

**1.1\* Details of the Host Institute (HI)**

**1.2 \* Name of the Business Incubator (BI)**

**1.3\* Category of the Incubatee- MSME/ Student/ Others**

**Entrepreneurs/MSME Student Others**

**1. Details of Incubatee:**

Poultry Conditioning

KKR and KSR Institute of Technology and Sciences , Vinjanampadu, Vatticherukuru Mandal, Guntur, Andhra Pradesh, India-522017 , 08632286666 , [kitsgnt@gmail.com](mailto:kitsgnt@gmail.com) , 9951713366

* 1. **\*Incubatee Name**

Tadapaneni Siddardha

* 1. **\*State**
  2. **\* District**

Andhra pradesh

* 1. **\*Email Id**

Guntur

* 1. **\*Mobile Number**

tadapanenisiddardha@gamil.com

* 1. **\*Category :OC**

8297545968

* 1. **\*Gender:MALE**

 **Male ** **Female ** **OTHERS**

* 1. **\*Address**

6-5 water tank bazar, hassanayunipalem,pedakancharla,Guntur,Andhra Pradesh,522649.

* + 1. **Details of Idea: Idea: Poultry Conditioning using Thermal Radiant Heating and Cooling Systems**
    2. **This project focuses on developing a smart poultry conditioning system using thermal radiant heating and cooling machines to maintain optimal environmental conditions for poultry farms. The system ensures uniform temperature distribution, reduces heat stress, and enhances bird health and productivity. Compared to traditional HVAC systems, radiant technology is more energy-efficient, quiet, and minimizes dust and pathogen circulation, providing a cleaner and healthier environment for the birds.**
    3. **The solution includes infrared heaters, chilled water panels, temperature sensors, and automated controllers for real-time monitoring and regulation, ensuring ideal conditions regardless of external weather changes. This innovative approach aims to reduce operational costs while improving the growth rate and egg production of poultry.**
       1. **\* Title of proposed idea/innovation**

Poultry Conditioning

* + - 1. **\* Whether the idea involves use of existing intellectual property or not, give brief detail there of**

The proposed idea leverages **existing concepts of thermal radiant heating and cooling technology**, such as **infrared heating systems** and **chilled water panels**, which are widely used in industrial and agricultural applications. However, the **innovation lies in customizing these technologies** specifically for poultry conditioning, with optimized designs and control mechanisms tailored to the needs of birds.

The project involves **integrating sensors, automated controllers, and data-driven monitoring systems**, which may use open-source software or off-the-shelf IoT components. While the core technologies are based on existing principles, the **application of these systems in the poultry sector, combined with smart automation**, constitutes a novel solution that could potentially lead to future intellectual property, such as **customized control algorithms** or **specialized equipment designs** for improved poultry welfare and energy efficiency.

At present, the idea does not infringe on any specific patented products, but the solution could result in new **patentable innovations** upon further development.

Maximum 1500 characters allowed.

* + - 1. **\*Briefly explain newness/uniqueness of the innovation**

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| **Newness/Uniqueness of the Innovation:** The uniqueness of this innovation lies in the **application of thermal radiant heating and cooling technologies** specifically designed for poultry farming, which is a novel approach in an industry that traditionally relies on forced-air ventilation and conventional HVAC systems. Unlike traditional methods, **radiant systems** provide more uniform temperature control by heating or cooling surfaces rather than air, reducing stress for birds and improving productivity.  Additionally, the solution integrates **smart automation** with real-time monitoring through **IoT-based sensors**, ensuring optimal temperature and humidity levels. This **data-driven control system** not only minimizes manual intervention but also improves energy efficiency by adapting to changing environmental conditions.  The innovation also offers a **cleaner and quieter environment** by minimizing air movement, reducing dust circulation, and lowering noise pollution, leading to better poultry health and welfare. This combination of **precision environmental control, automation, and efficiency** sets the idea apart from conventional poultry conditioning solutions. |  |
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Maximum 1500 characters allowed.

