3.1.1 Grants received from Government and non-governmental agencies for research projects / endowments in the institution during the year (INR in Lakhs)

3.1.1.1 - Total Grants from Government and non-governmental agencies for research projects /endowments in the institution during the year (INR in Lakhs)

Year	2021-2022
Grants received (INR in Lakhs)	10.00

ADITYA COLLEGE OF ENGINEERING * SURAMPALEM *

PRINCIPAL

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SURAMPALEM - 533 437

Hydro Tribe Private Limited

1-95, Prathipadu, East Godavari, Andhra Pradesh, India, 533432
+91 9492766393
hydrotribe@gmail.com
www.hydrotribe.in

Ref.: HTP/R&D/IFT/01
Dt.: 28.01.2022

To
Principal,
Aditya College of Engineering,
Surampalem,
Andhra Pradesh.

Sir,
Sub: Requesting R&D - Collaboration project - 'Innovative Farming Techniques: Design and Fabrication of a 3D Printed Aeroponic Tower for Urban Agriculture' -Reg.

Warm Greetings!!
I am writing to express my interest in a possible R&D collaboration project with Aditya College of Engineering. As the Managing Director of Hydro Tribe Private Limited, I believe our company's expertise in the field of sustainable agriculture can greatly benefit from this collaboration.
Our proposed project is titled "Innovative Farming Techniques: Design and Fabrication of a 3D Printed Aeroponic Tower for Urban Agriculture." The project aims to address the growing food insecurity problem in urban areas caused by the declining agricultural land due to urbanization and industrialization.
We believe that the Aditya College of Engineering has the necessary expertise and facilities to collaborate with us in the research and development of this innovative farming technique. Our company has significant experience in the field of sustainable agriculture, and we are confident that we can contribute significantly to this project.
We look forward to working with Aditya College of Engineering on this project and hope that this collaboration will be beneficial for both our organizations. We are willing to discuss the project in further detail and hope to receive a positive response from you.
Thank you for your consideration.

Sincerely,

ADITYA COLLEGE OF ENGINEERING * SURAMPALEM *

Scan Me

Mr. Karanam Bala Siva Tarun Kumar,
Managing Director,
Hydro Tribe Private Limited.

HYDRO TRIBE PRIVATE LIMITED * PRATHIPADU *

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ADITYA COLLEGE OF ENGINEERING

Approved by AICTE, Permanently Affiliated to JNTUK & Accredited by NAAC
Recognized by UGC under Sections 2(f) and 12(B) of UGC Act, 1956
Aditya Nagar, ADB Road, Surampalem - 533 437, E.G.Dist., Ph: 99631 76662

Ref: ACOE/R&D/PRJ-ME/2021-22/IFT-01 01-02-2022

To

Mr. Karanam Bala Siva Tarun Kumar,

Managing Director,

Hydro Tribe Private Limited.

Respected sir,

We have received your letter requesting a collaboration project with our college on the topic of 'Innovative Farming Techniques: Design and Fabrication of a 3D Printed Aeroponic Tower for Urban Agriculture'. After careful consideration, we are pleased to inform you that we accept your proposal for this research and development collaboration.

As you know, Aditya College of Engineering has a strong commitment to promoting innovative research and development activities in various fields, and we believe that your proposed project aligns with our mission to create innovative solutions to address the challenges faced by our society.

We look forward to collaborating with you on this project and are excited about the prospects of this endeavour. We will provide all the necessary support and resources to ensure that this project is successful. We would appreciate it if you could share more details regarding the project's timelines, objectives, budget, and any other relevant information.

Thank you for considering Aditya College of Engineering as your partner in this project. We are eager to begin this collaboration and look forward to working with you.

Principal
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Ref: ACOE/R&D/PRJ-ME/2021-22/IFT-02

01-02-2022

FACULTY DETAILS

The following are the faculty members involved in the project entitled 'Innovative Farming Techniques: Design and Fabrication of a 3D Printed Aeroponic Tower for Urban Agriculture'.

S. No	Name	Role	Designation	Area of Interest
1	Dr Marxim Rahula Bharathi B	PI	Associate Professor	Machine Design and 3D Printing.
2	Dr DVSSSV Prasad	Co-PI	Professor	3D Printing.

