

CSE

Innovations

Catalogue

Innovation, Research and Development



Improving high-quality scientific research is a necessary requirement for creating successful applications. The objective of Research & development (R&D) and innovative initiatives undertaken by JIS College of Engineering (JISCE) is to build research careers, internationalization of human potential, support to strengthen the knowledge foundation and promote the creation of new applications, as well as societal impact of education, research and innovation. All education, research and innovation of this

Institute should aim to be of a high standard. The goal of creating technological and social innovations has emerged alongside R&D-based activities.

To achieve the high quality research ambience the following policies has been undertaken. A research development cell has been established that will prepare and implement the documents for development of research and development activities within the Institute.



Future Proofing



CII Center for Innovation at JISCE

Confederation of Indian Industry (CII) furnished a 'Centre for Innovation' to JIS College of Engineering, West Bengal, India. Facility creations alike project funding; technological guidance as well as mentoring service on innovation is implemented from CII Centre for Innovation. Various conferences like IPR Awareness Programme, Competition on Business Model, Best Innovative Minds Competition are all organized from CII Centre for Innovation.



Inauguration of CII Center for Innovation by Managing Director, JIS Group.



Foreign Delegate visit in CII Center for Innovation, JISCE



Innovators with Marcello Forcellini, San Marino, Asset Bank.



Innovators with Hiroyuki Yoshida, PH.D., Associate Professor of Radiology, Massachusetts General Hospital



Innovators demonstrating innovative projects to Hiroyuki Yoshida, PH.D., Associate Professor of Radiology, Massachusetts General Hospital



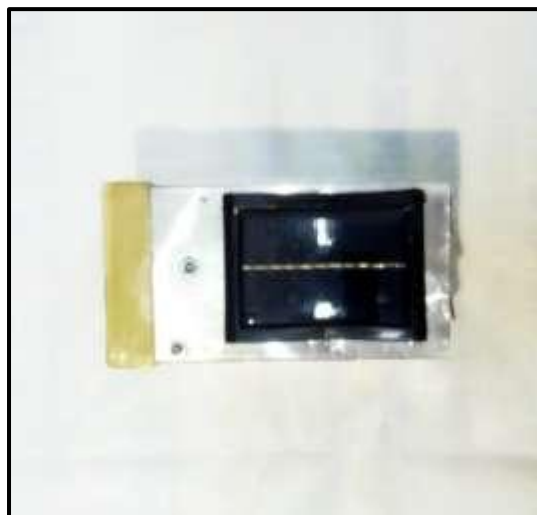
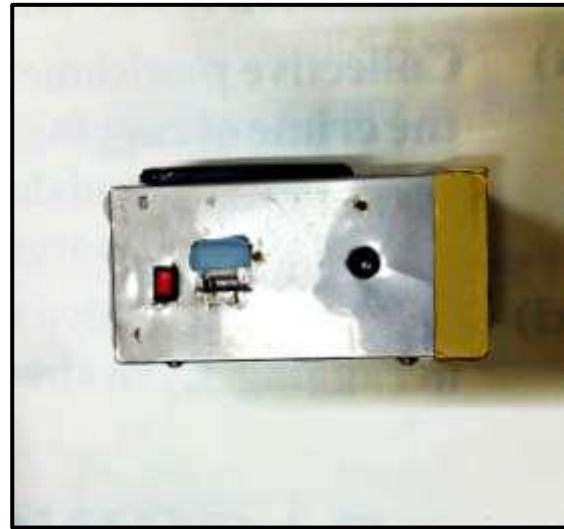
Marcello Forcellini, San Marino, Asset Bank trying innovative brain control module.



Rafael Brisita, Associate professor and division chair at St. Philip's College, Alamo Colleges sharing valuable advices with innovators.

