



# 2<sup>nd</sup> INAE Youth Conclave

## IIT Kharagpur

Pre-Conclave : 23rd - 25th March 2018  
Finals: 10th -12th August 2018



### **“Submission Guidelines for the teams selected for the final event to be held in INAE Youth Conclave during 10th-12th August, 2018 at IIT, Kharagpur”**

The team should not deviate from their stated goals and objectives as submitted and presented during the pre-conclave meet. Any major deviation will lead to disqualification of the team.

**Submission Deadline: 20<sup>th</sup> July 2018**

#### **Problem Statement:**

Problem statement Storage of fresh agricultural produce after harvest is one of the most crucial problems of tropical country like India. About 30-50 % vegetables and fruits produced every year are lost at the production site due to inefficient storage. Because of high moisture content, fruits and vegetables have very short life and are liable to spoil easily. Hence, by preserving these food materials in controlled environment helps in regulating the physiological and chemical changes occurring in food, thereby enhancing their shelf life. Presently, available storage facilities are inaccessible to small farmers because of its unavailability in rural areas, high cost, complex operation and high energy demands. Therefore, development of on-farm low cost storage facilities can help small and marginal farmers to store the harvest for few days to avoid spoilage. Targeting this problem, participants are expected to come up with various ideas/design applicable for on-farm storage of fruits and vegetables in the following areas.

- Evaporative coolers
- Zero energy cold chambers
- Solar powered cold storage systems

#### **Points of Interest**

- Prototype/ model of the product
- Low cost and energy efficient
- Farmers' friendliness operation





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### Desired Format of Report

- Abstract
- Product/design description
- Process description
- Process flow diagram with process parameters
- Product innovativeness
- Market/commercialization potential
- Technical feasibility
- Cost and energy evaluation
- Patent status (apply, license, if any)
- Reference should be present at the end of the proposal and must follow the referencing style of “Journal of Food Engineering”
- The proposal should be printed in 12pt Times New Roman font single line spacing and the proposal should not exceed 25 pages (excluding the table of contents and references).





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- Completed applications must be submitted in both .doc format and PDF format.
- All text and figures must be on A4 paper (21 cm × 29.7 cm) size.
- Proposal must include 5" × 7" color photographs or videos of the prototype of the proposed product/design.
- Additional images throughout the report are optional.
- The information of each participant in the team such as name, school and university, class/grade and contact information (phone number and email address) should be submitted as a separate document in the given application format and should not appear within the abstract and proposal.

### **B. Product/ design descriptions**

- Participants are motivated to present/ demonstrate a prototype of the proposed design.
- In case, the prototype is of immobile nature, video and photographs of the realized prototype must be presented to validate the practical feasibility of the product/ design.

It is must for the participants to present the samples of the food product used for validating the application of the design as appropriate storage facility

### **C. Experimental data to validate feasibility/ application of the design/product.**

- Participants are encouraged to submit experimental proof to support superiority/ novelty/ feasibility of the prototype.







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- It is must to include experimental data in relation with shelf life of the targeted agricultural produce, energy and cost analysis.
- Participant can also produce a comparative analysis of the prototype with existing facility data in terms of technology/ food quality/ economics involved/ ease of handling (whichever applicable).

#### **D. Description of the operational parameters**

- The instruction for operating the design should be stated clearly to make sure that the prototype can be tested/ demonstrated by judging committee.
- It is required of participants to prepare a user manual including the, working principle, specification of the design (like capacity of the prototype) and maintenance instructions for the design/ prototype.
- Participants should include and optimized conditions (if any) to operate the design proposed.