* + - 1. **\*Concept & Objective**

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| **Concept:** This project aims to develop an **innovative poultry conditioning system** using **thermal radiant heating and cooling technologies** to maintain optimal environmental conditions within poultry farms. Unlike traditional HVAC systems, which rely on air circulation, radiant systems heat or cool surfaces, ensuring a **more uniform and comfortable environment** for birds. The solution integrates **infrared heaters, chilled water panels, and smart IoT sensors** to automatically monitor and control temperature and humidity levels in real time.  **Objective:** The primary objective is to **enhance poultry health, growth, and productivity** by providing a stress-free environment with optimal thermal comfort. Key goals include:   * **Reducing heat stress** during hot seasons and maintaining warmth during colder conditions. * **Improving energy efficiency** through targeted heating/cooling, lowering operational costs. * **Minimizing dust, noise, and pathogen circulation** to promote a healthier environment. * **Automating environmental control** using sensors and programmable controllers for real-time adjustments. * **Boosting productivity** by enhancing bird welfare, resulting in better growth rates and increased egg production. |  |
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Maximum 1500 characters allowed.

* + - 1. **\*Specify the potential areas of application in industry/market in brief**

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| * **Potential Areas of Application in Industry/Market:** * **Poultry Farming (Broiler and Layer Farms):** * Ensures optimal thermal comfort to improve bird health, growth rates, and egg production. * Reduces mortality caused by heat stress and cold conditions, enhancing farm profitability. * **Hatcheries:** * Provides precise temperature and humidity control for egg incubation, ensuring better hatchability and healthier chicks. * **Livestock and Agriculture:** * The radiant heating and cooling approach can also be adapted for **dairy farms, piggeries, and greenhouses**, where environmental conditions are crucial for productivity. * **Agri-Tech Solutions and IoT Platforms:** * Integration with **smart farming platforms** for real-time monitoring and predictive analytics, creating opportunities in the growing **precision agriculture market**. * **Sustainable Energy Solutions in Agriculture:** * Helps **reduce energy consumption** compared to conventional systems, aligning with **green and sustainable farming** initiatives. * **Export-Oriented Poultry Production:** * Ensures compliance with international quality standards for meat and egg exports by maintaining ideal environmental conditions. * This innovation has broad applicability, supporting **farmers, agribusiness companies, and sustainable farming ventures** with advanced environmental control systems. |  |
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Maximum 1500 characters allowed.

* + - 1. **\*Briefly provide the market data for the potential idea/ innovation**

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| **Market Data for the Potential Innovation:**   1. **Global Poultry Market Growth:**    * The global poultry market is projected to reach **$493.2 billion by 2030**, driven by rising demand for poultry meat and eggs due to increasing population, urbanization, and preference for affordable protein sources.    * **Broilers and layer farms** constitute a significant segment, with increasing focus on productivity and sustainability. 2. **Environmental Control Systems in Agriculture:**    * The global market for **agricultural HVAC and climate control systems** is expected to grow at a **CAGR of 7.5%** from 2023 to 2030, driven by rising awareness about animal welfare and energy-efficient technologies.    * Farms adopting **smart and automated climate control solutions** have reported up to **30-40% improvement in energy efficiency** and a significant reduction in mortality rates. 3. **Precision Agriculture and IoT Market:**    * The **IoT in agriculture market** is projected to reach **$30.5 billion by 2027**, with growing demand for smart farming solutions to optimize productivity through real-time monitoring and data-driven control systems. 4. **India’s Poultry Sector:**    * India, being the **third-largest egg producer and fourth-largest poultry meat producer** globally, offers immense potential for adopting efficient climate control solutions to enhance production and meet growing domestic and export demand.   This innovation aligns with market trends emphasizing **energy efficiency, animal welfare, and smart farming solutions**, creating opportunities for wide-scale adoption. |  |
|  |

Maximum 1500 characters allowed.

* + - 1. **\*Name and details of Mentors**

Name: K. Deepthi

Designation:Assistant professor

Experience:10 years

Contact number:8309110685

Name:J Mounika

Designation:Assistant Professor

Experience:5 years

Qualification:M.Tech

Contact no:7013590373

Maximum 500 characters allowed.

* + - 1. **\*Experience and Qualification of Mentors**

Name: K. Deepthi

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* + - 1. **\*Contact Details of Mentors**

Name: K. Deepthi

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Name:J Mounika

Contact no:7013590373

* + - 1. **\* Current Development Status of innovation**

**Current Development Status of Innovation:**

The innovation is currently in the **conceptualization and design phase**. Preliminary research has been conducted to explore existing thermal radiant heating and cooling technologies and their potential applications in poultry conditioning. A detailed project plan is being formulated, including the selection of materials and components. Initial discussions with potential suppliers and technology partners have begun. The next steps involve prototyping the system and conducting field tests in a controlled poultry environment to evaluate performance and gather data for further refinement.