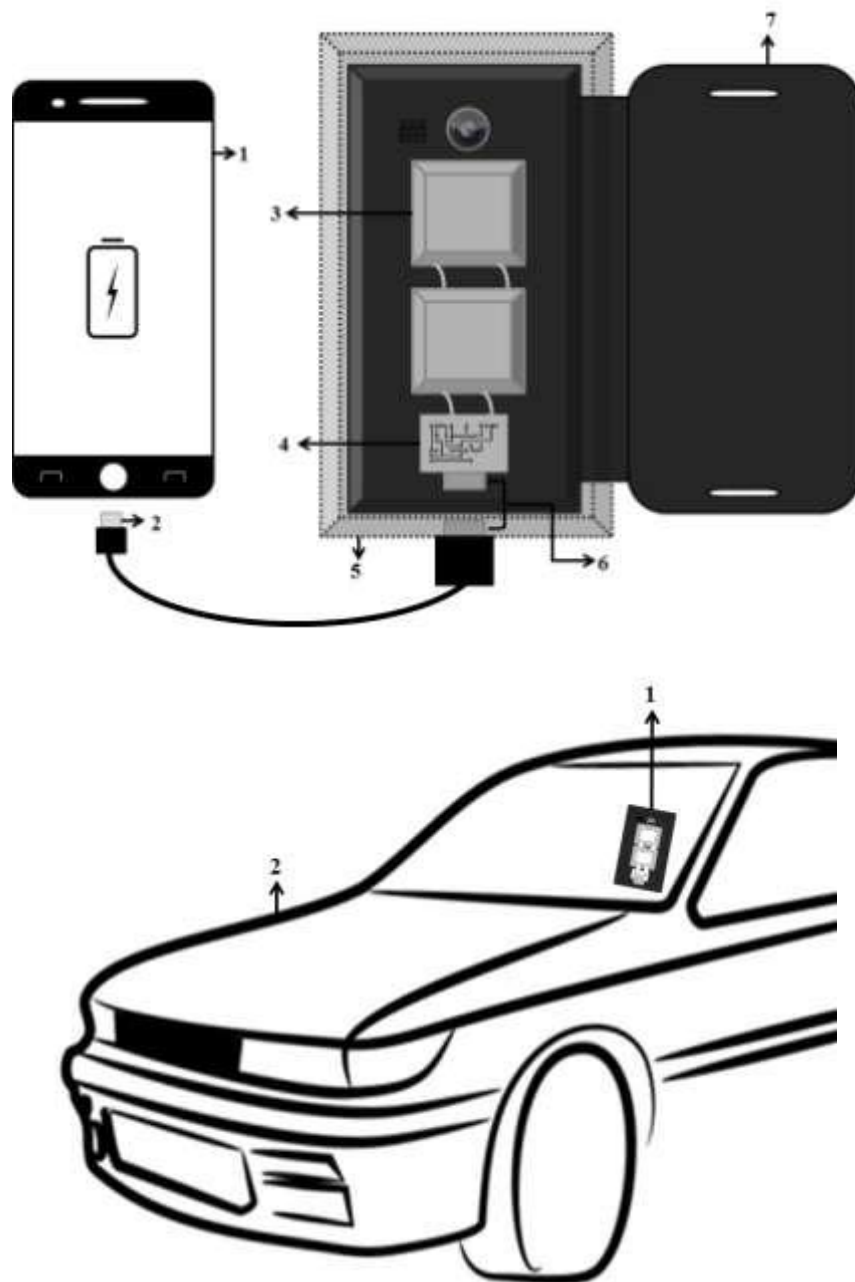
1. Hybrid Solar-Wind Twin Charger for Mobiles.

Conventional energy are tapped and used abundantly at present outmoding thereafter decades. Keeping in observance a way of precaution is taken to upturn the use of non-conventional energy. Burgeoning the use of non-conventional energy, a two way hybrid mobile charger is taken in consideration in implementing both solar energy and wind energy as the renewable sources of energy. The proposed innovative two way hybrid mobile charger can be used both all through day time and night time while travelling and in stable condition. Energy harvesting is explored, with a piece relying on the solar panel energy observation and turbine on formation of electrical energy from solar and wind energy owing to the availability of wind and solar energy. Wind energy and solar energy is considered as the main source for the generation of energy. The energy generation from the use of non-conventional source of energy in the charger will definitely bring a prodigious walkover. The novelty of the designed vehicle lies in its innovation, effortless simplicity and indisputable intention, accentuating the underlying societal impact.



