

**7.4.5 a - Start-ups that foster and
support a low-carbon economy/
Technology
(Startups in Carbon Technology)**

Startups in Carbon technology

1. Impensus Electronics Pvt. Ltd.

By 2050, world needs 2x more food than today.

Impensus provides solutions to tackle the 2 key problems –

- Lack of efficient cultivation technology
- Lack of efficient storage solutions

Impensus plays a key role in providing solutions from the farm to the fork. With our expertise in cold store automation user can increase the shelf life of the commodity by 1.5 to 2 times and with our protected environment solutions user can grow pesticide free crop with better nutrition value all-round the year. Our smart system with integrated IoT modules helps user to monitor

Automated Mushroom Cultivation in CIIC



Crescent **IIT Bombay** **BIRAC**

CENTRE FOR RESEARCH IN PRECISION AGRICULTURE & RURAL TECHNOLOGIES

Controlled Environment Mushroom Cultivation

Automated Mushroom Cultivation System

Sensor Module To monitor the parameters (Temperature, RH, CO2)
Main Controller To run the process and link with other systems
Refrigeration System To control temperature
Humidifier To maintain the humidity inside the room
Ventilation Dampers To remove excess carbon dioxide from the room

Sensors Specifications
 Temperature: 0 - 50°C
 Humidity: 0 - 100%
 CO2: 0 - 3.2%

Main Control Specification
 Fully Automatic Control System
 Touch Screen Display
 IoT - Enabled system for future integration

Accessories
 Humidifier: 9 Kg/H
 Damper: 100 cfm
 Refrigeration: 1.5 TR

A Model of Controlled Environment Automated Mushroom Cultivation

Project Implementing Startup
Impensus
 Recognized by Start-up India #StartupIndia

Harvest



Impensus Electronics Pvt Ltd (A startup incubated in CIIC) installed a pilot unit of "Controlled Environment Mushroom Cultivation" in CIIC integrating different sensors, humidifiers, ventilation dampers, refrigeration systems to provide an automated mushroom cultivation system.

and control the parameters that helps to provide right ambience for growing and storing.

Their IoT integrated smart solutions monitor and control the parameters to give the right ambiance for growing and storing

Impensus Electronics Pvt Ltd has been selected as winner of Facility for low carbon technology deployment (FLCTD) Innovation challenge 2020 under space conditioning category. The startup will be funded by UNIDO www.unido.org , a grant of Rs.25 lakhs, to demonstrate their technologies used in the cold storages at various sites in India. After successful demonstration UNIDO along with CII will validate this technology and provide support for further development.

