



विज्ञान एवं  
प्रौद्योगिकी मंत्रालय  
MINISTRY OF  
**SCIENCE AND  
TECHNOLOGY**



# Proceedings

## *Conference*

on

Sustaining Progress: Global Perspectives on  
Public Private Partnerships (PPP) Investments

29<sup>th</sup> November 2023

### **Organised by**

DST-Centre for policy research (CPR)  
Panjab University, Chandigarh-160014

<https://cpr.puchd.ac.in/>



## ***Table of Contents***

---

<b><i>Poster</i></b> .....	3
<b><i>Overview</i></b> .....	4
<b><i>Background</i></b> .....	5
<b><i>Objectives</i></b> .....	6
<b><i>Proceedings</i></b> .....	7
<b><i>Inaugural Session</i></b> .....	7
<b><i>Invited talks</i></b> .....	11
<b><i>Panel Discussion-I: Role of PPPs and Tech Transfer in driving the R&amp;D ecosystem of HEIs</i></b> .....	16
<b><i>Panel Discussion-II: Role of Mergers and acquisitions (M&amp;A) for the inflow of FDI in India in the R&amp;D ecosystem of public state universities</i></b> .....	21
<b><i>Take ways</i></b> .....	25
<b><i>At HEIs level</i></b> .....	25
<b><i>At National level</i></b> .....	25
<b><i>Learnings from the Conference</i></b> .....	26
<b><i>Schedule of the conference</i></b> .....	27



## Conference

on

# Sustaining Progress: Global Perspectives on Public Private Partnerships (PPP) Investments



Date

29th Nov, 2023



Venue

Golden Jubilee Hall, Panjab University, Chandigarh, Sector-14

## Patron



**Prof. Renu Vig**  
Hon'ble Vice Chancellor  
Panjab University

## Chief Guest



**Dr. Akhilesh Gupta**  
Head DST-PCPM Div.  
Secretary, SERB, New Delhi



## AGENDA

Understanding the landscape of PPP in Indian R&D ecosystem and financing



## PLENARY SESSIONS

Topics of Discussion

Session 1: Role of PPPs in driving the R&D ecosystem of HEIs

Session 2: Role of Mergers and Acquisitions (M&A) for the inflow of FDI in India  
in the R&D ecosystem of public state universities



## REGISTRATION

Interested students/researchers/faculty/industry people may register by sending their particulars via e-mail or using the link/qrcode below:

[https://docs.google.com/forms/d/e/1FAIpQLSdIT9j\\_oJsWWc8oiAGVenDRCPDs9MrhwFt3zy1NaxLLLYw3DQ/viewform?vc=0&c=0&w=1&flr=0&pli=1](https://docs.google.com/forms/d/e/1FAIpQLSdIT9j_oJsWWc8oiAGVenDRCPDs9MrhwFt3zy1NaxLLLYw3DQ/viewform?vc=0&c=0&w=1&flr=0&pli=1)



0172-2534124



dstprc2014@pu.ac.in

## Overview

---

DST-Centre for Policy Research (CPR) at Panjab University, Chandigarh hosted a Conference on “Sustaining Progress: Global Perspectives on Public-Private Partnerships (PPPs) Investments” on November 29th 2023. The event was consisted of deliberation talks by eminent speakers on Pubic Private Partnerships. The event is witnessed the presence of several distinguished guests, including directors/heads of renowned institutes, representatives from Technology Transfer Offices at HEIs, representative from United Nations Industrial Development Organization (UNIDO) as well as students from various institutions.

Prof. Yajvender Pal Verma, Registrar, Panjab University, Chandigarh graced this event. He highlighted the various initiatives to bring private sector on board to flourish the R&D culture at Panjab University, Chandigarh. He stressed on the risk sharing between the key actors i.e. academia and industry as well as nurturing the culture of entrepreneurship and startups in universities itself.

Dr. Akhilesh Gupta, Senior Adviser & Head of the PCPM at DST, GoI was the chief guest for the event. He highlighted all endeavours going on at national level where private sectors contributing 40% to the R&D ecosystem. He stressed on the need to raise contribution from private sector in R&D. He mentioned Anusandhan National Research Foundation (NRF) Bill, 2023 that can play a key actor. He informed the participants about various issues that are hurdle to state, central universities from connecting them with the industry counterpart.

Dr. Akhilesh Gupta also chaired the panel discussion on Role of PPPs and Tech Transfer in driving the R&D ecosystem of HEIs. The panel discussion led to highlight the private sector participation in commercialisation of technologies as well as India’s standing at global level.

