DST-CENTRE FOR POLICY RESEARCH
PANJAB UNIVERSITY CHANDIGARH

Activity Booklet 2022-23

DST-Centre for Policy Research
Panjab University, Chandigarh

Northern Region Science, Technology & Innovation (STI) Policy Advisory

Evidence-based Science, Technology & Innovation Policy Research

Promoting Alliances with Ministries, Departments, Industryies & S&T Councils

Capacity Building in STI and Intellectual Property Rights

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Prof. Renu Vig
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MESSAGE

The establishment of the Centres for Policy Research (CPR) in eminent higher education institutions by the Department of Science and Technology (DST), Government of India (GoI), was one of the much-required initiatives in today's time. It represented the vision that a robust policy system is a crucial aspect and has a significant effect on the governing system of a country. I am aware that the DST-CPR at Panjab University, Chandigarh, is one of the three centres, which was established in the year 2014 and has since then been working enormously for the promotion of Industry-Academia (I-A) interactions, Intellectual Property (IP) and public-private partnership ecosystem in India. The Centre is involved in various activities, especially in presenting evidence-based recommendations to enhance the I-A ecosystem at national and regional levels.

The Centre, in the past eight years, has drawn evidence-based recommendations submitted to the Government of India for further deliberations. I applaud the Centre for doing these crucial studies and contributing to the mission of national importance. I am also aware that the Centre is working with DST, GoI towards formulating the new Science, Technology and Innovation Policy (STIP), 2020. I congratulate the centre for becoming part of the national office to provide guidance support for the satellite centres for policy research in the northern region and become a nodal coordinating point for the northern states/UTs of India. My best wishes to the centre and good luck for future endeavours and fulfilling the new mandates of the centre successfull.

(Prof. Renu Vig)

Dr. Akhilesh Gupta
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MESSAGE

Science, Technology and Innovation (STI) are considered to be the drivers of the country's socio-economic growth. To strengthen the country's STI ecosystem, it is imperative to put in place a robust science policy ecosystem. The directive policy framework will establish a ground for effective STI governance to achieve India's aspiration to evolve as an innovation-backed country. The establishment of Centres for Policy Research (CPRs) across the country is a step taken in the direction of inculcating evidence-based science policy formulation and suggesting policy interventions to boost the STI ecosystem of the country. For the past eight years, the CPR at Panjab University, Chandigarh, has been working with a mandate to strengthen the Industry-Academia R&D ecosystem in the country. It gives me immense pleasure to state that CPR has contributed significantly to provide evidence-backed policy recommendations for improving STI-based Public-Private Partnerships (PPPs), incentivising the private sector's R&D and intellectual property ecosystem.

It is envisioned that the CPRs enhance the STI policy ecosystem at the institute, regional and national levels by building capacity in science policy and providing facilitative support to States and UTs to develop STI policies. The Department of Science and Technology (DST), Ministry of Science and Technology, Government of India are creating 'Satellite CPRs' across the country, which will work in tandem with the existing CPRs to provide a formal science policy advisory and advocacy at local, regional and national levels. I wish all the best to DST-CPR at PU, Chd., to emerge as a nodal centre for science policy in the northern region and introduce capacity-building initiatives to strengthen the STI policy domain in the country.

(Dr. Akhilesh Gupta)

Prof. Kashmir Singh
Coordinator, DST-Centre for Policy Research
& IPR Chair Professor, Panjab University, Chandigarh

PREFACE

Science, Technology and Innovation (STI) are the three pillars of national socio-economic development and cater for the source of ideas for innovative technologies and foster access to knowledge. The role of science in making India Self-Reliant is determinant. The same has been addressed in the upcoming STI Policy of the Department of Science and Technology (DST), Govt. of India.

I am proud to state that DST-Centre for Policy Research (CPR) at Panjab University (PU), Chandigarh, is emerging as a prominent DST's think tank for catering the capacity development activities in Public-Private Partnership (PPP), Intellectual Property (IP), Industry-Academia (I-A) collaborations. At DST-CPR, experiential learning is always the focus of the capacity development activities as it creates strong interlinking with immersive learning that helps to cater for PPP, IP, and I-A at the PAN India level. Since 2014, DST-CPR at PU have stood distinctively in developing a new country-specific model for promoting Public-Private Partnerships for R&D, identifying policy gaps for stimulating private sector investment in R&D and suggesting changes in the policy environment. It is at the forefront of adopting evidence-based approaches for identifying and promoting areas for the generation of intellectual properties and technology commercialisation. The centre has developed collaborations with various international agencies, government (State & Central) bodies, local industries, regional councils, academia and R&D institutes in the past years to fulfil its vision to extend the impact of S&T research by looking at the multitude of interrelationships between S&T research and policy.

