

**Minutes of Meeting of Industry-Academia meet entitled
“Assessment of R&D Needs of Industry”**

Date: 27th August 2021, Time: 3 pm – 5 pm

An online Industry-Academia meet to promote technology transfer ecosystem and taking research from the labs to market was organized by Technology Enabling Centre (TEC) at Panjab University, Chandigarh in collaboration with DST–Centre for Policy Research (CPR) and Chamber of Industrial & Commercial Undertakings (CICU), Ludhiana. The initiative taken was the need of the hour and one of its kind. Various industries from Punjab state and representatives from reputed research institutes like IIT Ropar, Forest Research Institute, Dehradun, Panjab University, Chandigarh; PEC, Chandigarh; CSIO, Chandigarh, etc. The aim of the meet was to have an interactive session between industries and research institutes to share and discuss the real issues, requirements and problems of industries. More than 30 industries had registered for the event through ‘Google Form’ and out of them 24 were shortlisted to speak in the event. The industries took part in the event are as follows:

S. No.	Name of Industry	Name of Representative	Topics
1.	CICU President	S. Upkar Singh Ahuja	Opening Remarks and Inauguration of TEC Website.
2.	Debros Enterprises, Faridabad	Mr. Sudhir Dua	Optimization of resources, CNC Press (Sheet metal) machines.
3.	ASCO	Mr. Sukhjot Singh	Forging of light and strong metals, coating process control, parts washing and rust preventive oil re-filtration, tooling management, human operations automation/standardization.
4.	Taaran Industries, Ludhiana	Mr. S.B.Singh	Low cost automation, hybrid 2 wheeler & 4 wheeler technology, hand holding for industry 4.0 implementation, construction & municipal waste management, low cost application softwares like maintenance, stores/inventory management, etc.
5.	Awantika Auto Industries	Mr. Harjit Singh	Automation
6.	Chhajju Singh & Sons, Ludhiana	Mr. Manpreet Singh	Automation in machine tools manufacturing

7.	Dhand Steels	Mr. Nikhil Dhand	Automation of certain processes to reduce labour dependency, data collection automation, systems & processes need.
8.	Shreyans Industries Ltd.	Dr. Anil Kumar Naithani	Wastage optimization, color removal from liquid waste, water conservation.
9.	Akal Enterprises, Ludhiana	Mr. Sarvjit Singh Ahuja	Automation, cost and quality improvement
10.	Bhoday Agriculture Works , Ludhiana	Mr. Tajinder Singh	Automation
11.	Uniparts india ltd, Ludhiana	Mr. Shiv Singla	R&D, simulation and testing
12.	Globe cycle industries	Mr. Kulbir Singh	Automation
13.	DP Chocolates, Baddi	Mr. Prakrity Bannerjee	Automation, smart control, optimization
14.	Sall Brothers (Regd.)	Mr. Kulwant Singh Sall	Automation-cum-Smart Control
15.	DNA Expert Services, Chandigarh	Mr. Deepak Kumar	New product development into areas like health, entertainment, general life solutions, electro mechanical.
16.	India Circuits Pvt Ltd, Panchkula	Mr. Rajneesh Garg	Requiring automation
17.	Sokhi Components	Mr. Sukhbir Singh Sokhi	Affordable automation, zigs and fixtures for helping manpower to work efficiently and accurately.
18.	Metlartis Enterprises Holdings, Mohali	Mr. Sumit Chakraborty	Automation, Core heat treatment, surface heat treatment, Twin turret turning cum milling center.
19.	Autom Engineering Corpn., Ludhiana	Mr. Satinderjit Singh Autom	Pedal Axles forging bars, Pedal Rubber, Pedal Axles forging and Mold and dies for Pedal Rubber, Low cost forging and molds.
20.	Alfa Cotec industries, Jaipur	Mr. Anuj nagpal	Automation, cheap robots
21.	Stainless steel Fabricator	Mr. Uday	Smart control
22.	National Agro Industries	Mr. Rajdeep Singh	A) High wear and tear in soil working parts B) Corrosion on the parts of machine after long exposure to natural environment
23.	Cheema Boiler Limited	Mr. Harjinder Singh Cheema, Mr. J P Kundra	Automation relevant to boilers, Hydrogen Splitting, carbon collection

Major Issues discussed are as follows:

1. Processing of raw materials and burning issues during color removal stage (which has been sorted out while collaborating with Thapar University, Baba Farid University) and other value added proposals of waste releases. Process or know-how to reduce water consumption for paper production.
2. a) Low cost application software to be implemented in MSME sector, b) Portable solar plants to generate energy as available in other countries, c) effective solution of construction and waste management.
3. a) Problems in components and blades used in agriculture, e.g. rotameter blade which costs Rs. 100 for 300 acre field life. Seeking support for the improvement of its lifetime utilization to at least twice. b) Surface protection of fields from environmental imbalances, e.g. rust prevention and increased lifetime. c) Requirement of sensors and hydrolytic sensors in agriculture machinery. d) 3D components and drawings to test practical implementation of agriculture machinery in the agriculture field by farmers.