Dr. J.K Arora, Executive Director, Punjab state council for science and technology, Chandigarh was the guest of honour. She highlighted the various initiatives of Punjab state science council taking to strengthen the R&D ecosystem in MSME of Punjab.

The role of FDI in strengthening the Science, Technology and Innovation (STI) ecosystem of India was also taken up in another panel discussion emphasizing the Role of Mergers and acquisitions (M&A) for the inflow of FDI in India in the R&D ecosystem of public state universities.

## *Background*

---

‘Make in India’ initiative -A vision of activating India 2.0 with the spirit to progress towards becoming a developed nation by 2047. This initiative requires achieving good governance, global peace and development. The development of a nation relies on equal participation from the public and private sector to with stand with government initiatives. Public sector is still far ahead in participation while private sector needs to catch upon in the trio i.e. Government, Public and Private. The equalizer in trio relies on performance analysis of existing models, mode of engagement and financial investments that can lay down the step stone for the further up-dation. This requires strong intermingling of Public and Private sector i.e. strong Public Private Partnerships (PPPs). PPPs is essential to resurrect and enhance private sector involvement in identifying interventions that are essential to meet the needs of society 5.0 with encouraging PPPs projects. As well as laying out a roadmap for systematic improvements to speed up private sector involvement to make Industry 4.0 concept more dynamic in India. This all need a significant way to increase PPPs in India's R&D ecosystem with focal points development, upgradation, and maintenance that are instrumental in completing timely delivery of necessary public services across all sectors.

To understand PPPs led interventions in India's R&D ecosystem, a meaningful platform is necessary where all the stakeholders deliberate on focal points as mentioned above where PPPs led interventions can take a lead. In line to provide such meaningful platform an initiative in the form of a Conference on “Sustaining Progress: Global Perspectives on Public-Private Partnerships (PPP) Investments” is taken by DST-Centre for policy research (CPR), Panjab University, Chandigarh with aim

*“Understanding the landscape of PPP in Indian R&D ecosystem and financing”*

## *Objectives*

---

- To disseminate information related to recent government initiatives and to make the landscape of PPPs in the country more conducive for R&D ecosystem.
- To provide a platform to the leading academic scientists, researchers, and key stakeholders to exchange and share their PPPs led experience as well as, its broader linkages with the R&D ecosystem especially at the Higher Education Institutions (HEIs) level.
- To draw impactful recommendations that could be used to make significant contributions PPPs to Science, Technology and Innovation (STI) financing environment. As well as to suggest favourable verticals where private sector can pitch on.
- To take on learnings from the present platform and work aggressively for enabling private sector participation in the sustainable development by strengthening the PPPs led R&D ecosystem.

# Proceedings

---

## Inaugural Session

---



### *Welcome Address*

**Prof. Kashmir Singh**

Coordinator

DST-Centre for Policy Research

Panjab University

**Prof. Kashmir Singh** welcomed the dignitaries: Chief guest- Dr. Akhilesh Gupta, SERB-Secretary, Head DST-PCPM-div., GoI; Prof. Yujevnderpal Verma, Registrar, Panjab University, Chandigarh; Dr. Jatinder Kaur Arora, Executive Director, Punjab State Council for Science and Technology, Chandigarh; and all the distinguished speakers, esteemed guests and participants. In his address Prof. Kashmir Singh presented the work done by DST-CPR till now in the domain of PPPs. He briefed in context to the conference, the existing PPPs model in Indian context and analysis research carried by DST-CPR, PU. He thanked all stakeholders of PPPs for their active presence on the platform under context.



### *Inaugural Address*

**Prof. Yajvender Pal Verma**

Registrar

Panjab University

**Prof. Yajvender Pal Verma** in his inaugural address emphasized the significance of PPPs in sustainable development as well as in elevating the nation's economy from the 5<sup>th</sup> to the 3<sup>rd</sup> rank at the global index. He emphasized the active involvement of PPPs in every sector and the adoption of best practices from both Public and Private sector. He highlighted that the resources, innovation, and expertise of the private sectors that can be effectively utilize to mitigate the risk-sharing factor in the public sector's led projects. He highlighted the various initiatives to bring private sector on board to flourish the R&D culture at Panjab University,



Chandigarh. He stressed on the risk sharing between the key actors i.e. academia and industry as well as nurturing the culture of entrepreneurship and startups in universities itself. He quoted the example of reduction in loss in the electrical sector due to the efficiency, accountability, and transparency brought by the collaboration with private investors.