This **'Activity Booklet 2022–23'** presents the activities and endeavors undertaken by the Centre in the preceding year. Studies undertaken within the scope of objectives have been bolstered through a series of webinars, workshops, case studies and one-on-one interactions with the field experts. In the upcoming tenure, DST has mandated the centre to act as a nodal point for science policy research and S&T advisory for the northern states of India and to be established satellite centres in other counterparts of Panjab University. It will play a key role in Centre-State interconnectedness, catering to the states and UTs like Jammu and Kashmir, Ladakh, Haryana, Punjab, Chandigarh, Himachal Pradesh and Uttarakhand. The centre aims to evolve transitioning to a **'Self-Sustainable Training and Research Centre'** for capacity building in STI and providing guiding support for satellite centres for policy research in India. Hereafter, the Centre wishes to undertake studies that will help to address policy-related gaps and provide recommendations to enhance the S&T ecosystem in India. We are aligning with the national mission of 'Atmanirbhar Bharat' and commit to working meticulously on the goals assigned to the CPR by the DST, Government of India.

Prof. Kashmir Singh

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DST-CENTRE FOR POLICY RESEARCH

As a part of Science, Research and Innovation System for High Technology led path for India (SRISHTI) – Centres for Policy Research (CPR) institutes were established by the Department of Science and Technology (DST), Government of India (GoI), in January 2014 in various higher education institutions in India. Currently, three centres are functional as DST-Centre for policy Research at **Panjab University, Chandigarh; Indian Institute of Technology (IIT) – Delhi** and **Indian Institute of Sciences (IISc.) Bangalore**.

To give an impetus to develop strong Industry-Academia (I-A) interactions, and promote the Intellectual Property (IP) ecosystem in India, the Ministry of Science and Technology, New Delhi (Funding Agency), has set up a DST-Centre for Policy Research (CPR) at Panjab University, Chandigarh. The Centre conducts research on Science, Technology and Innovation (STI) and IP policies. It holds meetings, seminars, and brainstorming sessions with academia and private sectors to work on the following specific objectives:

1. *Development of a new country-specific model for promoting Public-Private Partnerships (PPP) for R&D.*
2. *Identify areas of policy gaps for stimulation of private sector investment in R&D and suggest changes in the policy environment.*
3. *Adopt evidence-based approaches for identifying and promoting areas for the generation of intellectual properties.*

To fulfil these objectives, the Centre conducts evidence-based studies, which have been published in the form of books, research papers, reports and review articles. The recommendations drawn out from the studies and brainstorming sessions conducted by the Centre have been submitted to DST (GoI), which would subsequently become part of the new Science, Technology, and Innovation (STI) Policy Draft, 2020.

Number of Research Article Publications (in S&T Policies and IP): >20	Number of Books Publication: 4 Book under process: 1 (with Springer)	Research visits: National: >40; International: ~10
Number of Reports Submitted to DST, GoI: >40 (DST + PU + Others)	Webinars and Workshops conducted: >45	Booklets + Brochures Released: 5
Collaborations Developed: ~ 30	Training Programs Provided: 2	Talks delivered by the coordinator and scientific staff: ~40

Now DST-CPR looks forward to extending the areas of the study and play a crucial role in policy guiding and assistance in the northern region of India. The CPR proposes to work as **'Regional Nodal Centre'** which will work autonomously under the supervision of DST, New Delhi with support from Panjab University'. Discussions regarding administrative and governance set up of such autonomous nodal centres are in the process with the University administration. DST-CPR at PU, Chd. further wishes to conduct the research and evidence-based studies in the themes to enhance PPP, I-A collaborations and IP and technology transfer ecosystem in India. As the staff of the CPR is well versed with the S&T and IP domain, the awareness and capacity building programmes has been initiated. To achieve above mentioned mandates, CPR will closely work with the concerned departments and organizations with in the university as well as states/UTs and at PAN India level. DST-CPR wishes to outspread the scope of the work by proposing the following new objectives and outcomes to the DST, Govt. of India, New Delhi.

