Technology01

Details of Scientist	Prof. Manu Sharma (9888509778) manu@pu.ac.in
Details of Technology	A team of Scientists from PGIMER, Panjab University and IITRopar have successfully developed Artificial Breathing Capability Device (ABCD). Video is available at https://www.youtube.com/watch?v=UuzRc6pr4PM In this product, AMBU bag compression and subsequent release has been automated. Product has undergone extensive testing in lab and has undergone successful clinical trials in PGIMER, Chandigarh.
Patent Status	Indian patent granted for this invention
Target Companies for Technology	Allengers, RMSetc
Assistance required from CII	We want CII to assist us in Transferring this Technology to some Companies. Please connect us to companies that can commercially produce this product.

Technology 02

Details of Scientist	Prof. Manu Sharma (9888509778) manu@pu.ac.in
Details of Technology	We have developed wood engraving machine whose gantry has been designed while exploiting domain knowledge of "Vibration Engineering". Gantry of machine designed by us is light and is much stable. Chatter in this machine is very less and surface finish obtained on work piece is very good.
Patent Status	No
Target Companies for Technology	Machine tool manufacturers
Assistance required from CII	Please connect us to industry that wants to design structures of their machines from vibration point of view.

Technology 03

Details of Scientist	Dr.GauravSapra (9815858051) gs.panjabuniversity@gmail.com
Details of Technology	Automatic Inspection Machine for Fastener Industries
Patent Status	No
Target Companies for Technology	Fastener Industries
Assistance required from CII	Funding from industry to commercialise the machine

Technology 04

Details of Scientist	Prince Sharma and Naveen Gupta (9815957903) princess@pu.ac.inng.puchd@gmail.com
Details of Technology	Technologies ready to be tested by industry: 1. Prof. Prince Sharma and Dr. Naveen Gupta: with L" OREAL An enzyme based eco- and health-friendly hair dye formulation to be transferred to L" OREAL for testing. 2. Prof. Prince Sharma and Dr. Naveen Gupta: Technologies for paper mills (TRIDENT) a. A cheaper and safe biocide to prevent microbial biofilms and growth in water circulation areas that spoil the paper. b. An enzyme cocktail for eco-friendly bio-bleaching of pulp. 3. Prof. Prince Sharma and Dr. Naveen Gupta: Initial Talks with Panacea Biotech Vaccine formulation against drug resistant bacterial pathogen: Acinetobacterbaumannii. 4. Prof. Prince Sharma and Dr. Naveen Gupta: Looking for industry for Biological Indicators for validation of sterilization
Patent Status	No
Target Companies for Technology	L" OREAL, TRIDENT, PANACEA and others
Assistance required from CII	Mediate the tech transfer between PU and Industry

Technology 05

Details of Scientist	Dr VanditaKakkar (8283804935) vanditakakkar@yahoo.co.in
Details of Technology	We wish to commercialise the white curcumin and tacrolimus ointment for dermatitis, psoriasis and other skin inflammatory disorders.
Patent Status	Yes..Granted patent
Target Companies for Technology	Glenmark, Panacea , Gladerma, any company manufacturer of topical ointments
Assistance required from CII	Tech transfer

Technology 06

Details of Scientist	Dr. Kashmir Singh and Dr.Baljinder Singh(9501684096) kashmirbio@pu.ac.ingilljwms2@gmail.com
Details of Technology	We have designed an effective cheapest method of removal of basic--cationic dyes to reduce TDS from textiles industries' effluent waste with zero-solid disposal and energy/resource recovery. We first designed the column using modified rice straw powder with a 97% removal percentage of dyes. The dyes were eluted from the saturated column by using solvents. The eluted dyes were further degraded by adding nano-composite in the presence of light (photodegradation). Further, the remaining treated rice straw powder was used to prepare biofertilizers. The commercialization of this technology also overcomes the problems of rice straw burning (common post-harvest practice) that cause's air pollution called the "Black Cloud".
Patent Status	No
Target Companies for Technology	Textile industries
Assistance required from CII	Financial support for commercialization of technology

Technology 07

Details of Scientist	Kunal Singh (8872602788) kunal7biz@gmail.com
Details of Technology	A portable non-contact hand sanitizer wrist band which can be strapped on wrist and with the help of an infrared sensor detects a finger gesture to dispense sanitizer from a nozzle. This machine is compact and suitable for doctors and people dealing in highly contaminated areas. This machine uses a self-designed mini peristaltic pump to maintain the flow of sanitizer which also makes the system leakproof.
Patent Status	Patent published on 28 jan, 2022
Target Companies for Technology	Tynor, dettol, Savlon etc.
Assistance required from CII	Funding to miniturize the product further, manufacture few to sell them through my own company (Futabot technologies Pvt. Ltd.)