2. Smartphone Flip Cover Charger (SFCC).

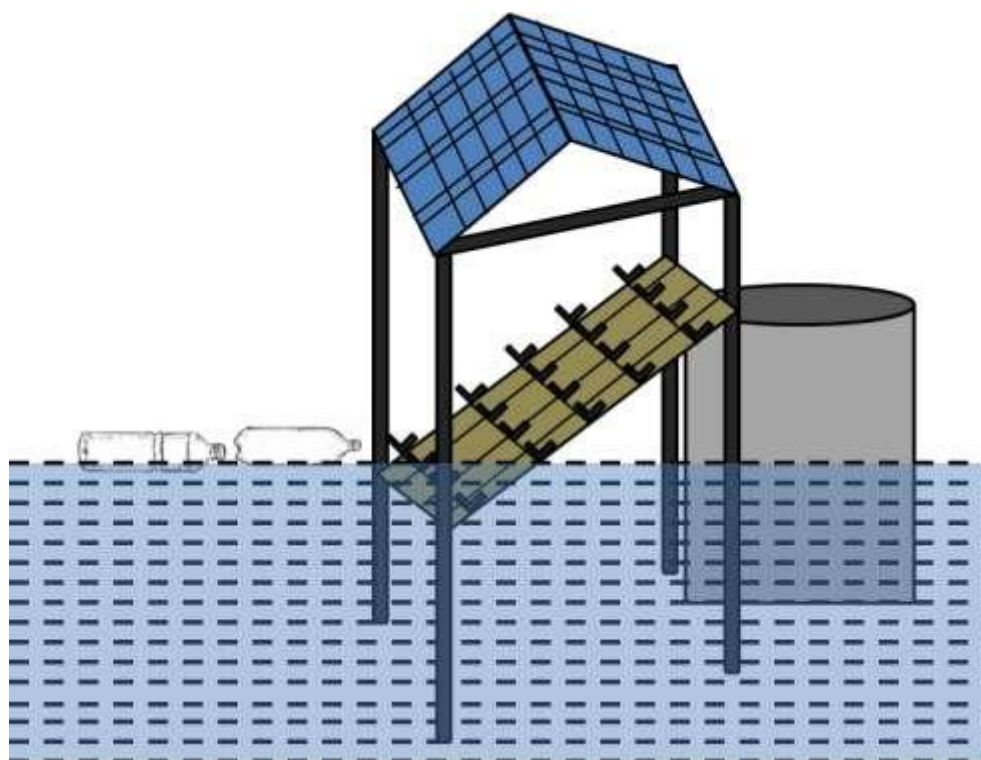
Conservative energy are detailed and cast off profusely at extant. Conventional energy will be obsolete thereafter decades. Keeping in cognizance an approach of deterrent is taken to upsurge the usage of non-conventional energy. The energy from sun will be reprocessed as the non-conventional energy to take over the glitch by the conventional energy. Peltier generator converts heat (temperature differences) directly into electrical energy (a form of thermoelectric effect). Thermoelectric generators function like heat engines, but are less bulky and have no moving parts. Peltier generators could be used in automobiles as automotive thermoelectric generators (ATGs) to increase fuel efficiency. The energy generation from Peltier generator is very nominal but using a boost convertor the energy generation will definitely bring a prodigious walkover. The novelty of the designed product lies in its innovation accentuating the underlying societal impact.



Projects undertaken with collaboration of Russian Federation through CII Center for Innovation by JIS College of Engineering.