S. No.	Objectives	Outcomes
1.	To evolve as a 'Regional Nodal Centre' for science, technology and innovation policy assistance and facilitation to the States and UTs in Northern India.	1. Assist States and UT's of northern region of India for STI policy research and related policy formulations. 2. Assist and hand hold DST's upcoming CPRs for policy research and Satellite centres for undertaking STI policy research.
2.	To undertake policy research and provide evidence-based policy formulation support to the Department of Science and Technology (DST), GoI in science, technology and innovation.	1. Conducting research for the development of a new country specific model for the promotion of PPP for R&D. 2. Identify areas of policy gaps for stimulation of private sector investment in R&D and suggest changes in policy environment. 3. Conducting the research on evidence-based approaches for identifying and promoting areas for generation of intellectual properties and technology transfer.
3.	To undertake capacity building and training in the areas of science, technology and innovation policy ecosystem.	1. Undertake formal academic (certificate and diploma) and training programmes in STI Policy 2. **Domain specific academic programme in:** a) Public Private Partnerships for STI b) University-Industry Liasoning c) Intellectual Property Rights and technology transfer. 3. Workshops/ seminars/ webinars/ policy discussions/policy dialogues, etc.

PUBLICATIONS

1. Mamta Bhardwaj and Saurabh Arora, Innovators in India need to gear up for filing more patents. CURRENT SCIENCE, VOL. 124, NO. 2, 25 January 2023 147
2. Bhardwaj M., Malhotra R. (2022). A Course on Science Diplomacy by AAAS-TWAS 2022.
3. Bhardwaj M., Sandhu A. (2022). Significance and Factors Hampering Patents Commercialization in India. Journal of Intellectual Property Rights. Vol 27, July 2022, pp 258-265. DOI:10.56042/jipr.27i4.65608.
4. Singh, N., Trikha, R., Sharma, G., Dayama, A.S., Pathak, S., Choudhury, M.C. (2022). Innovation Ecosystem for Research, Innovation and Entrepreneurship in India: Analysis of the Role of Actors. Report published at DST-Centre for Policy Research at IISc Bangalore Policy Brief.

IN COMMUNICATION

1. Radhika Trikha. Science, Technology and Innovation (STI) in Achieving Sustainable Development Goals. IORA - NAM S&T Centre Joint Workshop on the "Role of Science, Technology and Innovation (STI) in Achieving Sustainable Development Goals – 2030", 24-25 May 2022.
2. Mamta Bhardwaj. A case study on the role of higher educational institutions in achieving SDG-9. IORA - NAM S&T Centre Joint Workshop on the "Role of Science, Technology and Innovation (STI) in Achieving Sustainable Development Goals – 2030"24-25 May 2022.
3. Sukhdeep Kaur. Indian's stand on inclusive and resilient growth towards climate change. 2nd Edition of Global Conference on Geology and Earth Science" (GEOLOGY 2023).
4. Sukhdeep Kaur. Sustainable Development in Education and Public private partnership. 9thAnnual International Conference on Sustainable Development (ICSD). 2023.
5. Kaur S., Singh K. (2023). Corporate Social Responsibility and Disaster Risk Management. International Conference on "Industrial Road Map of Uttarakhand: Vision 2025".
6. Sukhdeep Kaur. Scientific Conduct in Research: Intellectual Honesty, Integrity, and Scientific Misconduct. Author for an academic course by IGNOU, New Delhi. 2023 (Book Chapter).

MEMBERSHIP OF SOCIETIES IN 2022

Societies	Member
International Journal of Research & Innovation in Applied Science (IJRIAS) As Reviewer	Dr. Sukhdeep Kaur
Member of International Association & Engineers (IAENG)	Dr. Sukhdeep Kaur
India Universities and Institutions Network for Disaster Risk Reduction (IUIN-DRR)	Er. Mamta Bhardwaj
Member of Institution of Electronics and Telecommunication Engineers	Dr. Sukhdeep Kaur
Emerald Publishing Group, UK As Reviewer	Er. Mamta Bhardwaj

ADVISORY COMMITTEE OF DST-CPR AT PU, CHD.