Technology 08

Details of Scientist	Ganga Ram Chaudhary, MoondeepChauhan, Bunty Sharma(09878822323) grchaudhary@gmail.com
Details of Technology	The present invention relates to a bio nano-composite material comprising a natural fiber on which metal oxide nanostructures are grown. The bio-nanocomposite or metal oxide nanostructures based bio- platform of the present invention system is scalable and exhibited noticeable significant stability, recyclability, self-cleaning, photocatalytic and antimicrobial properties. Thus, the bio nanocomposites of the present invention are ideal candidates for construction of materials which can be used in variety of applications such as antimicrobial and self-cleaning, water cleansing, biomedical application, smart textiles, etc. The textile product of the present invention can be used for numerous purposes. Some of the non-limiting examples include air purifiers, smart curtain materials with self-cleaning and microbial properties, medical bandage, water filters, and mask.
Patent Status	Yes, Patent filed (Application Number 202011003954 A)
Target Companies for Technology	Textile and fabric manufacturing industries
Assistance required from CII	Scale up study, pilot studies and technology transfer

Technology 09

Details of Scientist	Ganga Ram Chaudhary, MoondeepChauhan, Bunty Sharma(09878822323) grchaudhary@gmail.com
Details of Technology	India generates on an average 500 Million tons Mt of crop residue per year in which 92 Mt is burned and causes serious environmental problem. 2G bioethanol production from waste agricultural crop residue is considered as effective solution to curtail crop residue burning problem. According to NITIAayog report, India requires 1500 cr. Litres of ethanol to reach 20% ethanol blending inpetrol till 2025 which is 114% more than the current production of 700 cr. Litres of ethanol. 2G bioethanol production from crop residue requires acid hydrolysis process to recover sugars in soluble form. However, the major challenge during this process is the recovery of sugar from the acid hydrolysate. We have developed a novel and low cost acid resistant up to 10M anion exchange membrane system (Patent Application No. 202211008379) for effective recovery of acid from hydrolysate. We want to develop a membrane system technology for pilot scale i.e. 50 kg biomass 2G bioethanol plant. the process economics of the membrane based recovery of sulfuric acid is disclosed. The acid cost to hydrolyze the 1 kg of pretreated biomass is 13.046 Rs. and neutralization cost is 54 Rs. Instead of neutralization membrane based acid recovery system is developed and the costs of 5 membranes are 45.15. The membrane costs were reduced by factor 30 because membrane is reusable upto 30 times. So the actual membrane process cost is 1.342 Rs. The overall process cost after applying membrane technology reached to 14.39 Rs. which is 3.75 times lesser the neutralization process. The revenue generated from this ethanol is equal to 25.35 Rs. This study suggests that10.96 Rs. Profit can be generated from the membrane based technology from 1 kg pretreated biomass.
Patent Status	Yes, Provisional patent application (202211008379) has been filed
Target Companies for Technology	Ethanol or Oil market companies
Assistance required from CII	Incubation, seed grant, commercialization platform

Details of Scientist	Dr. Manoj Kumar Sharma and Dr.NishaTayal(9872825095; 9814800768) man19ksharma@gmail.com tayal_nisha@yahoo.com
Details of Technology	In elections, a candidate with maximum number of votes, is elected but it has major flaw e.g. if a highest votes is only 31%, the candidate is declared winner though 69% people has not preferred him. To overcome this problem, preferential voting system is used, in which most preferred candidate is elected. Presently, this type of elections is conducted on paper ballot and counting is done manually, which may lead to errors in counting, delayed result and not environment friendly- requires paper. In Electronic Preferential Voting Machine (EPVM), the voting is done on electronic machine comprising Control Unit; Voting Unit; programmable processor. The Control unit functions to control Voting Unit, record and store the voting data into memory, count and display the votes polled and transfer the voting data for counting. Voting unit which acts as electronic ballot paper is connected to Control Unit and data related to preferential vote casted is transferred to Control Unit. The counting is done using a Programmed processor. Benefits of EPVM 1. The preferential voting system provides better representation in terms of selection of a most preferred candidate. As EPVM has automated the election process based on the preferential voting system, so all the organizations, associations, unions, groups, etc. which conduct elections for their executive bodies will opt for a preferential voting system (using EPVM). 2. Using EPVM, a common man with knowledge of machine operation can conduct elections based on preferential voting so it has omitted the need for an expert team for elections. 3. The same machine can be used for different elections with due modification of the candidate's list. This will be cost effective in the long run. 4. There is no chance of manipulation or tempering in EPVM as pointed out by some political parties for EVM. 5. It will save paper used for ballots as there will be an electronic voting process so it is environment-friendly. 6. It is a faster process for voting as well as the declaration of result.
Patent Status	Yes. Patent Granted
Target Companies for Technology	Election Commission of India, Bar Council of India,
Assistance required from CII	As prototype is ready. We require support in: --Testing and certification --Development at second phase --Marketing and commercialization help --To identify Firm/company for Technology Transfer