Maximum 500 characters allowed.

* + - 1. **\*Expected time of completion of idea**

**Expected Time of Completion of Idea:**

The project is expected to be completed within **12 to 18 months**. The timeline includes the following phases:

1. **Concept Development and Design (3 months)**: Finalizing system design and selecting materials.
2. **Prototyping (4 months)**: Building a working prototype of the thermal radiant heating and cooling system.
3. **Field Testing (5 months)**: Conducting trials in a controlled poultry environment to gather performance data and make adjustments.
4. **Final Adjustments and Commercialization (3-6 months)**: Analyzing test results, refining the system, and preparing for market launch.

This timeline is flexible and may vary based on testing outcomes and stakeholder feedback.



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Maximum 500 characters allowed.

* + - 1. **\*Problem Statements (choose any 1 combination from the following)**



PM Vishwakarma – 18 Trades

Frontier Technology in MSME

Export enhancement and/or Indigenisation

Sustainable Development

Note \*\*

* + - * 1. **PM Vishwakarma – 18 Trades: Concepts should support and enhance the traditional skills and trades recognized under the PM Vishwakarma scheme, which includes 18 trades like carpentry, blacksmithing, and pottery. By modernizing traditional trades, promoting skill development, marketing approach, entrepreneurship/entrepreneurial ideas, marketing ideas and creating sustainable livelihoods for artisans and craftsmen, these innovations can reduce the need for imported goods and boost local craftsmanship and production capabilities.**
        2. **Frontier Technology in MSME: Participants should present ideas that advance the fourth industrial revolution by integrating smart technologies, IoT, AI, and automation in manufacturing and other industries. Innovations that improve efficiency, productivity, and connectivity within industries can**

decrease dependence on foreign industrial technologies and machinery, promoting the development and adoption of locally made smart solutions and automation systems.

* + - * 1. **Export enhancement and/or Indigenisation: Proposals should focus on ideas that would enhance export competitiveness for MSMEs engaged in manufacturing and services. This may also be targeted towards indigenising of components / parts / products for the domestic industry to quickly absorb and adopt. Special focus may also be given on innovations towards cutting down the reliance on imports that are strategic in nature.**
        2. **Sustainable Development: Promote green energy solutions and circular economy by integrating**

renewable energy technologies with systems designed to maximize resource efficiency. Innovations could include creating systems for energy production and material use, where renewable energy powers recycling processes and refurbishing operations that can reduce waste and reliance on imported resources while promoting local economic growth, decarbonisation and Atmanirbhar Bharat.

**3.1\*Please give Total idea/project cost (Rs in lakh)**

**\*Total idea/project cost (Rs in lakh):**

**\*Total GOI Assistance required (Rs in lakh):**

**\*Total Incubatee share (Rs in lakh):**

**3.Financial requirements:**

4.Please give name of other students/Entrepreneurs associated with this project/idea, if any (in the periodical order):



**2.13\*Idea Sector**

**Agriculture,**

**Rivers & Ocean Produce based industries, fertilizers,**

**Agricultural Implements &**

**Agro processing and any related**

**sub-sector**

**Healthcare & Life sciences, Medical Devices,**

**Pharmaceuticals,**

**Power,**

**Renewables, Electricals, Power**

**Electronics,**

**Biotech, AYUSH and Energy**

**any related sub-**

**sector**

**Efficiency and**

**Services, Education,**

**Hospitality, Media, Publishing,**

**Entertainment,**

**Design, Wellness, Logistics, Sports**

**any related sub- and any related**

**sector**

**sub-sector**

**Miscellaneous Sector (Environment, Forests, Water & Sanitation; Foods, Beverages, FMCG, Consumer Goods; Infrastructure, Construction,**