WINNERS INNOVATION CHALLENGE 2020

SPACE CONDITIONING

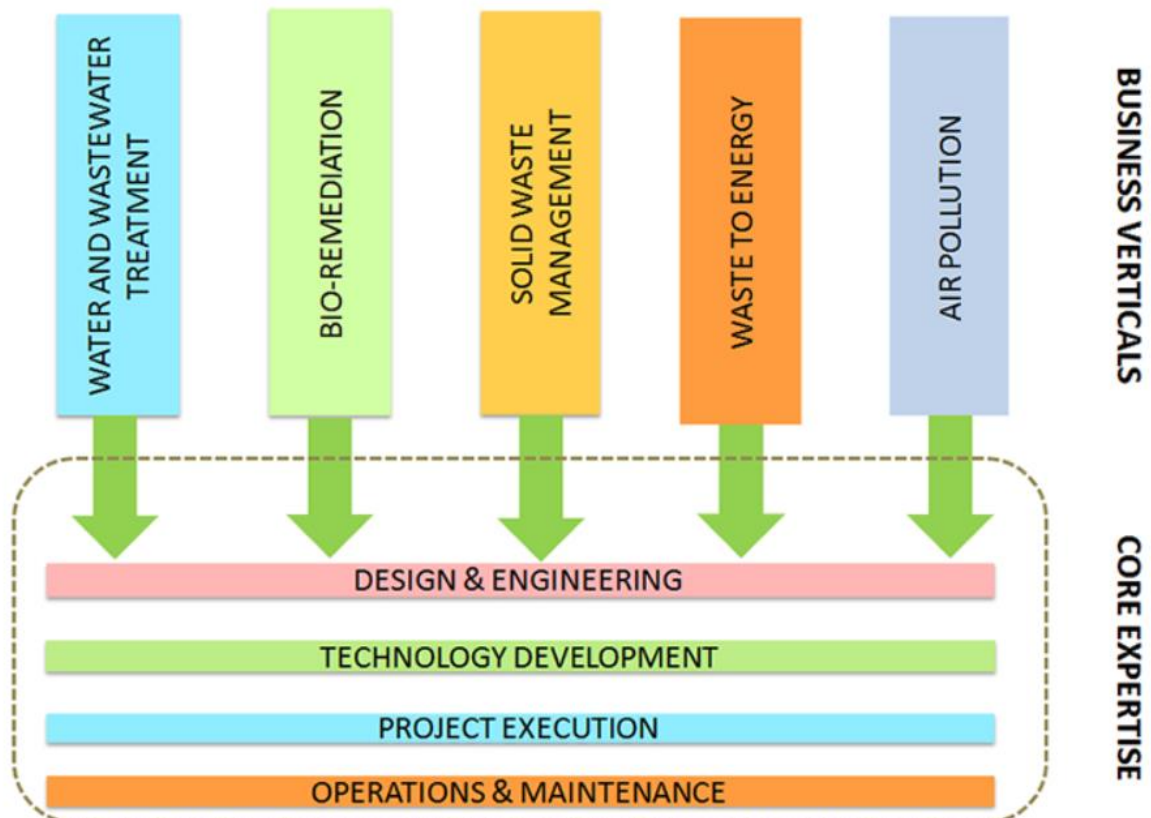
 TESSOL <i>Innovate. Preserve. Grow</i> THERMAL ENERGY SERVICES SOLUTIONS PVT. LTD.	 APROPOS DRIVE APROPOS DRIVE TECHNOLOGIES PVT. LTD.	 INTEGRATIVE DESIGN SOLUTIONS PRIVATE LIMITED
 impensus <i>Not Your Usual Cold Chain Experts</i> IMPENSUS ELECTRONICS PRIVATE LIMITED	 PLUS TECHNOLOGY FOR A BETTER WORLD PLUS ADVANCED TECHNOLOGIES	 prompt <i>The pursuit of purity</i> PROMPT EQUIPMENT PRIVATE LTD
 temperate TEMPERATE TECHNOLOGIES PVT. LTD.		

FLCTD
Promoting Innovation and Deployment of Low Carbon Technologies

2. Kankyo Group of Companies

Kankyo Group has broad experience in Design, Engineering, Procurement and Construction of waste to-energy plants, solid waste treatment, bioremediation, wastewater and water treatment facilities. We provide all technical and management skills required to complete a project successfully. We operate as a full turnkey EPC contractor according to Global Standards. We offer far reaching solutions that extend possibilities beyond industry -norms in providing material value in terms of both financial and technological long term sustainable benefits.

KANKYO's lake/river restoration treatment using Mira Carbon- A novel Japanese Technology. Mira Carbon's Carbon Fiber is a fibrous carbon substance having a fine graphite crystal structure which is manufactured by carbonizing acryl fibers by a special heat treatment process. Carbon Fiber is generally said to be a light, strong, corrosion resistant advanced functional material. It is used as a water purification material, when it comes in contact with surface of water the fibers expand. Active biofilm is formed by high bioaffinity of carbon Fiber and its microorganisms decompose the contaminants.



3. Aatrel Pvt Ltd.

The vision of ATRAL is to create a green renewable energy society and also to create an ecological systematical world.

Our mission is to create a pollution-free universe healthy livable community and an essential ecosystem to preserve life on the planet and regulate climate.

During Global warming, AATREL is now working to reduce carbon dioxide (CO₂) Emission to create a Renewable energies. Working Currently on Technology in Biogas & Algae

Even though, Biogas and Algae technologies are not efficient in the green energy Industry. But, in our AATREL'S MISSION A1. We are connecting both the technologies in a unique way to get efficient renewable energy. Simultaneously we can do Carbon Trading Revenue through this process. The Technology is called Algae Scrubber.

Exhibitor

at

GITEX FUTURE STARS



Pod No: Z5-354, Z5-355, Z5-356, Z5-357

CRESCENT INNOVATION & INCUBATION COUNCIL

StartupTN

Crescent
Innovation
Incubation
Council
(A Section 8 Company Under Companies Act 2013)

