

Profiles of the Top 10 ventures Tata Social Enterprise Challenge 2017-18

The Elbow Engineers- Winners

Category: Water & Sanitation

Location: Chennai-based

Solution: Elbow Engineers generates and purifies water from the atmosphere while cleaning the air we breathe by means of removal of water-borne microorganisms and harmful organic chemicals and finally through an Ultra Violet Light Sterilizer to eradicate bacteria and viruses.

The objective is to provide the world with a comprehensive water generation solution that is efficient, sustainable and cost-effective. Kumar's AWG MyGanga is a device that generates water by condensing water vapour and provides clean drinking water at a rate less than 84 paise per litre. There are 3 models –

i) Portable model: 3 litres/day; ii) Domestic model: 20 litres /day; iii) Commercial model : 10,000 Litres /day

Chakr Innovation- 1st Runners Up

Category: Technology & Development

Location: New Delhi

Solution: Chakr Shield, a device which can be retrofitted on diesel generators and can capture 90% of particulate matter emission.

Chakr Innovation aims to create pioneering, sustainable and scalable technologies to combat the grave threat posed by pollution. As an organization, their mission is to develop and implement technologies which can effectively control pollution - saving the natural environment and people's health. Currently, they have identified air pollution as a focus area due to its tremendous health and environmental impact. Diesel generators being a significant contributor to ambient particulate matter, they have developed a novel device which can capture up to 90% of particulate matter being emitted from diesel generators. Created using a novel method, it is a one-of-a-kind device which controls pollution without causing any adverse impact on the engine's performance or the environment. Along with controlling emission at source, the technology also ensures that the collected particulate matter is not disposed-off or burnt but is used as a raw material for inks and paints.

JK Nanosolutions- 2nd Runners Up

Category: Water and Sanitation

Location: Bengaluru

Solution: A cost-effective rapid solution for complete treatment of waste water and textile effluent using nanotechnology (metal nanoclusters having high surface area).

Initially, they developed nanotechnology-based treatment method to treat waste water and then followed by treatment of textile effluents collected from different locations in Tamil Nadu and Bengaluru in India. They filed a patent of their technology followed by a demonstration to relevant authorities to revoke the closure. By this method, 98 percent of treated water can be reused. Their production capability is 500 litres per day of nanosolution, with nanoclusters. The technology was also demonstrated at village level for domestic waste water treatment and treated water suitable for agriculture. They have also helped the Chennai Corporation during the December 2015 Chennai floods by disinfecting microbes using nanosolutions at 40 different locations to prevent disease outbreak and for treating the waste accumulated.

Bombay Bijlee

Category: Energy

Location: Mumbai

Stage: Bombay Bijlee has already done a pilot launch.

Solution: Providing access to clean energy affordable to off-grid and grid underserved households of India.

Electricity consumption for lighting is one of the prime leading indicators of development of emerging economies. Also, light is one of the first applications of electricity dating more than 200 years back. However, in India, when darkness falls, nearly 50 million households resort to kerosene lamps for lighting. In addition to the emission of harmful gases by burning of kerosene, these households spend up to INR 300-400 per month on kerosene. At this juncture, this organisation steps in to provide a solution to make consumption of energy affordable to the common rural people.

Cerelia Nutritech Private Limited

Category: Healthcare

Location: New Delhi

Solution: Cerelia initially aims to solve the problem of maternal anaemia in a bid to save at least 33 women dying per day during delivery of their children.

They are developing a technology that can save 2 billion people globally from MNM (micro nutrient malnutrition) and at least 35,000 mothers dying per year in India during labour. Their frugal (provisional patent applied) solution is based on the scientifically established principles of transdermal delivery of biomolecules which is adapted for delivering micronutrients to the blood through the skin using moisturiser as a vehicle for delivery. Using their technology CereDermTM, the micronutrients enter directly into the blood stream, with an onset time of 15 min. Pre-clinical studies with vitamin B12 have established a relative bioavailability of 67.9% as compared to oral solution of B12. Their AayuhTM line of products utilising CereDermTM would enable delivery of WHO/UNIMMAP prescribed RDA with minimal overages, improved safety profiles, controlled delivery, and reduced dose variation.

Manuring It!

Category: Microfinance/financial inclusion

Location: Kolkata-based.

Stage: Manuring It! have done a pilot launch of a digital platform accessible through a mobile missed call for farmers for their credit and farm needs.