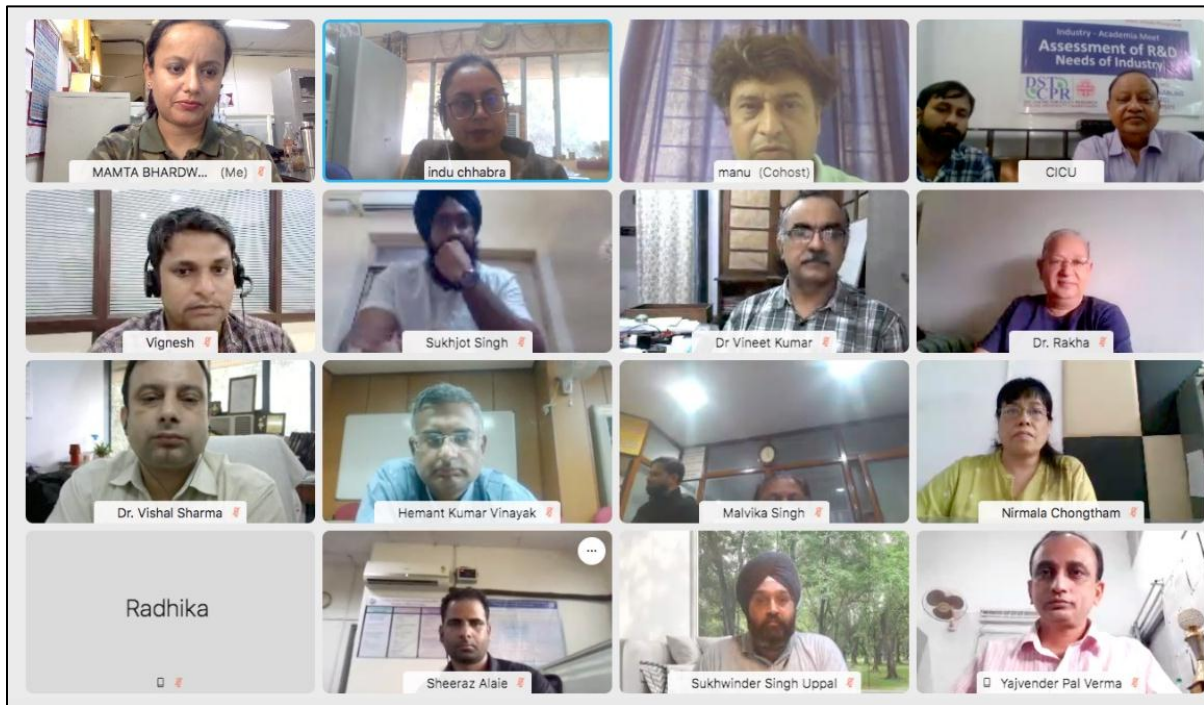
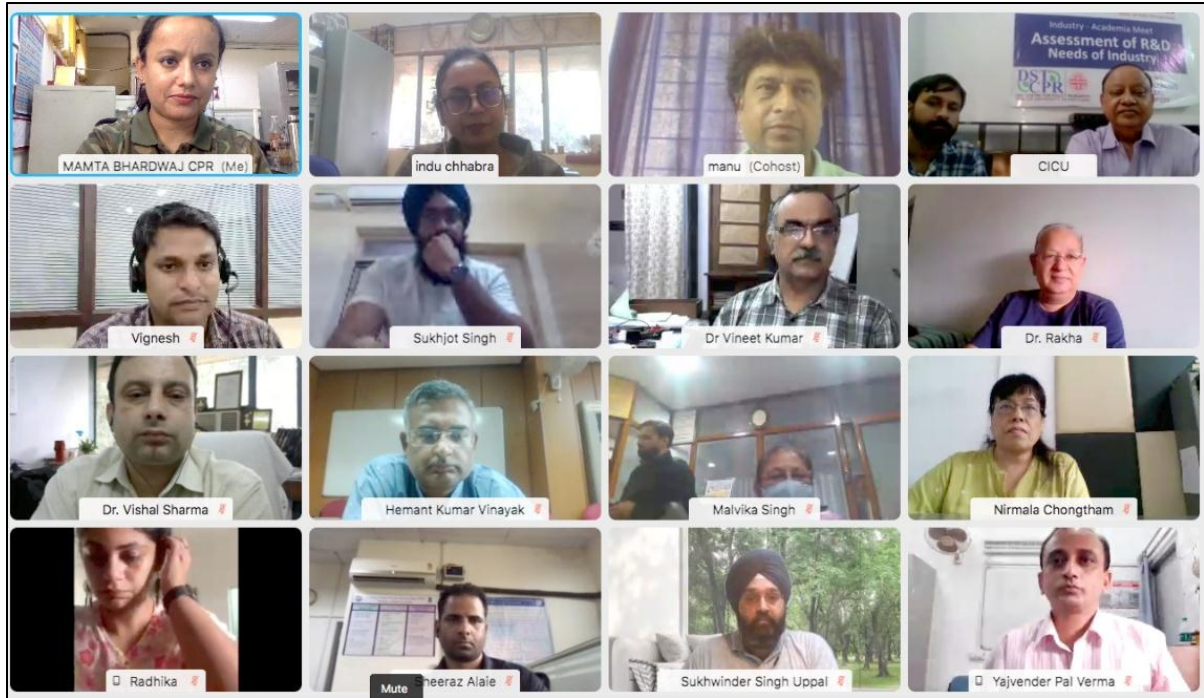
Dr. Khushboo Rakha, Asst. Prof. from IIT Ropar replied to this issue and mentioned that her team is working on cold spray coatings and have already worked with Haryana Agriculture University on this same issue. Their expertise is in powder metallurgy and surface engineering and therefore their team will be interested in collaborating with agriculture and automobile companies. She shared her email id for further communication: krakha@iitrpr.ac.in.