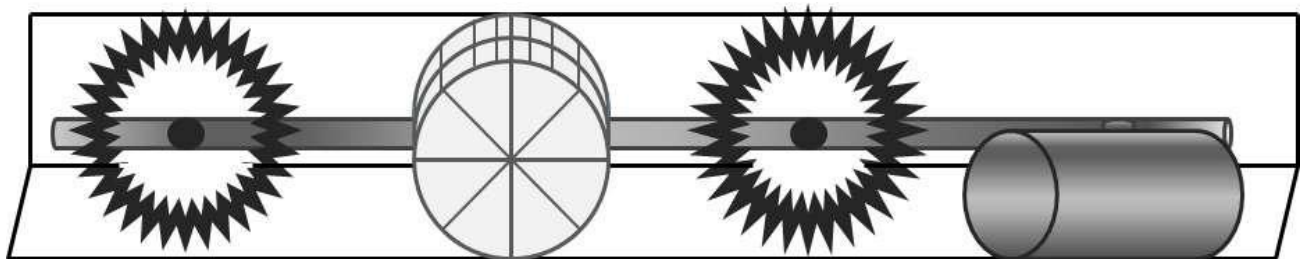
1. Floating Plastic Material Cleaner for Water Bodies.

Geographically and adventure-wise, water bodies have utmost importance. Rivers and lakes stand for purity and each one of us should do our bit towards keeping this purity intact by making the waters clean and pollution-free. Because of the establishment of a large number of industrial cities on the bank of river there are several types of waste like human waste, animal waste, industrial waste, religious events waste etc. mixing in water bodies (like Ganges and other rivers around the world). The mobility of the river is immobilized by the plastic materials being the primary object of pollutions of our environment. The floating plastic material cleaner for water bodies is one of the novel and cost effective solution on the aim of pollution free environment. The present technology will detect the plastic as well as other lumped polluted material through sensing technology. Accumulating all the polluted material with a motor controlled automated rotatory chained chassis arrangement it put the waste in a bin attached with the module. On the view of non-conventional source of energy the system operates with solar technology. The novelty of the proposed design is concentrated on keeping power consumption in mind, the innovative proposed module will only work when it detects any waste in front of the sensor and on that time the motor controlled rotatory chained chassis arrangement starts to work.



2. Drainage Waste Cleaning Sophisticated Module.

Drains are crucial in maintaining a clean, hygienic and odor free environment, as they are our main disposal channel of liquid waste. If drains get blocked, not only will waste be prevented from passing through, but also a build-up of soil and bacteria will occur, closely followed by strong unwanted smells. As a hygienic control plan this proposed sophisticated prototype will automatically clean the drains through different robotic motorized cleaning arrangements and collecting the drain waste in a container attached with the cleaner. The full container will leave the waste in road side defined place. In day to day life in Kolkata as well as in various places around the world, drain blockage is a primary concern of society. Drainage Waste Cleaning Sophisticated Module will retain the drains uncontaminated sustaining hygienic environments as well as keeping rivers clean from drainage wastes.



3. Pre Disaster Alert System with Six Sense Interpretation Process.

In present age, the advancement of BCI technology carrying its importance towards the interpretation of several brain signal. The existence of six senses is a very important research investigation article under BCI research. Research experience says six senses of animals can pre-assume the natural calamities. The proposed innovative concept introduced as pre disaster alert system with interpreting the six sense brain signal of several animals. Normally, the system monitoring EEG (Electroencephalography) for a dog as a real time basis informing the specific variations of EEG(six sense) in case of pre-assuming natural calamities, presenting the alert commands of Tsunami, Earthquake and others disasters.

**Intellectual Property of India (Patents) published through CII Center for
Innovation by JIS College of Engineering.**

Patent Published -

1. Patent Filing in INDIA:

Title of the Innovation: **Hybrid Solar-Wind Twin Charger for Mobiles.**

File no. **201731011719.** Date: **31/03/2017.**

Indian Patent Journal no.- The Patent Office Journal 21/04/2017 pp 10931

Name of Inventors: **SUDIPTA SAHANA, KAUSHIK KUMAR, ANIKET KUMAR, DIPESU BANERJEE, DR.BISWARUP NEOGI**

2. Patent Filing in INDIA:

Title of the Innovation: **Smartphone Flip Cover Charger. (SFCC).**

File no. **201731011724.** Date: **31/03/2017.**

Indian Patent Journal no.- The Patent Office Journal 21/04/2017 pp 10933

Name of Inventors: **DR. BISWARUP NEOGI, SOUROJIT GHOSH, SUDIPTA SAHANA, ABHIJIT DAS, DIPESU BANERJEE**

3. Patent Filing in INDIA:

Title of the Innovation: **Smart Locking System For Home Security**

File no. 201731023298 A Date: 03/07/2017

Indian Patent Journal no.- The Patent Office Journal No. 31/2017 Dated 04/08/2017-25644