Solution: Manuring It! is the real-time alternative lending and supply chain for farmers which would augur two-fold benefits for both the farmers and bankers through improvement in farm incomes and reduction in farmers' NPAs respectively.

A digital platform for farmers, accessible through a missed call from a mobile, has been introduced, which caters to their credit and farm needs. They issue the service through digital transfer time and farm need-based specific credit packages ranging from INR 500 to INR 5000 to cover their farm input and plantation cost at various cycles of a crop. The platform is run on Java and the algorithm calculates in real time the need for credit or farm input for a farmer. It initiates the same for their company through a transfer of credit and provision of technology on rent, through a mobile text message and a call.

Nanobios lab, IIT Bombay

Category: Healthcare

Location: Mumbai-based

Stage: Nanobios lab from IIT Bombay has an idea with a prototype.

Solution: Invented a device to determine HbA1c level which reflects the mean and GA (to test gestational diabetes) simultaneously to prevent unnecessary injection of insulin in pregnant diabetic women.

POCT devices are useful as diabetes care tool where type 2 diabetes is prevalent, especially in resource-limited settings, due to the relatively inexpensive technology. For a simple urine pregnancy test strip, their lateral flow HbA1c immunosensor is user-friendly with relatively easy sampling, testing, and subsequent interpreting procedure as against the prevailing liquid based GA diagnostic assay available in the market which has many interference factors like glucose, haemoglobin, bilirubin and infection. Their reader can nullify the effect of present interference factor as the device has the provision for input of all interference factors and algorithm programs. Current POCT is affordable for HbA1c and GA as compared to the diagnostic available in the market. The Android app enables the user to share patient data from primary (rural) care centre with the diabetologist.

Resnova Technologies Pvt. Ltd.

Category: Agriculture, Food, Dairy

Location: Kochi-based.

Solution: Developed Dairy Management System which is a product designed to solve the issues faced by farmers with the aid of technology. It enables early detection of diseases, management of resources and improved productivity in dairy farms.

Through development of Dairy Management System, they have made an attempt to bring technology at an affordable cost to small scale farmers, so that these farmers could harness the power of technology and make their business profitable. By using advanced MEMS technology, they have come up with sensors and data acquisitions systems that are technologically superior to the existing high-tech solutions and are cost-efficient. This disruptive innovation can help both small scale farms and can be integrated on to high-tech systems for more accurate assessments.

Sonant Technologies Pvt Ltd.

Category: Others

Location: Jaipur/Ahmedabad-based.

Solution: Development of an assistive device, αGloves, which is a pair of gloves with several touch-sensitive spots on the fingers and a smart wristband with touch display and speaker, through which deaf and mute can effectively communicate with normal people

Sonant Technologies is developing an assistive device for deaf and mute which combines both state of the art innovation and affordability together in the field of assistive technology. They have developed their first patent pending product "αGloves", which is a pair of glove with several touch-sensitive spots on fingers and a smart wristband with the touch display and speaker. αGloves aids in both "hearing" and "speaking". αGlove has the following advantages over other competitive solutions, namely - affordability (Approximately INR 10,000), supports more than 80 Languages, aids in both "Hearing" and "Speaking", very Fast-Real time switching between word/sentence/full language mode make speaking rate really fast, and above all - easy to use, waterproof and portable.

**Other decent AAC Devices cost Rs2-5 lakh. There is also ADIP scheme of GOI in which Govt gives 100% financial support if any assistive device cost less than 10k Rs and INR 10k+ 50% margin if cost is more than 10k.

Villamart Pvt Ltd.

Category: Agriculture, Food, Dairy

Location: Bhubaneswar-based.

Solution: Villamart is creating a marketplace for farmers and rural professionals, where they can sell their produce without any middleman, thereby ensuring higher income and more job opportunities in the rural sector.

Villamart would usher in sustainable livelihood for the rural sector through the creation of a marketplace where buyers and sellers can interact, and in the process, the middleman is eliminated. This will enable the farmers to integrate necessary technologies during cultivation at each step and take care of their product until it reaches the consumers. Proper distribution of foodstuffs through their market chain and the cheapest nano cold storage will reduce the vegetable perishability and stabilise the vegetable pricing round the year. Technological support to farmers and other farming professionals will make those following this profession profitable and help them achieve respect in society.