edge-cloud system architecture, with the purpose of overseeing the growth conditions of plants within the aquaponics system and enhancing the system's cognitive capabilities. The aforementioned approach involves the relocation of computing tasks from the data center to the edge sensor, thereby facilitating the segregation of high energy-consuming image data and low energy-consuming sensing data. This demonstrates that the utilization of edge sensors can enhance the promptness of data computation, mitigate the burden on network traffic, optimize the effectiveness of data transmission, and bolster the expandability of the system. The test results show that the system can provide stable local data collection and remote transmission, trend curve plotting, and database storage services for aquaponics systems effectively. The empirical evidence demonstrates that the measurement data of the system effectively represents the condition of the system.

Product/Process Developed : Complete Hybrid hydroponics systems is developed



Introduction

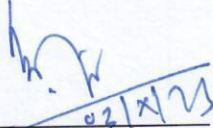
1. Design and Implementation of Low Cost Hybrid Aquaponics System




AUDITED UTILISATION CERTIFICATE

Certified that out of **Rs. 21,21,000.00** of Grant- in – aid sanctioned during the year 2019 Letter No. File No.8-142/RIFD/RPS-NER/Policy-1/2018-19 Date: 14.03.2019 **Rs. 19,57,939.00** has been utilized for the purpose of Recurring & Non-recurring items for which it was sanctioned and the balance of **Rs. 1,63,061.00** remaining unutilized at the end of the year, in addition to the amount of **Rs. 10,206.00** on account of interest accrued on grant, has been surrendered to All India Council for Technical Education (vide No. _____ dated _____)/ will be adjusted towards the Grants – in – aid payable during the next year i.e., _____ as per the details attached.

Certified that the grant has been utilized as per laid down terms and conditions for which it was sanctioned.



Finance Officer
(Signature and Seal)
Jaspur University
Dated:



Registrar/Principal/Director
(Signature and Seal)
Registrar
Jaspur University

Chartered Accountant
(Signature and Seal)

Research Promotion Scheme


FORMAT FOR STATEMENT OF EXPENDITURE


AICTE File No.: File No.8-142/RIFD/RPS-NER/Policy-1/2018-19 Date: 14.03.2019

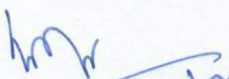
Title of the RPS Project: Design and Implementation of Low Cost Hybrid aquaponics System

Name of the P.I.: Dr. Soumik Roy

Sanction Order No. & Date	Grant Sanctioned (Rs.)	Details of expenditure Incurred Item wise	Amount Rs. (In each head) (Rs.)	
File No.8-142/RIFD/RPS-NER/Policy-1/2018-19 Date: 14.03.2019	21,21,000.00	As per UC	None-recurring: 15,34,995.00 Recurring: 4,22,944.00	

(1) 
Signature of PI
with Seal
Professor
Department of Electronic & Comm. Engg.
Tezpur University

(2) 
Name and Signature of
Head of Institution with Seal
Registrar
Tezpur University

(3) 
Signature (with Seal) of the Finance Officer/
Auditor/Accounts Officer
(If it is Govt./Goyt. Aided Institute)
Finance Officer
Tezpur University
Date:

(4) Signature of Chartered Accountant:
Name of Chartered Accountant:
Membership No:
Rubber stamp:
Full Address of CA :

Note:-If it is more than one page, each page must be signed & Stamped in all annexure.

RECEIPT & PAYMENT ACCOUNT
(FY: 2019-2020)

Sl.No.	Receipt	Amount (Rs.)	Sl. No.	Payments	Amount (Rs.)
1.	To Opening Balance	00		00	00
2.	To Grants Received by AICTE	₹ 2121000.00		₹ 117581.00	₹ 20,03,419.00
3.	To Interest (if any)	00		00	
				Closing Balance	₹ 20,03,419.00
	Total	₹ 2121000.00		Total	₹ 20,03,419.00

(Signature of Chartered Accountant)

Name of CA :

Membership No. :

Full Address of CA :

[With seal]

(Signature of Head of the Institute)

Name :

Designation :

Full Address :

[With seal]