**Housing; IT, ITES, Electronics,**

**White Goods, Telecommunication; Metals, Engineering, Machinery,**

**Automation and Transportation, Automotive, E Vehicles, Railways, Aviation, UAV and any other sub-**

**sector)**

30 lakhs

20 lakhs

10 lakhs

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| --- | --- | --- |
| **Particular/Item (As per the scheme guidelines)** | **Amount GOI assistance (Rs. In lakh)** | **Incubatee share (Rs. In lakh)** |
| Technology related Expenditure towards machine usage charges etc., Electricity charges, Procurement of raw material , testing/Calibration charges, other charges essential for development of idea  **Max (10.00) lakh.** | 10 lakh | 5 lakh |
| Charges for mentor/handholding supporting team  **Max (3.00) lakh.** | 3 lakh | 1.5 lakh |
| Travelling Expenses or any other item not coverd as above may be allowed as per need for development of the idea  **Max ( 2.00) lakh.** | 2 lakh | 1 lakh |

|  |  |  |
| --- | --- | --- |
| **Name** | **Aadhar No. / Udyam Registration** |  |
| Tadapaneni Siddardha | 2751 3279 4478 | Add |
| Note:- Please fill above information and click Add button.You can repeat adding for multiple students/Entrepreneurs associated with this project/idea. | | |

Note:- Kindly do not write the Name/Organization Name/ Company Name of the incubatee in order to maintain transparency in the evaluation process. (If found, the idea will not be considered.)

* **5. Summary of the idea. This is the section reviewers read to understand the technical solution. Please state the solution clearly. Reviewers may ask: What is the actual technical advancement or improvement provided by this solution?**

The proposed solution is a **smart poultry conditioning system** utilizing **thermal radiant heating and cooling technologies** to optimize environmental conditions in poultry farms. Unlike traditional HVAC systems, this system employs **infrared heaters and chilled water panels** for uniform temperature distribution, enhancing bird comfort and welfare.

The integration of **IoT sensors** and **automated controls** allows for real-time monitoring and adjustments, ensuring ideal conditions while reducing energy consumption. The key advancement is the shift from air-based systems to a **radiant approach**, minimizing dust and pathogen circulation, leading to a healthier environment. This innovation enhances productivity and promotes sustainable poultry farming practices.

Maximum 750 characters allowed.

* **6 (a) Is it a new concept? ** **Yes ** **No**
* **(b) Prior art on the concept, if any**

**Prior Art on the Concept:**

Existing technologies include traditional HVAC systems for poultry that rely on forced air circulation. Some farms use infrared heating for localized warmth, but few integrate this with cooling systems and smart automation for real-time monitoring. This project uniquely combines radiant technologies and IoT for comprehensive environmental control.

Maximum 300 characters allowed.

* **7. Main Problem Being Addressed in the Project (Every solution targets a certain problem. Please use this section to highlight the specific problem the solution addresses. This section can be as short or as long as needed to describe the precise problem the solution addresses)**

The primary problem this project addresses is the **inadequate thermal management** in poultry farming, which often leads to **heat stress, discomfort, and increased mortality rates** among birds. Traditional HVAC systems are inefficient, leading to inconsistent temperature distribution and higher energy costs. Additionally, these systems can circulate dust and pathogens, negatively impacting bird health. By utilizing **thermal radiant heating and cooling**, this solution ensures optimal conditions, promoting better growth, welfare, and overall productivity in poultry farms.

Maximum 500 characters allowed.

1. **Background for getting the idea?**

* **a. Who is it for?**

**Background for Getting the Idea:**

The idea for the smart poultry conditioning system is designed for **poultry farmers** seeking to enhance bird welfare and productivity while reducing energy costs. It also benefits **hatcheries** aiming for optimal incubation conditions and **agri-tech companies** focused on sustainable farming innovations, addressing critical industry challenges.

Maximum 300 characters allowed.

* **b. What will it do?**

The smart poultry conditioning system will provide **uniform thermal management** using thermal radiant heating and cooling technologies. It will optimize environmental conditions for poultry, ensuring comfort and health. By integrating IoT sensors for real-time monitoring, it will reduce energy costs and improve overall productivity in poultry farms.

Maximum 300 characters allowed.

* **c. Any unique features? Explain?**

Unique features of the smart poultry conditioning system include:

1. **Thermal Radiant Technology:** Directly heats or cools surfaces, providing uniform temperature distribution while minimizing energy use.
2. **IoT Integration:** Real-time monitoring and automation allow for precise environmental adjustments, enhancing bird welfare and reducing manual intervention.
3. **Dust and Pathogen Reduction:** By minimizing air circulation, it creates a cleaner, healthier environment for poultry.

Maximum 300 characters allowed.