Technology 11

Details of Scientist	Dr. Ramesh K Sharma, Prof. G R Chaudhary and Dr MoondeepChauhan(9815604963) ramesh2659@gmail.com
Details of Technology	"Chemical free car boot Sanitizer and Indoor Car Air Purifier" The setup which we are reporting is capable of disinfecting surface of articles kept in boot area of car and also neutralize the VOCs, viruses, bacteria etc. present in the passenger cabin of a car by disinfecting the air in cabin. This setup is portable, simple to install and cost effective. It can be made built in as per specific requirement of auto manufacturer. 1. This product is first of its kind as it sanitize the grocery and other articles such as fruits and vegetables purchased from market while one drives back home. It also cleans the air in indoor cabin of car by killing the pathogens and destroying the harmful Volatile Organic Compounds (VOCs) 2. Three unique features work in synergy to make the product very powerful and effective. a. High intensity low pressure mercury tube for producing Germicidal radiation. b. UV-C reflecting coating to enhance the germicidal effect of radiation many fold by multiple reflections. c. Special “Hybrid metal oxide nano material”(Patented) coating exhibit synergistic effect with UV-C radiations to most efficiently destroy airborne pollutants like pathogens and VOCs inside car cabin.
Patent Status	Yes Two patents applied Application no: 202111032486 applied in July 2021 (for design) and application No: 202011003954 applied in Jan. 2020 (for material)
Target Companies for Technology	Tata Motors Mahindra & Mahindra or any other car manufacturer
Assistance required from CII	Interface with Industry

Details of Scientist	Dr. Ramesh K Sharma, Prof. G R Chaudhary (9815604963) ramesh2659@gmail.com
Details of Technology	"Ultraviolet sanitization Chamber" It is used for the disinfection of daily use articles to minimize the chances of infectious disease caused by bacteria and viruses including corona virus. It can disinfect the surface of any article placed in it in few minutes. It is capable of sanitizing articles such as papers, files, office articles, mobile phones, keys, pens and even household items. virtually any article which can fit into chamber Specifications 360 degree design, Germicidal UV-C radiation, Special UV reflecting coating to increase efficiency many folds, For the safety reason it cannot operate if door is open. Radiation safe window to see inside. Its main feature is scientifically proven UV-C reflecting surface which creates multiple reflections to enhance the effect of UV-C radiation. Version-I: 120 liters /50W, Version-II: 60 Liters/25W
Patent Status	No
Target Companies for Technology	Any company manufacturing consumer durable
Assistance required from CII	Interface with manufacturer

Technology 13

Details of Scientist	Indu Pal Kaur(9855166432) dripkuips@gmail.com
Details of Technology	The technology describes an efficient SLN system for encapsulating biomacromolecules like nucleic acids/ RNA including siRNA, which (i) encapsulates (rather than adsorb or surface associates) siRNA, (ii) does not employ any charged components, and (iii) exhibits efficient transfection. Cationic lipids or surfactants are invariably being employed for formulating SLNs so as to mask the high negative charge of siRNA and affect their efficient loading by adsorption or surface association on the previously prepared SLNs. Nonetheless, the former are costly and toxic, and cellular uptake of charged particles is also limited in comparison to the neutral particles. Moreover adsorption/surface association results in an increase in particle size, poor transfection efficiency, and no or insufficient sustained release. Additionally, since the biomolecule is loaded on the surface, hence it is prone to physiological and atmospheric degradation and the possibility of leaching upon dilution with body fluids cannot be ruled out. Technology describes an industrially viable, cold high-pressure homogenisation technique, with suitable modification, using GRAS low cost components. Use of cold rather than the hot homogenisation technique ensures small exposure of biomolecules to elevated temperatures. The novel SLN system was established to: (i) preserve the behavioural integrity of encapsulated biomolecule; (ii) be nanosized; (iii) show high entrapment efficiency; (iv) exhibit a prolonged controlled release, and (v) completely mask the extreme negative charge of entrapped biomolecule.
Patent Status	Yes, Patent 201611003140, filed on 28/01/16; published on 19/01/2018;FER issued and response to FER filed
Target Companies for Technology	Industries engaged in vaccine technology viz. panacea biotech Ltd.,
Assistance required from CII	I am looking for an industry partner for licensing of technology.