*Guest Address*

**Dr. Jatinder Kaur Arora**

Executive Director  
Punjab State Council for Science  
and Technology

**Dr. Jatinder Kaur Arora**, graced the event as guest of honour. She highlighted the various initiatives of Punjab State Council for Science and Technology (PSCST) taking to strengthen the R&D ecosystem in MSME of Punjab. She appreciated the initiatives taken by the DST-CPR, PU to strengthen the PPPs. She emphasized the importance of supporting Technology Transfer (TT) and extensive work done by DST-CPR, PU in this context. She shown interest for such kind of study should be taken further at grassroots levels, especially in Punjab, where there are over 2 lakh MSMEs are in existence. She congratulated DST-CPR, PU for mapping the TT activities at nation level in collaboration with United Nations Industrial Development Organization (UNIDO) - Facility for Low Carbon Technology Deployment (FLCTD). She suggested to do such kind of study at MSME level and at focussed R&D centres established by different organisation such as UNIDO-FLCTD led centres in Ludhiana, Jalandhar, and Patiala.

Further, she proposed DST-CPR, PU to collaborate with these centres and to provide mentorship to all these R&D centres from the perspective of policy formulation. During her address, she mentioned the existence of 17 major industrial clusters in Punjab and suggested that DST-CPR, PU, Chandigarh should collaborate and develop vision documents for these industries. She stressed on required reform at policy-level for the growth of these centres to encourage PPPs led R&D projects. So as to bring forward real-time problems that can be solved with support from private sector. Thereby contribute to sustainable development. In this regard, she put forward the suggestion to policymakers and the academic institutes to be focused and demand-driven to facilitate partnerships with the private sector. She extended her support on the behalf of PSCST to DST-CPR, PU in the domain of IPRs, PPPs and Industry Academia Liaison.





*Chief Guest and Key-note  
Speaker*

**Dr. Akhilesh Gupta**

Head, DST-PCPM-div., GoI

&

Secretary, SERB, GoI

**Dr. Akhilesh Gupta** in his key note address highlighted all endeavours going on at national level where private sectors contributing 40% to the R&D ecosystem. He stressed on the need to raise contribution from private sector in R&D. He mentioned Anusandhan National Research Foundation (NRF) Bill, 2023 that can play a key actor. Dr. Akhilesh Gupta shared his viewpoints on underwhelming statistics regarding nations' GDP contributions to the R&D sectors. He informed that the major contribution in R&D investment in public sector are coming from government led initiatives. To improve the investment in R&D at national level, he stressed on the awareness about funding mechanism at institution level is required especially in the ecosystem of universities. Such that footfall in the R&D investment can be level up. As such, further involvement of private-sector in R&D investment could be grown by providing them with a viable business option under PPPs.

He informed the participants about various issues that are hurdle to state, central universities from connecting them with the industry counterpart. He led the audience informed about one of the most crucial aspects of a university curriculum is to recognize the significance of innovation and producing researchers along with the academic masters. For that matter, he stressed on the need to bridge the existing understanding of Technology Readiness Level (TRL) gap between the universities and industry. He mentioned that it is necessary to study and analyse the best practices of successful Public-Private Partnership (PPPs) models from other countries e.g. USA, Germany, Taiwan, South Korea that can be taken to practice in India.

He highlighted that working on innovation strategies is therefore crucial, and Innovation needs to be understood in a broader sense than just doing R&D *i.e.* as processes, methods, software, know-how, and collaboration. He informed the participants that many industries driven funded schemes have been actively started at national level by quoting the example of R&D investments in semiconductors by private sector. He brought forward the way forward for the National Research Foundation Bill, which is largely invested in by the private sector. He also highlighted that the only way forward is to work on a public private partnership model, where research and development are driven by the private sector and supported by the government. In his closing remarks, He appreciated the work of DST-CPR, PU in the domain of PPPs and bringing up successful PPPs that can be brought into practice at national level.

## Invited talks

---



### Dr. Ajay P. Srivastava

Director of Software Technology  
Parks of India (STPI)  
Mohali

Dr. Ajay P. Srivastava presented an overview of the Software Technology Parks of India (STPI) in Mohali, an autonomous society under the Ministry of Electronics and Information Technology (MeitY), Govt. of India (GoI). He mentioned the aim with which STPI has been set up with ethos to boost Software export from the country by formulation of software policies with three major target themes for STPI in Mohali such as:

- Regulatory part/ statutory part: To Take care of all export and import services.
- Facilitation part: To provide data communication services including value-added services to IT.
- Promotional part: To promote the development and export of software and software services including Information Technology (IT).

