

Rishikesh Borpuzari Ideathon competition

Rules and Regulation:

1. Who can participate?
 - Undergraduate and Postgraduate students of Jorhat Engineering college.
 - An Individual or a team of maximum 4 students from any discipline.
2. The proposed idea must be within the themes as mentioned in Annexure II.
3. **Idea will be evaluated on the following main criteria:**
 - a. Innovation - How 'innovative' is the idea? Is this idea creative and progressive?
 - b. Feasibility of Implementation - How feasible is the idea? How can it be executed within 6 months/one year on a defined budget?
 - c. Sustainability - How sustainable is the idea? Is this idea cost-effective? Where does this have market potential and scalability?
 - d. Impact - How does this idea raise awareness for diverse or vulnerable populations in a range of social conditions?
4. Complete novelty and creativity of the idea is highly desirable.
5. In the first round of the competition, participants will be selected after reviewing the report of the ideas submitted by the teams.
6. The submitted paper to be in PDF format with a maximum of 4000 words and could include graphs, pictures, diagrams, flow charts, etc. The report must have a cover page with paper title, name of the participants, their contact information and their affiliation.
7. The last date of submission of the paper is **20th September, 2023**.
8. How to submit the report? (Annexure I)
 - The report must be typed in word document and convert it into pdf while submitting.
 - The e-mail id for submission of the report is dhbaruah@jecassam.ac.in
9. The shortlisted team must present their idea in the final round of the competition to be held on **30th September 2023**.
10. Rules for the final presentation:
 - A PPT presentation is mandatory for all the shortlisted teams.
 - Selected teams shall prepare a PRESENTATION for 15 minutes.
 - Any member of the team shall give the presentation.
 - The presentation shall be followed by a question answer round where the judges shall ask questions regarding the presentation.
 - All team members MUST participate in this session.

- A copy of the presentation should be mailed prior to the final event which will be informed after first round of the competition.

11. Judging will be based on innovativeness, feasibility of the presented idea, clarity of thought and idea and depth of research. The Judge's decision remains final in all respect.
12. **Total prize money is 1 Lakh**, which will be distributed among the prize owner. The selected groups will be eligible for getting **seed money (upto Rs. 9 Lakhs subjected conditions specified by investors)** and **mentorship from reputed entrepreneur** to establish their own start-up.
13. Participants can consult Subject matter experts / Alumni / Industry domain experts to finetune the presented solution. The name of such experts consulted should be disclosed while sending the report so as to avoid any future conflict of interest.

ANNEXURE I

FORMAT OF THE PAPER TITLE OF THE PAPER

(TIMES NEW ROMAN 16, TITLE CASE, BOLD, CENTER ALIGNMENT)

First Author 1, Second Author 2, Third Author 3 and so on

First Author- Department, Institute, e-mail, contact No.

Second Author- Department, Institute, e-mail, contact No.

Third Author- Department, Institute, e-mail, contact No.

1. **Abstract: Abstract 200-250 words, Times new Roman, font 12,**
2. **Introduction:**
3. **Proposed idea:**
4. **Description of the idea:**
5. **Why did you pick this idea to work on?**
6. **Do you have domain expertise in this area?**
7. **Novelty:**
8. **Feasibility of the idea with justification:**
9. **How can your idea solve the problem?**
10. **Conclusion:**
11. **Reference:**

ANNEXURE II

Unique/innovative ideas of the problems are invited from the following areas:

1. Climate Change Issues :

- i. Modular Renewable Power Generation: Power outage from grid in critical facilities like hospital, defence establishments, cold storages in the remote areas of the NE region. A possible solution may be onsite power generation from renewables (solar, wind, mini hydel power units)
- ii. Agrovoltic Farming: Farming under solar canopy or PV panels can resolve many climate issues. Farmers can minimize evaporation of water from fields under solar canopy, generate power to inject in the grid and reduce land required for setting up solar farms.
- iii. Drainage with rainwater harvesting: Design of urban drainage system with rainwater harvesting system to arrest flash flood in the neighbourhood.
- iv. Micro Weather Station Network: Monitoring of local weather in the city and **regulate traffic** to reduce SOX, NOX, SPM near major healthcare facilities.
- v. Solar water heating solution for high rise apartments: Minimize use of commonly used electric geysers in apartments.
- vi. CO₂ capturing, sequestration and use: CO₂ capturing from furnace stacks, its storage and use for different application is another area where many startups are working.