Name of Inventors: **SUDIPTA SAHANA, SUVAM BASAK, SREEJA CHOWDHURY ARITRA CHAKRABORTY**

4. Patent Filing in INDIA:

Title of the Innovation: **System for medical treatment following music therapy and the method thereof**

File no. 20 / KOL / 2014

Indian Patent Journal no.- The Patent Office Journal No. No. 6 / 2014

Name of Inventors: **SOMSUBHRA GUPTA**

5. Patent Filing in INDIA:

Title of the Innovation: **A Natural Language Processing System having Computational Linguistic Approach**

File no. 201731011952 A

Indian Patent Journal no.- The Patent Office Journal No. No. 04 /

Name of Inventors: **SOMSUBHRA GUPTA**

Patent filed -

1. Patent Filing in INDIA:

Title of the Innovation: **Cloud Network Monitoring System**

File no. 201731027744 Date: 04/08/2017

Name of Inventors: **SUDIPTA SAHANA, DR. DEBABRATA SARDDAR**

2. Patent Filing in INDIA:

Title of the Innovation: **Less energy consumable auto rechargeable table fan**

File no. Date:

Name of Inventors: **SUDIPTA SAHANA, SUVAM BASAK, SREEJA CHOWDHURY
ARITRA CHAKRABORTY**

3. Patent Filing in INDIA:

Title of the Innovation: An Integrated System for Detection of Target Object

File no. Date: 02/08/2017

Name of Inventors: **DR. DHARMPAL SINGH, AMRUT RANJAN JENA,
MADHUSMITA MISHRA**

4. Patent Filing in INDIA:

Title of the Innovation: Weather Prediction System

File no. Date:

Name of Inventors: **DR. DHARMPAL SINGH**

**Problem Statements of Tata Steel for Innovative Solutions through CII
Center for Innovation by JIS College of Engineering.**

In Mentors' Speak session during ICT East 2016 in ITC Sonar Bangla, students from JIS College of Engineering formed team and presented their business ideas to the industry leaders and mentors like:

- **Mr Aloke Mookherjee**, Chairman, CII Eastern Region Innovation Task Force
- **Mr Sauvik Banerjee**, Global CTA & Innovation Lead, SAP
- **Mr Sandipan Chattopadhyay**, Founder & Mentor, Xelpmoc
- **Mr Kaushik Chattopadhyay**, Associate Director, Cognizant Technologies
- **Mr Shiladitya Mukhopadhyaya**, CTO & Co-Founder, Rasilant Technologies Pvt Ltd
- **Mr Siddhartha Mitra**, Analytics and Information Management (AIM), Cognizant Technologies.

Mentors guided the teams to develop their ideas further.

As a part of Innovation Club activity, Tata Steel Ltd. Provided the problem statements for innovative solutions. The concerned officials of Tata Steel Ltd will guide and mentor students of the Club who will come up with some solutions.

- Robot/machine to capture facial recognition for decision making on consumer buying.
- Smart furniture - categorize and business opportunity (locking and unlocking).
- Smart techniques for fabrication of Modular Gates and grills.
- Design and develop rural end consumer products from steel (HR, GP, GC, CR).
- Using steel low cost modular kitchen/appliances/storage solution for rural.
- Solar home lighting solution - opportunities and business potential.



Confederation of Indian Industry

Innovation Club
An initiative of CII Eastern Region

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Problem statement from Tata Steel:

- 1) Robot/machine to capture facial recognition for decision making on consumer buying
- 2) Smart furniture - categorize and business opportunity (locking and unlocking)
- 3) Smart techniques for fabrication of Modular Gates and grills
- 4) Design and develop rural end consumer products from steel (HR, GP, GC, CR)
- 5) Using steel low cost modular kitchen/appliances/storage solution for rural
- 6) Solar home lighting solution - opportunities and business potential