He mentioned that such STPI has footfall all across India 63 centres of which 54 centres are in Tier-II/III cities. He highlighted the infrastructure of STPI Mohali that welcome an innovator to flourish its innovation. He mentioned that STPI is the largest centre in terms of infrastructure with a 1.40 Lac. Sq. feet facility with 160 Racks, 600 seats of incubation co-working space, and 30,000 square feet of space for customized offices for start-ups. He demonstrated that STPI-Mohali is the best of all tier-II cities by presenting data with various figures in the context of activities in the city. He moved on presenting how STPI has achieved a milestone in the domain of AI that has led to establishment of a Centre of excellence called NEURON that act as a Punjab start-up incubation hub to build a strong eco-system for nurturing innovation and Startups and to create more IPs for the nation. He led the audience through the focus areas of the NEURON i.e. AI/Data Analytics, IoT & AVG in Agriculture, Healthcare, Finance, Education, and Logistics where STPI, Mohali is actively working upon. He presented that active role the STPI Mohali is playing in terms of collaboration.

He mentioned prominent industries and academia in Punjab that are enthusiastically collaborating with STPI Mohali. He also highlighted the active participation from the private sector as investment partners and knowledge partners. He emphasized upon the cycle through which a start-ups has to undergo before getting on board at STPI Mohali such that next stage work on innovation can be taken up i.e. TRL level up gradation. He highlighted the Smart Farm Grant Challenge, one of the initiative of STPI Mohali that provides funding for start-ups with focus on achieving sustainable development. Mr. Srivastava led the audience know about STPI Mohali's international tie-ups, which aims to work on the problem statements of industries and create products from them and also shared some of the success stories of the start-ups associated with STPI-NEURON *e.g.* Jiyyo.



**Dr. Dara Ajay**  
Head-Technology Transfer Office  
(IP Technology Transfer and  
Licensing)  
IIT Madras, Chennai

Dr. Dara Ajay in his talk highlighted the intermingling of Private Partnerships (PPPs) and Intellectual Property Rights (IPRs) as key policy consideration for the upliftment of R&D ecosystem at HEIs. He stressed on the fact that not only it is important for academic research to focus on publication, but also on generating Intellectual Property (IP) and commercializing it. He highlighted the importance Technology Transfer (TT) at HEIs and that a TT ecosystem should have active standing on four pillars: Government, HEIs, Incubation Centres, and Investment from Venture Capitals (VCs). He shed that light on recent accomplishment in IP ecosystem at global level. He mentioned that from the year 2019 onwards, World Intellectual Property Organisation (WIPO) a renowned international organisation have significantly put forward international policies for HEIs to tackle IP related issues at institutional level. He highlighted the IP policy initiative at national level. He mentioned the draft national IPR policy proposed in 2016 through which Modelling IP Policies at Institutional level has got much attention that aims inclusion of various aspects of IP management, protection, filing, and commercialization, particularly in the context of IP ownership. He mentioned that the draft itself can serve as a guide for creating an IPR for an organization/ institution. He stressed that while designing an IP policy at institutional level, the organization needs to understand its unique demands and challenges before drafting its own policy framework.

He shed the light on Paten drafting. He mentioned that during the drafting process, ownership and revenue generation should be the main focus to bring the clarity and transparency while deciding IP ownership. He proposed, to flourish commercialization at HEIs, the host institution can have flexible ownership of IP while the inventor can have the rights to commercialize the innovation. Dr. Dara emphasized the importance of having clear written agreements and contracts while going for collaboration specifically in Industry Academia collaborations. Such that while negotiating for IP ownership both parties should reach on a fruitful decision in stipulated time. As such innovation could be bring into use for society. He further suggested that a TT skilled experts can help in catalysing such activities to ensure a win-win situation for both parties. He added in his talk the importance of IP docketing and maintenance as well as included a discussion on the different types of licensing and revenue sharing while quoting case studies on IP ownership.



**Mr. Nitesh Kaushik**  
National Expert-Technology  
Transfer,  
UNIDO-FLCTD, New Delhi

Mr. Nitesh Kaushik presented a brief overview of United Nations Industrial Development Organization (UNIDO) that promotes industries of developing countries and economies in transition. He mentioned that in India, UNIDO has extensively cooperated with different government agencies in developing policies and institutional frameworks to support entrepreneurship development and has strong partnerships with various industrial and enterprise associations. He highlighted the setup of a project being undertaken, the project approach, technology areas for innovation, what UNIDO does and how they tackle the question of commercialization approach. He mentioned that since 2011, UNIDO, with the support of the Global Environmental Facility (GEF), has successfully implemented clean-tech innovation projects in many partner countries, including India.