91 Startup Compendium



EU - INDIA INNOVATION PARTNERSHIP

European Commission has recognized CIIC as an India Incubation Partner



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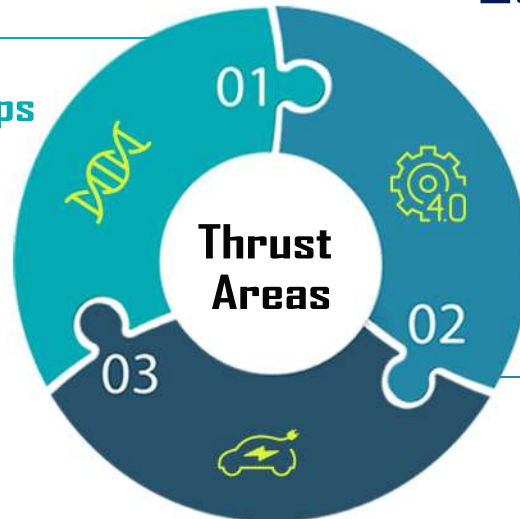
www.ciic.ventures

Start-up Infographics

20 Industry 4.0 Startups

65 Life Sciences Startups

Agri - Tech
Med - Tech
Bio - Energy
Bio - Pharma
Bio - Services
Bio - Industrial



IoT
Big Data
Simulations
Cloud Computing
Augmented Reality
Autonomous Robot
System Integration

6 Mobility & Transportation Startups

Drone Technology
Smart Electric Vehicle
EV Battery Management

46 External Startups



Providing solutions to reduce Co2 emission through algal technologies

UN SDG : 13,15



Predictive toxicity screening of small molecules in non animal models i e. C.elegans for accelerating drug discovery

UN SDG : 3,9



AcaDiCell Innovations International Pvt. Ltd. (Innovate & Inculcate)

Offers Stem cell based research & trainings and also involved in research on molecular diagnostics

UN SDG : 3, 4



Agrifaculture India Pvt Ltd

Public toilets for women on electric autorickshaws with patent pending Nanoflush No view and thermal composting preprocessor and sanitary napkin pasteurizer

UN SDG : 6



Aloe Ecell is the world's first 100% ecofriendly and non hazardous 1.5V AA size Aloe vera Batteries which are an alternative to the deadly hazardous dry cell batteries

UN SDG : 6



To Invent and Commercialize Novel Genetic Diagnostic Platforms

UN SDG : 3



R&D activity in the field of Genetic Engineering for agriculture, Pharmaceutical, Food, Feed, Vaccine and Dairy products

UN SDG : 3, 4



CareMe Health

Creates a digital health care delivery system and provide direct patient care via telemedicine

UN SDG : 3



CLACO PVT LTD

Providing research & learning platform for students and developers to compete in the global market

UN SDG : 4



CREST INNOVATIONS

Developing food formulation for an effective management of chronic health conditions

UN SDG : 3



Developing a convertible electric wheelchair cum bed with a novel defecation system to assist the immobile population

UN SDG : 3



E3IQ

Developing cutting edge Extended Reality (XR) products & services to help industries in digital transformation elevating efficiency of training & operations

UN SDG : 9



Providing infrastructure management services to clients globally by providing IT operations

UN SDG : 9



ENMAZ aims at revolutionize the process of digitizing any factory/ industry and enable customers to analyze productivity, process efficiency and machine condition like never before

UN SDG : 9



EXONN BIOSCIENCES

working in the field of biotech & IT with the use of data science to analyze patients disease at the molecular level to address them with right treatment

UN SDG : 3,4



Developing product called "GroTron® is a "360° Autonomous Precision Farming Platform" that encompasses all facets of Agriculture using AI/ML/IoT

UN SDG : 2,12

FRONTIER LIFECARE INNOVATION PVT LTD

Focusing on Molecular Biology & Cytogenetics based research and services

UN SDG : 3



Innovated, Developed & Patented high dietary fibre, high protein, Low GI white polished "Village Rice"

UN SDG : 2,3,12



GRITTER SOLUTIONS PVT LTD

Developing AI based gamified & targeted indoor vehicle advertising solutions for MSME's

UN SDG : 9



Development of super hydrophobic antimicrobial and reusable gloves

UN SDG : 3



Providing technologically driven IOT based products and solutions for post – harvest management and protected environment farming techniques

UN SDG : 2,12,13

ISOPORT CHAMBER PVT LTD

Redefining healthcare by building smart hospital infrastructure with IoT & AI /ML engine

UN SDG : 3



IVIEWSENSE

Providing business intelligence & Data Analytics consulting services, software solutions, products & training

UN SDG : 9

iGN Biotech Pvt Ltd

Redefining your health through genetics and cell therapy based technologies which holds the potential to revolutionize medical therapeutics

UN SDG : 3



Developing cutting edge biomedical instruments for Stem cell therapeutics and drug screening applications