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Execution Plan

S. No.	Plan	Duration
1	Data collection and Review	3 Months
2	Prototype development	3 Months
3	Prototype Testing	1 Month
4	Product Development	3 Months
5	Product Testing	2 Months
Duration Required for Completion of the Project.		12 Months

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FINANCIAL DETAILS

S.No.	Item Descfiption	Amount Rs.
1	Desktop	100000
2	Hardware	150000
3	Transportation	150000
4	Technical Assistant	250000
5	Testing	200000
6	Miscellaneous	150000
Total		1000000

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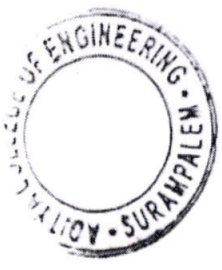
Innovative Farming Techniques: Design and Fabrication of a 3D Printed Aeroponic Tower for Urban Agriculture



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PROPOSAL DETAILS

Project Investigator:

Dr Marxim Rahula Bharathi B

Associate Professor,

Department of Mechanical Engineering,

Aditya College of Engineering.

Project Co - Investigator:

Dr DVSSSV Prasad

Professor,

Department of Mechanical Engineering,

Aditya College of Engineering.

Technical Details:

Research Area: 3D Printing and Sustainable Agriculture

Duration: 1 year

Contact No: +91 8583039077

Date of Birth: 20-04-1988

Nationality: Indian

Total Cost (INR): 10,00,000.

Project Summary:

In this project, a 3D printed aeroponic tower is designed to address the issue of food insecurity in urban areas caused by the declining agricultural land due to urbanization and industrialization. The tower will use an advanced soil-less farming technique that grows plants in an air or mist environment using a nutrient-rich solution, and it will be accompanied by an automation system to grow healthy fruits and vegetables at home even in limited spaces. The project targets people with a passion for gardening but lack space, working professionals with no time for maintenance, health-conscious individuals, and those looking for an additional source of income. The tower will use a blend of aeroponic, NFT, and DWC technologies, and it will come with customized packages including grow lights, shades, net pots, clay balls, water pump, reservoir, nutrients, and seeds/compost (if Geoponics) to optimize space and increase plant yield up to six times more than conventional farming.

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Objectives:

The proposed solution aims to provide self-farming at home with advanced soil-less farming techniques like aeroponics. The project intends to design and install customized equipment to grow fresh fruits and vegetables at home using a blend of aeroponic, nutrient film technique (NFT), deep water culture (DWC), or geoponics. Additionally, the proposed solution will be designed with the following features and benefits:

- AUTOMATION: Sensor technology to minimize manual supervision and care
- IN-BUILT-LIGHTING SYSTEM: Integrated grow lights to provide artificial sunlight
- PACKAGE INCLUDES: Grow lights, shades, net pots, clay balls, water pump, reservoir, nutrients, and seeds. (Compost if Geoponics)
- OPTIMIZE SPACE: Plants grow six times more than conventional farming
- TECHNOLOGY: A blend of Aeroponic, NFT, and DWC technology or Geoponics.

Expected Output and Outcome of the proposal:

- Design and development of aeroponic towers.

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Ref.: HTP/R&D/IFT/01
Dt.: 07.02.2022

To
Principal,
Aditya College of Engineering,
Surampalem,
Andhra Pradesh

Sir,
Sub: Approval of budget and execution plan.

Ref. ACOE/R&D/PRJ-ME/2021-22/IFT-01/ Dated 01-02-2022
As regards to the above-mentioned subject, we are gratified by your quick response. Our peers have reviewed the details sent and are completely satisfied with the documents provided. The project "Innovative Farming Techniques: Design and Fabrication of a 3D Printed Aeroponic Tower for Urban Agriculture." has been accepted.
We are pleased to allocate a budget of Rs. 10,00,000 for the project, and we aim to finalize it at the earliest. Furthermore, we are delighted to offer our support and assistance in this endeavour.

Sincerely,

Mr. Karanam Bala Siva Tarun Kumar,
Managing Director,
Hydro Tribe Private Limited.

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