In India, He mentioned that Bureau of Energy Efficiency (BEE) is the nodal agency that drives policy development and implements strategies and programmes to achieve efficient end-use of energy across the sectors of India's economy. He mentioned the UNIDO- Facility for Low Carbon Technology Deployment (FLCTD) project, an 8-year project funded by GEF and

implemented jointly by UNIDO and BEE to facilitate the deployment and scaling up of low-carbon technologies in India, to promote the use of clean and efficient energy technologies in selected sectors and thereby address technology gaps to mitigate climate change. The primary mechanism under the 'Facility' is to identify high-impact early-stage innovations with the potential for energy savings and large-scale carbon emission reductions.

He then explained the key objectives and learnings from the Facility for Low Carbon Technology Development (FLCTD) project and the general awareness about the 5 different readiness levels. He talked about the general concepts of Foreign Direct Investment (FDI) in the R&D ecosystem and its sector-wise and country-wise distribution in the country. Mr. Kaushik concluded by highlighting the case studies and key determinants for start-up and PPP in R&D FDI. He stressed on the need of thorough understanding of TRLs while bringing commercialization stage deliberation on board at different verticals of PPPs. He mentioned the TRL gaps and how one can overcome being it from Public sector/HEI or Private sector to facilitate the completion of Innovation cycle. He suggested the various aspect of investment through which private sector can pitch in to contribute towards R&D ecosystem at HEIs level. He mentioned various strategies that can be taken up to promote commercialization.



**Mr. Bhumesh Verma**  
Managing Partner of Corp Comm.  
Legal, New Delhi

Mr. Bhumesh Verma in his talk stressed upon "facilitating R&D in education". He emphasized on the importance of investing in educational R&D ecosystem. He explained how investments in education sector results in GDP growth, which in turn strengthens the economy of any country. He mentioned that in order to achieve such approach, there is a need to generate a sense of urgency and mobilize international resources towards facilitating the R&D ecosystem in India. He presented a framework for wider discussions on how a focused R&D ecosystem can act as a magnet for merger and acquisitions (M&A) and FDI that, in turn, can helps in solving some of the biggest challenges faced by India, such as Brain Drain, and can also contributes toward achieving the targets of Atman Nirbhar Bharat.

In his talk, Mr. Verma emphasized that the best way to maintain positive and lasting international relationships. He suggested that to encourage healthy and sound collaboration, modes of interlink ages such as mergers and acquisitions, technology transfer, and other forms of active positive participation should be carried out in often. He shed the light on various incentives provided to foreign investors at national level that could be beneficial towards strengthen the FDI in R&D domain at HEIs level. Mr. Verma's strongest recommendation to policymakers was to establish specific criteria for foreign direct investment in education, with a focus on better revenue models and dispute resolution processes. He emphasized that profit should not be the sole motive in the education sector.



## *Panel Discussion-I: Role of PPPs and Tech Transfer in driving the R&D ecosystem of HEIs*

---



The first panel discussion of the event was focussed on understanding the “Role of PPPs and Tech Transfer in driving the R&D ecosystem of HEIs”. The panel discussion was chaired by Dr Akhilesh Gupta. The panellist for the first panel of the event was as follows:

1. Dr Ajay P Srivastava, Director, STPI, Mohali
2. Dr. Dapinder Kaur Bakshi, Joint Director Research, Startup and IP Facilitation Division, Punjab State Council for Science and Technology, Chandigarh
3. Prof. (Retd) Dr. Rupinder Tewari, Mentor TEC, Panjab University, Chandigarh.
4. Dr Ajay Dara, Head-TTO (IP Technology Transfer and Licensing), IIT Madras
5. Dr Sukhjinder Singh, Senior Scientist & Head-Business Development and Marketing Unit, CSIR-IHBT, Palampur

This first Roundtable discussion aimed to deliberate on current and future innovation policies, and to provide participants an understanding of the concept within which the PPPs operates in the context of the R&D ecosystem of HEIs.

This session was placed under the following guiding questions by the Chair Dr. Akhilesh Gupta:

- How do we implement the PPP model for the country in the context of NRF?
- Can innovation deliver growth? In which timeframe?
- Particularly in a PPP context where there is an innovation gap in the R&D ecosystem?

## Viewpoints of the panelists:



### Dr. Ajay P. Srivastava

Director of Software Technology  
Parks of India (STPI)  
Mohali

Dr. Ajay P. Srivastava praised the excellent work of the country in IT services while also pointing out two areas of concern. Firstly, he mentioned that IT products in the country is still demands it market to flourish, and secondly, still a need is felt to incorporate manufacturing an important key to overcome TRL valley. He mentioned that STPI Mohali has been tasked with strengthening these two areas as a core of economy by providing support for around 70 billion dollars of IP export and by having the biggest incubation centre in India, covering 1.4 lakh square feet of dedicated space for centre of excellence, centre of AI, entrepreneurship, and data analysis. Dr. Srivastava invited the research community to collaborate with STPI Mohali led start-ups and industries for the funding and co-working space and also emphasized the need to focus on hardware manufacturing by building strong hold on fabrication, specifically in the field of semiconductors, to make the country self-sufficient.