UN SDG : 3



KARDLE INDUSTRIES PVT.LTD

Developing NextGen Bioprocess and Air Process Sysytems

UN SDG : 9



KY Technologies

Focusing on transforming offline and online businesses to achieve their full potential in their digital space with the help of technology and services

UN SDG : 9



Developing efficient high quality, eco-friendly cleaning products which helps in elimination of indoor pollution

UN SDG : 6



Providing an online platform and fingerprick blood testing services enabling the monitoring of ones health from the comfort their homes

UN SDG : 3



Mark Application Engineering Labs offers smart new product development possibilities by considering latest and advanced components and surface treatment technologies

UN SDG : 9



MirrAR platform simplifies the process of creating, sharing and exploring AR, VR, MR & 3D experiences without writing any code that works on any device in just few min to enhance better sales & customer experience

UN SDG : 9



Developing advanced, premium and indigenous protein and meal replacement products from plant and dairy sources for medical, fitness and health purposes

UN SDG : 2,3



Developing innovative drug discovery and synthetic organic chemistry solutions to pharma and life sciences industries for disease indication in oncology

UN SDG : 3



Developing indigenous functionalized magnetic beads for extraction & purification of biomolecules for industrial applications

UN SDG : 3



Developing cost-effective field based kits and devices for the rapid diagnosis of infectious diseases through innovative technologies at affordable price

UN SDG : 3



Digital Twins based Ed-Tech platform to deliver experience based & immersiveskill development programs

UN SDG : 4



Making Aquaculture sustainable through parameter monitoring and resource optimisation reducing mortality rates and yielding export quality shrimps

UN SDG : 14



Developing enzyme based cocktail with depolymerization for degradation of multiple polymers

UN SDG : 9,13



SIMHA BIOTECH PVT LTD

Developing herbal products that are suitable for nutraceutical, pharmaceutical & cosmeceutical application

UN SDG : 3



Shri Meenakshi Associate

Providing eco friendly false ceiling in weather fabrics to control the weather conditions effectively

UN SDG : 3



Providing solutions in the field of mechanical, electronics, IOT and automation space through strategic tie-ups & joint ventures

UN SDG : 9

STY.COM

Mobile based E-Commerce platform for clothing & accessories rentals with styling tips

UN SDG : 9



Democratizing fashion and making high end fashion affordable for masses

UN SDG : 10,12



Developing electric vehicles with better convergence of performance, efficiency and battery power compared to traditional IC engine bikes

UN SDG : 7



Collaborating Innovative Science & Technology to address some of the societies most challenging healthcare issues to improve and extend peoples lives

UN SDG : 3



manufactures educational robotic kits and components and aims to reconstruct the academic approach towards robotics and Automation

UN SDG : 4

10 Alumni Startups



An environmental technology and EPC firm, providing turnkey solutions in water & waste water treatment

UN SDG : 7



Offers customized Biogas solutions for a range of application

UN SDG : 7



KANKYO ENERTEK
FUELLING THE FUTURE

Developing patented methanol gasification technology that transforms a carbon based material into synthesis gas (Syngas)

UN SDG : 7



Kankyo Cleantech LLP

Providing solutions for solid waste management, waste to energy, bioremediation & air pollution control

UN SDG : 7



KRISHNA WATER HEATER SOLUTIONS

Heat Water, Instantly, Effortlessly with minimal Energy

UN SDG : 6



Developing eco-centric AI-IoT integrated smart alert indoor air quality monitor & advanced anti-microbial nanoparticulate carbon-metallic ion six stage purifier with photocatalytic oxidation technology

UN SDG : 3



iPropeller Technologies
Research & Development Pvt Ltd.

Edutech platform which engages students to do research in the field of Robotics, drones, aeromodelling, 3D printing & IOT

UN SDG : 4,9



REKINDLE
Safety Intelligence You

Rekindle Automations is a Healthcare based startup with the vision to Increase Safety of The Patients by Making the Hospitals more Intelligent

UN SDG : 3



Providing a low cost, high precision, data driven IOT based water management solution that solves the impending water crisis by reducing water consumption.