2. Renewable Energy

- i. Pumped Storage Hydropower (PSH): Pumping water into a reservoir during peaking of renewable generation in and using the water to run turbines when demand of power is high.
- ii. Intelligent Power Demand Management: AI / ML based solution for power demand management like advancement of power demand when generation is more and switching off the demand when generation is less.
- iii. Production of H₂/Methanol/Ammonia: Use of renewable for production of H₂, Methanol or Ammonia and storage for future consumption. H₂, Methanol and Ammonia are identified as future fuel in many sectors.
- iv. Demand management for EV charging: Normally EV charging is carried out in the night hours which farther increase the demand of peak power. Innovative business models to promote charging of EVs during the daytime when power demand is less is one area where startups will operate.
- v. Design & manufacturing of EV components: Many startups are engaged in design and manufacturing of EVs and their components. Govt. of India provides Production Linked Incentive (PLI) for Automobile and Auto component industry with a budgetary outlay of ₹ 25,938 crore, to boost domestic manufacturing of Advanced Automotive Technology products including electric vehicles and their components.

3. Green Hydrogen Economy:

- i. Storage of H₂: Storage of H₂ is a challenge in terms of volume and safety of handling. Conversion of H₂ immediately to Methanol or Ammonia partly solves the problem.
- ii. Fuel Cell Electric Vehicles: Design, develop and use of FCEVs for urban mobility and manufacturing of FCEV components including storage tanks.
- iii. Electrolyser & Electrolyser Components: Design and development of Electrolyser for H₂ generation from electricity. Solar Energy Corporation of India (SECI) has invited RFP from interested electrolyser manufacturers for setting up plants in India for manufacturing of electrolyser and components under Strategic Intervention for Green Hydrogen Transition (SIGHT) scheme.
- iv. H₂ from CBG: Production of H₂ from compressed biogas generated from municipal waste is another area where startups are engaged today. In Assam already one startup is setting up a CBG plant primarily for production of biogas.

4. Tea garden:

- i. Drone based surveillance of garden areas – Tea gardens are very big in size and cost of manual labour to oversee the garden is going up. A drone-based system which can reduce this manual supervision cost is required. A system which is easy to operate and uses computer vision helps control the issues in garden management.
- ii. Better quality control in the factory thru automation / Data Analytics: The process of tea factory needs extensive control of quality of leaves and its processing steps. Assam tea is losing its quality status as most of the garden are now buying leaves from outside their garden areas. Quality control of leaves is a manual process. Some has tried to import some machines which can do a computer vision-based analysis of leaves and raise alarms.

5. **Bamboo based products**: Innovative Bamboo-based building materials are becoming popular due to their sustainability benefits. An example is Bamboo based Wooden flooring. An innovative Bamboo based product idea for the building material industry is required to be showcased. The idea should showcase some original thinking and problem-solving aptitude

6. **Precast technologies**: NE region has a huge infrastructure gap. Conventional Construction time is much longer due to the shorter window to do fieldwork. Precast-based structures can solve this problem. Precast can be used in lots of different ways. Specific segments and products where it can generate huge business can be identified by the startup and some pilots can be demonstrated.

7. Edutech:

- (1) Rural education: Rural education is a particularly challenging area in India due to its size and spread. An Innovative idea for solving any one identified problem in this segment is required to be showcased. The idea should demonstrate some original thinking and problem-solving aptitude.
- (2) Improvement of Technical Skill Training thru AR/VR – Technical education and training needs a combination of Expert teachers and study content. There is a huge market for such AR/VR solutions which can improve the delivery of technical education. The Edutech startup is expected to develop an innovative idea for solving any one identified problem in the field of technical education. The idea should showcase some original thinking and problem-solving aptitude.

8. Agriculture: The ideas should be firmly based on the agricultural challenges, issues faced by Agri Industry and Progressive Farmers. Its main aim is to solve the current Agricultural problems through technologies and bring forward all the enthusiastic start-ups, entrepreneurs, Researchers and students to come forward and show up their technical potential.

9. Future Technologies: The idea model should showcase original thinking and problem-solving aptitude using technologies like AI, Social Media, 5G, Internet of Things, Machine Learning, Robotics, networking infrastructure and collaboration to address global issues related to education, healthcare, water conservation, environment and sustainability.

10. Cyber security: It refers to every aspect of protecting an organization and its employees and assets against cyber threats. As cyberattacks become more common and sophisticated and corporate networks grow more complex, a variety of cyber security solutions are required to mitigate corporate cyber risk.