**Dr. Dapinder Kaur Bakshi**

Joint Director  
Research at the Start-up and IP  
Facilitation Division  
Punjab State Council for Science  
and Technology (PSCST)

Dr. Dapinder Kaur Bakshi, emphasized upon the importance of their "Mission Innovate" initiative at PSCST. She mentioned the main objective of this initiative is to consolidate the efforts and bring together all the stakeholders on board involved in scientific and technological research, including research institutes, universities, industries, NGOs, and start-up incubators. She highlighted that academic institutions should take responsibility for initiating communication with nearby industries either by presenting their already developed technology or by identifying the needs and challenges of the industries and then developing technology. She highlighted that such kind of initiatives taken by the PSCST involves setting up translational research centres in various sectorial themes, in collaboration with different industries and MSMEs who do not have their own R&D facilities. She quoted the example in Punjab in the field of technical textiles. Additionally, she mentioned that the initiative focuses on capacity building by bringing all the MSMEs related to technical textiles on board to collaborate with academic institutes such as NIT Jalandhar, Lovely Professional University, and IIT Ropar to identify their problems and pave the way for the success of the National Technical Textile Mission (NTTM). She also suggested that the established Intellectual Property (IP) cells in Punjab focus on working with the industry partners to not only manage the IP but also to monetize and commercialize it. Currently, the PSCST is developing a platform that would allow industries and startups to collaborate and form a mutually beneficial relationship.



**Prof. (Retd) Dr. Rupinder  
Tewari**

Mentor  
Technology Enabling Centre  
Panjab University

Prof. (Retd) Dr. Rupinder Tewari, highlighted the need to bring the innovation policy at the state universities level. Some of the main findings he reported are as follows:

- State institutions are called upon to be more focused, relook, and replicate the existing 21 S&T council's models to open new markets and new technologies, and public procurement in support of innovation.
- Faculty at the universities level should be more aware of policies related to innovation, start-ups, and patent filing. The quality of patents should be prioritized over quantity.
- Technology Enabling Centres (TEC) established by the DST, GoI can efficiently interlink industries and academia and be a game-changer.
- Work should be done using a push and pull model, which takes into account the needs and demands of industries and creates an industry-driven R&D ecosystem.

Professor Tiwari recommended that centres should be established to evaluate the Technology Readiness Levels (TRL) of academic institutes and support their partnership with industries. He also suggested that the government should provide sabbatical leaves to academic professionals with full benefits and incentives to enable them for short-term work in industries at national or international levels. He strongly recommended the germination scheme for PPP as adopted by countries like Taiwan where 70 % of the academia is connected to the industries. He also emphasized that academicians should go to the industries, physically convince them, and build the trust of transferring the research into their profitable business.



**Dr. Dara Ajay**

Head-Technology Transfer Office  
(IP Technology Transfer and  
Licensing)  
IIT Madras, Chennai

Dr. Dara Ajay began with a positive note by commending the government's efforts to strengthen PPPs in the country. He mentioned some bottlenecks that can be easily taken care of with following recommendations from his side:

1. IP Ownership: He recommended that industries and inventors should both be recognized as patent owners and share ownership rights.
2. He emphasized on formulation of the state-level policy to offer incentives to the inventors similar to those in national institutes.
3. He talked about the rapid growth and dynamism observed in the innovation cycle system. The government has established S&T parks and technology hubs to enhance the start-up ecosystem; however, they must keep up with the pace of innovation and generate awareness regarding IP among the faculty and universities members.
4. He suggested establishing a consultancy office in the public state universities and hiring experienced people that can grab and engage the industries to fund the academic projects so that to have “Good Practices and Learnings: linking business, research, and higher education”.
5. Additionally, he advised being adaptable to already-reformed policies while discussing with the industry to build the sound partnership. One should prioritize the industries' demands to first construct the trust bridge.
6. The R&D ecosystem around the university administration system should be staffed with qualified experts who are capable of handling any PPP and IP-related problems.
7. Technology transfer is not only limited to the product. Don't always focus on revenue generation; raising the TRL level can also be considered as an outcome of a successful tech transfer.