UN SDG : 6,7



60Plus India, is an online platform where children living away from their parents can book services and buy products for their senior citizen parents

UN SDG : 3

9 Faculty Startups



Providing solutions like drug formulation, repurposing of potential drug candidate & drug screening based on the customer needs

UN SDG : 9



Development of Humanoid robots to help retail business through face recognition, intelligent communication, customer feedback, sales & marketing support

UN SDG : 9



Developing technology and processed based on the microalgal biomass & products through NanoBiotechnology protocols

UN SDG : 2,12



Providing solutions for buildings that require repair and rehabilitation to enhance the service life of the building

UN SDG : 9,11



Mobile based application that enhances the google maps navigation system more accurately by using the 8 digit alphanumeric code

UN SDG : 9



Development of Nanoparticle rubber mix to improve tire durability, increase life cycle twice & decrease waste generation

UN SDG : 7



Development of Nanoemulsion mechanism which is unique disinfectant which fights rice fungal pathogens

UN SDG : 3



Providing solutions for farmers to use technology driven methods to increase productivity of crops

UN SDG : 2,3

26 Student Startups



Bio-Nawrap

Developing an eco-friendly Bio-Nawrap which enhances the protection of food items placed inside the wrap against food borne pathogens and also increase the shelf life of food

UN SDG : 7



Organic nano based formulation to cure acne. A natural solution for young, healthy and glowing skin. COS-NO-ACNE cream completely clears ACNE

UN SDG : 3



Development of antibacterial drug formulation by using anionic protonophore and tannic acid

UN SDG : 3



Developing green nano based disinfectant against multidrug resistant microorganisms to provide germ free environment.

UN SDG : 3



SIL-CHILL-BURN

Chill your burns

Developing green and clean based bag, an eco-friendly product for the waste water treatment

UN SDG : 7



TRANQUIL NANOMEDS

CURE FOR CELLULITIS

Nano based cream to control Bacteria induced secondary wound infections

UN SDG : 3



Alternative natural supplements for chemotherapeutic drugs used in the Treatment of cancer using plant-based Natural substances with no Side-effects prepared in a Cost-effective Manner

UN SDG : 3



Nanotech formulated fish feed which serves as immune booster, prevention of vibriosis and also act as growth stimulant

UN SDG : 14



Multipurpose nanobased plant growth promotor and protector from bacterial fungal diseases, green and eco friendly, biodegradable, non toxic formulations developed by Innovatino

UN SDG : 15



An anti-fungal eye drops using nanotechnology to Cure eye infections caused by various fungal species

UN SDG : 3



Smart Fuel

Stopping pollution is the Best Solution

Developing a non-toxic environmentally friendly bio-fuel

UN SDG : 7



UTI - CIDE

Developing novel drugs for Urinary tract infecting pathogens

UN SDG : 3



ALION

Step towards Green

Developing green and clean based bag, an eco-friendly product for the waste water treatment

UN SDG : 6,7



CITRUS

FROM CANKER TO NECTAR

Nano based spary to control and prevent citrus canker in various species of Citrus

UN SDG : 3



FOREVER STEEN

Grow to glow

An organic, nano based anti aging cream to reduce the wrinkles and fine lines for visibly firmer-looking skin

UN SDG : 3



LAC GEL

An antimicrobial gel formulation for topical use, effective in cuts, burns and wounds

UN SDG : 3



NAN-O-FRESH

As our guardians against hazardous microbes in and around our bodies, environmentally safe nanomaterials are integrated into our products

UN SDG : 3



techet

techno solutions

Development of Electric vehicle charging points directly from power grid mitigating range anxiety faced by Electric vehicle

UN SDG : 9



VIBROTIC

FEED ADDITIVE, MORE PRODUCTION

Feed additive to prevent vibriosis and to promote fish growth

UN SDG : 14



BacKM Capsule is an Eco-friendly product to remove dyes from various industrial effluents to utilize for sustainable agriculture

UN SDG : 7



CLENSELLA

Natural innovation

A safe natural cleanser which acts as a biodefensor against multi drug resistant pathogens

UN SDG : 3



HERBOBLEND

Nanotech based feed additive for poultry to stimulate the immune system and gut health against various antibiotic resistant pathogens

UN SDG : 15



MHS

CREATING BIOREMEDIATION

Development of biomaterials for the treatment of effluent water sludge to achieve zero sludge disposal

UN SDG : 7



SENSOCAN

SENSE WITH BASE

An accessible, affordable, non-invasive and easy to use diagnostic kit for detecting oral cancer using salivary based biomarkers

UN SDG : 3



TRADENT

Defining the future...

Tradent aims on automated farming in the absence of human/farmers yet performs the same work even more efficiently and in a human friendly way

UN SDG : 2,12,15



Focusing on microbe-free water and research footsteps to make effluents contamination free

UN SDG : 7

Partners

Government



Ecosystem



TamilNadu Biocluster



Investors



Business



International