4. In the domain of 'Powder Metallurgy' there is no system to cover cost and no such ecosystem is created to take inputs. Example: In Glass tempering units, impetration of semiconductors in glass is required.
5. Innovations to prevent wastage of steel and process/product for smoothly cutting of it are expected.
6. The challenges of rusting issues in base malt and oil coatings required from researchers to inhibit rusting.
7. There is a need for development in cold storage channels for meat products, fruits and vegetables for agriculture growth and development.

The event ended with the note of Prof. Rakesh Tuli, U.I.E.T. Panjab University, Chandigarh. Prof. Tuli discussed about optics, polymer films, lithography, curing of inks, image patterning as one of the key issues that need to be worked upon. As per the mandate of the event, the issues addressed in the event will be addressed by the researchers from the relevant institutions having specialization in the domain. If need be, the researchers in academia can design a dedicated project on the issues and problems put forward by the industries. The event was concluded on the note that such kind of events will be conducted in the future too and collaboration between the industries and academic institutions will be promoted more and more.

Glimpses of the event:





List of issues on which, industries want interventions and support from academia are:

S. No	Industrial Issues/Problems
1	Remote energy charging system.
2	Low-cost simulation and application software.
3	Portable solar plant and vehicle charging system.
4	Low-cost treatment of effluent.
5	Effective management of constructional and municipal waste management.
6	Equipment: Combine parts, shovels, Rotavator, blades wear and breakage.
7	Increase blade life of agricultural equipment.
8	Surface protection of agricultural equipment.
9	Futuristic technology related to agricultural machinery.
10	Machine failure using FEA testing.
11	Powder metallurgy technology
12	Glass tempering unit.
13	Impregnation of semiconductors in glass.
14	Bullet proof glass.
15	Cold spray coating.
16	Innovation required to overcome the peeling process of the bars.
17	Automation of optical inspection.
18	Polymer film exposer process innovation.
19	Ink curing using UV light.
20	Laser cutting Machine with low cost.
21	John deer tractor hook rusting issue.
22	Material required with 35HRC with core harness and 55-60HRC surface Hardness required.
23	Recovery of cutting fluids used throughout the machining process.
24	Software required for improvement of human efficiency.
25	Colour removal of Effluent generated during bleaching.
26	Better usage of waste generated during processing of wheat straw.
27	Overall reduction in water consumption and removal of chemical from used water.
28	Automation in controlling wastage of food and waste food management
29	Cheap robots for automation
30	Pedal axles forging and mould and dies for pedal rubber
31	Design of jigs and fixtures for helping manpower to work efficiently and accurately
32	New type raw material usually available at higher price in Europe, heat treatment solutions like vacuum hardening.

Note: for more details please contact Technology Enabling Centre (TEC) through email manu@pu.ac.in, and agawri@pu.ac.in.