### Dr. Sukhjinder Singh

Head  
Business Development and  
Marketing Unit  
CSIR-IHBT, Palampur

Dr. Sukhjinder Singh, cited the two successfully running missions by Council of scientific and industrial research (CSIR) in response to panel discussion I i.e. **Aroma Mission** that raises farmers' incomes by connecting them with industries and **Floriculture mission** that focuses on commercial floral crops and cultivation of flower crops for the breeding of honey bees. He discussed the start-up initiatives that are implemented by industry and MSMEs' suggestions. He recommended that to better nurture ideas, it is necessary to establish a connection between R&D and financial institutions, as well as start-ups and MSMEs.

## *Panel Discussion-II: Role of Mergers and acquisitions (M&A) for the inflow of FDI in India in the R&D ecosystem of public state universities*



The Second Roundtable discussion was aimed to role of Mergers and acquisitions (M&A) for the inflow of FDI in India in the R&D ecosystem of public state universities. The deliberation in Panel discussion II focused upon the current and future Scenario of the inflow of FDI in India in the R&D ecosystem of public state universities, and to provide participants with an understanding of the concept within which the PPPs operates in the context of the FDI in R&D ecosystem of public state universities.

This session was chaired by Dr. Rupender Tiwari. The panellist for the first panel of the event was as follows:

1. Mr. Bhumesh Verma, Managing Partner of Corp Comm LegalNew Delhi
2. Dr Dharam Singh, Principal Scientist, CSIR-IHBT Palampur
3. Dr. Arun Kumar, Scientist, CSIR-IHBT, Palampur

## Viewpoints of the panelists:



**Dr. Dharam Singh**  
Principal Scientist  
CSIR-IHBT, Palampur

Dr. Dharam Singh, in response to the question that how to attract FDI in industries and research institutes? He suggested that there is a need to identify ones' niche area. It is recommended by Dr. Dharam Singh that there is need of formation of the strategy to do good science that requires creation of world-class infrastructure. He stressed upon research collaboration with laboratories in foreign. Such that foreign-exchange program should be encouraged.





**Dr. Arun Kumar**  
Scientist  
CSIR-IHBT, Palampur

Dr. Arun Kumar, emphasized upon the strong need of FDI for the sustainable growth of the R&D ecosystem. In response to state universities' standing to uplift the R&D, He suggested that each department of the state universities should have a good number of NRIs' led collaborations such that inflow of FDI in India in the R&D ecosystem at public state universities level could be uplifted.



**Mr. Bhumesh Verma**  
Managing Partner of Corp Comm.  
Legal, New Delhi

Mr. Bhumesh Verma brought forward the clear understanding of FDI in R&D context as well as how India's standing in increasing FDI could be nurture to strengthen the R&D ecosystem. He deliberated through worth mentioning following points:

- In terms of comparing with China's economy, he provide some context about India's economic history. In 1991, India opened up its economy and became the largest emerging economy in the world in terms of GDP. This led to India attracting Foreign Direct Investment (FDI) from every Fortune 500 company in the world.
- He emphasized upon that more often it possible to convince foreign investors in investing in R&D in a large market like India that can lead to multiple positive effects on the global level. Thereby bring easiness to conduct research and development at a much lower cost. The only need is to have confidence in capabilities and market themselves better to bring forward meaningful prospective by FDI investors.
- Either through mergers and acquisitions or by other means, one should open doors wider to foreign direct investment and develop a collaborative approach.

- The current approach need good evaluations and flexible safe exits that can be proofed as the most effective way to overcome the challenges facing our country. Perhaps a more adaptive and dynamic approach is needed to address the ever-changing landscape of business and society.

## *Take ways*

---

### *At HEIs level*

---

1. Need to strengthen university ecosystems, especially state universities compared to national institutes, to increase private-sector alliances by offering them a viable business option.
2. To bridge the existing Technology Readiness Level (TRL) gap in universities, it is necessary to study and implement successful Public-Private Partnership models from other countries e.g. USA, Germany, Taiwan, South Korea, etc.
3. Academic institutions should take responsibility for initiating communication with nearby industries either by presenting their technology or by identifying the needs and challenges of the industries and then developing technology.
4. Establishing a consultancy office in the public state universities and hiring experienced people that can grab and engage the industries to fund the academic projects so that to have “Good Practices and Learnings: linking business, research, and higher education”.

### *At National level*

---

1. To work on a public-private partnership model, where research and development are driven by the industries and supported by the government
2. Work should be done using a push and pull model, which considers the needs and demands of industries and creates an industry-driven R&D ecosystem.
3. State institutions are called upon to be more focused, relook, and replicate the existing 21 S&T council models to open new markets and new technologies, and public procurement in support of innovation.
4. To strengthen and expand the role of intermediaries to stabilize the R&D ecosystem in PPP.
5. To create centres of excellence at small places for industries and institute direct linkage.
6. Need to generate a sense of urgency and mobilize international resources towards facilitating the R&D ecosystem in India.