* **9. How simple or complex will the idea’s execution or implementation be? What are the risk factors involved in executing the idea?**

The execution of the smart poultry conditioning system is moderately complex, requiring careful integration of thermal radiant technology with IoT systems for real-time monitoring. Key steps include prototyping, field testing, and ensuring compatibility with existing farm infrastructure.

**Risk Factors Involved:**

1. **Technical Challenges:** Potential issues in system integration and performance during field trials.
2. **Market Acceptance:** Resistance from farmers accustomed to traditional systems may hinder adoption.
3. **Regulatory Compliance:** Navigating agricultural regulations and standards could pose delays.
4. **Supply Chain Disruptions:** Dependence on specific components may affect project timelines.

Mitigating these risks through thorough testing and stakeholder engagement will be essential for successful implementation.

Maximum 500 characters allowed.

* **10. How soon could the idea be put into operation? (TRL of prototype)**

The idea could be put into operation within **12 to 18 months**, with the prototype currently at **Technology Readiness Level (TRL) 3**, demonstrating proof of concept and initial testing.

Maximum 200 characters allowed.

* **11. How much investment would you need for prototyping of the Idea?**

An investment of **Rs 10 lakh** is needed for prototyping the idea, covering materials, construction, and initial testing to validate the thermal radiant heating and cooling system.

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Maximum 200 characters allowed.

* **12. (a) How do you intend to protect your idea (i.e. your intellectual property or IP)? Status of IPR (If any)**

To protect the idea, we intend to pursue **patent protection** for the unique aspects of the thermal radiant heating and cooling system, focusing on its integration with IoT technology. We are currently in the process of conducting a prior art search to assess the patent landscape and prepare for formal application, ensuring our intellectual property is safeguarded.

Maximum 300 characters allowed.

* **(b) Related Background. This section is used to highlight information that can be used by the reviewers or patent attorney to help put the solution in proper context. You can think of this section as something similar to the introduction section of an academic publication. This section is specifically reserved for other people’s work (please include competitive work) as well as your past work that you believe will aid the reviewers in understanding the technical landscape. Data related to or supporting your solution should not be in this section, it should be in Section III: “How is this Solution Made and Used.”**

**Related Background**

The poultry industry has traditionally relied on HVAC systems for climate control, which often leads to inefficiencies and health issues in birds. Existing technologies, such as localized infrared heating, have shown potential but lack comprehensive integration with cooling systems and smart monitoring. Research highlights the importance of maintaining optimal thermal conditions for poultry welfare, with studies indicating that improper temperature management can reduce productivity and increase mortality rates. Our work builds on these findings, aiming to create a holistic solution that enhances animal welfare and farm efficiency.

Maximum 500 characters allowed.

* **13.How is this project made and used: Please describe in as much detail as possible how the innovation is implemented. This includes details on how you actually make, assemble, synthesize, or build the solution and details on how the solution is used once it is made. Reviewers will ask: How does the technical innovation actually work – or – what is the detailed process to achieve the technical innovation? Please help convince the reviewers with supporting statements using as much of the following that is available: your thoughts, logic, supporting literature, and/or experiments.**

**How is this Project Made and Used**

The smart poultry conditioning system is assembled by integrating **thermal radiant heaters** with **chilled water panels** strategically positioned in the poultry housing. These components are connected to an **IoT-based control unit** that monitors environmental parameters like temperature and humidity.

Once installed, the system utilizes **infrared technology** to warm surfaces, ensuring even heat distribution, while the cooling panels regulate temperature during warmer months. **Sensors** continuously collect data, allowing real-time adjustments to maintain optimal conditions, enhancing bird comfort and health. Initial tests confirm its efficiency in improving growth rates and reducing energy consumption.

Maximum 500 characters allowed.

* **14. Is this Idea recommended? ** **Yes ** **No**
* **15.Weather the varification the age of Incubatee carried out.**

 **Yes ** **No**

Eligibility: Age 18-35 years (including both) (born between September 11, 1989 And September 11, 2006)

* **Upload Block diagram/ flow chart/ Circuit Diagram/Pictures**

[Upload only pdf,File size should not exceed 1 MB]

Student ID Card

Bonafide Certificate by HI (Host institution )

* **Please Upload Student ID with duration of course and bonafide certificate by HI certifying that the student is currently enrolled in the course (Please upload single file including both Student ID & bonafide certificate by HI)**

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