[Handwritten Signature]
31/12/23

Registrar
Tezpur University

[Handwritten Signature]
31/12/23

(Signature of Finance Officer)

Name :

Designation :

Full Address : *Finance Officer*

[With seal] *Tezpur University*

(Govt./Govt. Aided/University & wherever applicable)

Dated : _____

RECEIPT & PAYMENT ACCOUNT
(FY: 2020-2021)

Sl.No.	Receipt	Amount (Rs.)	Sl.No.	Payments	Amount (Rs.)
1.	To Opening Balance	₹ 20,03,419.00		₹ 1595188.00	₹ 418437.00
2.	To Grants Received by AICTE	00		00	00
3.	To Interest (if any)	₹ 10206.00			00
				Closing Balance	₹ 418437.00
	Total	₹ 2013625.00		Total	₹ 418437.00

(Signature of Chartered Accountant)

Name of CA :

Membership No. :

Full Address of CA :

[With seal]

(Signature of Head of the Institute)

Name :

Designation :

Full Address :

[With seal]

Registrar

Texpur University

(Signature of Finance Officer)

Name :

Designation :

Full Address : *Finance Officer*

[With seal]

Texpur University

(Govt./Govt. Aided/University & wherever applicable)

Dated : _____

RECEIPT & PAYMENT ACCOUNT
(FY: 2021-2022)

Sl.No.	Receipt	Amount (Rs.)	Sl.No.	Payments	Amount (Rs.)
1.	To Opening Balance	₹ 418437.00		₹ 92045.00	₹ 326392.00
2.	To Grants Received by AICTE	00		00	00
3.	To Interest (if any)	00		00	
				Closing Balance	₹ 326392.00
	Total	₹ 418437.00		Total	₹ 326392.00

(Signature of Chartered Accountant)

Name of CA :

Membership No. :

Full Address of CA :

[With seal]

(Signature of Head of the Institute)

Name :

Designation :

Full Address :

[With seal]

Registrar

Tezpur University

(Signature of Finance Officer)

Name :

Designation :

Full Address : *Finance Officer*

[With seal]

Tezpur University

(Govt./Govt. Aided/University & wherever applicable)

Dated : _____

RECEIPT & PAYMENT ACCOUNT
(FY: 2022-2023)

Sl.No.	Receipt	Amount (Rs.)	Sl.No.	Payments	Amount (Rs.)
1.	To Opening Balance	₹ 326392.00		₹ 78059.00	₹ 248333.00
2.	To Grants Received by AICTE	00		00	00
3.	To Interest (if any)	00		00	00
				Closing Balance	₹ 248333.00
	Total	₹ 326392.00		Total	₹ 248333.00

(Signature of Chartered Accountant)

Name of CA :

Membership No. :

Full Address of CA :

[With seal]

(Signature of Head of the Institute)

Name :

Designation :

Full Address : Registrar

[With seal] Tezpur University

(Signature of Finance Officer)

Name :

Designation :

Full Address : Finance Officer

[With seal] Tezpur University

(Govt./Govt. Aided/University & wherever applicable)

Dated : _____

RECEIPT & PAYMENT ACCOUNT
(FY: 2023-2024)

Sl.No.	Receipt	Amount (Rs.)	Sl.No.	Payments	Amount (Rs.)
1.	To Opening Balance	₹248333.00		₹ 75066.00	₹ 173267.00
2.	To Grants Received by AICTE	00		00	00
3.	To Interest (if any)	00		00	00
				Closing Balance	₹173267.00
	Total	₹248333.00		Total	₹173267.00

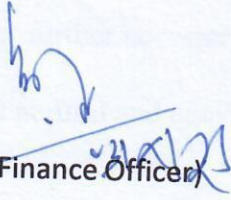
(Signature of Chartered Accountant)

Name of CA :

Membership No. :

Full Address of CA :

[With seal]



(Signature of Finance Officer)

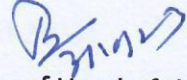
Name :

Designation :

Full Address : *Finance Officer*
Tezpur University

[With seal]

(Govt./Govt. Aided/University & wherever applicable)


(Signature of Head of the Institute)

Name :

Designation :

Full Address : *Registrar*
Tezpur University

[With seal]

Dated : _____