## *Learnings from the Conference*

---

The deliberations at the event were sparked by real-time opinions provided by the stakeholders are mentioned in the following points:

- Experts are required in problem-solving techniques rather than being mired in a never-ending cycle of catching up, and appropriate policies ought to be developed accordingly.
- To strengthen the commercialization there is a need to expand the role of intermediaries to stabilize the R&D ecosystem in PPPs.
- The government should establish centers of excellence for enterprises in small locations and establish direct connectivity between HEIs and industries.
- For HEIs, it is better to create centers of excellence at small places for industries and institute direct linkage.
- Researchers should be encouraged to have a stake in the outcome while creating and processing the product as well as while accessing the number game. One should have more trust in the inventors rather than the funders.
- There is a need to explore resources other than government funds to achieve the goal of society 5.0. Setting the right priorities for funding at the right time is crucial for the Govt. system. One need to shift from being mere recipients to becoming investors.
- It is high time to start involving the private sector in R&D activities at HEIs level that may leads to greater efficiency as private sector has more flexible procurement and decision-making procedures and therefore, it can speed up implementation efforts.
- Implementation of projects under Public Private Partnerships (PPPs) has advantages curbing no cost overrun (price escalation) that lead to less burden on the Government side.

## 1. Opening of Conference

*Chief Guest and the Keynote speaker:* Dr. Akhilesh Gupta, Head DST-PCPM-div. & Secretary, SERB, GoI.

Dr. Jatinder Kaur Arora, Executive Director, Punjab State Council for Science and Technology, Chandigarh

Prof. Yajvenderpal Verma, Registrar, Panjab University, Chandigarh

Prof. Kashmir Singh, Coordinator, DST-CPR, Panjab University (PU)

## 2. Welcome speech

Prof. Kashmir Singh, Coordinator, DST-CPR, Panjab University (PU)

## 3. Introductory Remarks

Prof. Yajvenderpal Verma, Registrar, Panjab University, Chandigarh

## 4. Introductory Address

Dr. Jatinder Kaur Arora, Executive Director, Punjab State Council for Science and Technology, ChandigarhS

## 5. Key-note address

Dr. Akhilesh Gupta, Head DST-PCPM-div. & Secretary, SERB, GoI

## 6. Presentation on Activities at DST-CPR Panjab University in the area of PPP

Prof. Kashmir Singh, Coordinator, DST-CPR, Panjab University (PU)

## 7. Panel Discussion-I: Role of PPPs and Tech Transfer in driving the R&D ecosystem of HEIs

**Chair:** Dr. Akhilesh Gupta, Head DST-PCPM-div. & Secretary, SERB, GoI

**Moderator:** Er. Mamta Bhardwaj Chief Operating Officer (COO), STPI- NEURON

**Panelist:**

1. Dr. Ajay P Srivastava, Director, STPI, Mohali
2. Dr. Dapinder Kaur Bakshi, Joint Director Research, Startup and IP Facilitation Division, Punjab State Council for Science and Technology, Chandigarh
3. Prof. (Retd) Dr. Rupinder Tewari, Mentor TEC, Panjab University, Chandigarh.
4. Dr Ajay Dara, Head-TTO (IP Technology Transfer and Licensing), IIT Madras

5. Dr Sukhjinder Singh, Senior Scientist & Head-Business Development and Marketing Unit, CSIR-IHBT, Palampur

## 8. Invited talks

**Lecture 1:** Dr Ajay P Srivastava, Director, STPI, Mohali

**Lecture 2:** Dr Ajay Dara, Head-TTO (IP Technology Transfer and Licensing, IIT Madras, Chennai

**Lecture-3:** Mr. Nitesh Kaushik, National Expert, Technology Transfer, UNIDO, New Delhi

**Lecture-4:** Mr. Bhumes Verma, Managing Partner, Corp Comm Legal, New Delhi

## 9. Panel Discussion-II: Role of Mergers and acquisitions (M&A) for the inflow of FDI in India in the R&D ecosystem of public state universities

**Chair:** Dr. Rupender Tiwari, Mentor TEC, Panjab University, Chandigarh

**Moderator:** Dr. Deepak Kapoor, Senior Scientist, PSCST, Chandigarh

**Panelist:** 1. Mr. Bhumes Verma, Managing Partner of Corp Comm Legal, NewDelhi

2. Dr Dharam Singh, Principal Scientist, CSIR-IHBT, Palampur

3. Dr. Arun Kumar, Scientist, CSIR-IHBT, Palampur