S. No.	Name	Designation
1.	**Prof. Renu Vig**	Vice Chancellor Panjab University, Chandigarh
2.	**Dr. Akhilesh Gupta**	Senior Adviser/Scientist-H Head, Policy Coordination & Programme Management Secretary, Science & Engineering Research Board Department of Science & Technology (DST), Govt. of India, New Delhi
		State Government
3.	**Sh. Rahul Tewari**	Secretary, Department of Science, Technology & Environment, Punjab
4.	**Dr. Jatinder Kaur Arora**	Executive Director Punjab State Council for Science & Technology, Chandigarh
5.	**Sh. Lalit Jain**	Director, Environment, Science & Technology Govt. of Himachal Pradesh
6.	**Dr. Ashok Khemka**	Principal Secretary Science and Technology Department, Govt. of Haryana
7.	**Dr. Chander Shekhar Khare**	Director Department of Science & Technology, Govt. of Haryana
8.	**Prof. Durgesh Pant**	Director General Uttarakhand State Council for Science and Technology
9.	**Sh. Umang Narulla**	Advisor to LG Administration of Union Territory of Ladakh
10.	**Sh. Nasir Ahmad Shah**	Additional Director, J&K Science, Technology & Innovation Council Department of Science & Technology, Jammu & Kashmir
11	**Shri Debendra Dalai**	Secretary & Director Science & Technology, Administration of Union Territory of Chandigarh
		Central Government
12	**Dr. Hiro Bhojwani**	Former Head Research Planning & Business Development, CSIR, New Delhi
13	**Dr. Ranjana Aggarwal**	Director, CSIR-National Institute of Science Communication and Policy Research, New Delhi
14	**Dr. Yashawant Dev Panwar**	Head & Scientist- E Patent Facilitating Centre, Technology Information, Forecasting and Assessment Council, New Delhi
15	**Dr. K. S. Kardam**	Fmr. Senior Joint Controller of Patents & Designs. Patent Office Delhi, Dwarka-14, New Delhi
		Industry
16	**Prof. Anuradda Ganesh**	Director, Research & Innovation at Cummins Technologies (I) ltd, Mumbai
17	**Mr Jibak Dasgupta**	Head, Innovation, Entrepreneurship and IPR activities, CII, New Delhi
		Academia
18	**Prof. Rakesh Basant**	Professor of Economics,IIM, Ahmedabad
19	**Shri Avinash Kumar**	Adjunct Professor, Sharda University, Greater Noida Fmr. Addl Director (IPR), DRDO (HQ), Ministry of Defence, Govt. of India
20	**Prof. Rupinder Tewari**	Former & First Coordinator, DST-Centre for Policy Research Mentor, Technology Enabling Centre, Panjab University, Chandigarh
21	**Prof. Kashmir Singh**	Coordinator, DST-Centre for Policy Research, Panjab University, Chandigarh

OBJECTIVE WISE ACTIVITIES OF DST-CPR AT PU, CHD.

Objective 1: Development of New Country Specific Model for Promotion of Public Private Partnership (PPP) for R&D.

India is among the top five nations of the world in the parameter of research publications. However, its global ranking in other S&T-related indicators (Investment in R&D as % of GDP; public sector to private sector participation for R&D; Intellectual Property Rights; University/Industry Research Collaboration) is a cause of concern. Furthermore, India aspires to be amongst the innovation leaders in the domain of the Global Innovation Index (GII). In order to improve its ranking in the above-mentioned parameters, India has to fill the gaps existing in its innovation ecosystem. This can be achieved through the synergistic functioning of the public and private sectors along with increased R&D investments under exclusive Public-Private Partnership (PPP) mode. The same has also been reiterated in the 'Science, Technology and Innovation' Policy, 2013 and the latest India's 5th National Science, Technology and Innovation Policy 2020 draft. To cater to these following activities have been undertaken:

Activity 1: Mapping of Public-Private Partnership (PPP) initiatives/programmes for Research and Development (R&D) in India

To understand the advent of PPPs for R&D in the country, it is necessary to map the PPP initiatives and programmes carried out. The activity mapped the PPP initiatives and programmes and categorized them into following categories.

Public Private Partnerships for R&D in India		
Type of PPP	**Brief Details**	**Key Example**
Institutionalized PPPs for R&D	Infrastructural and institution formation under PPP mode to promote joint and collaborative STI.	Indian Institutes of Information Technology (IIITs) established under PPP mode with Centre Government, State Government and Private Sector participation
Collaborative R&D programmes	Short to medium terms programmes and schemes to support private and public sector for pursuing collaborative R&D, technology development and technology commercialization.	Fund for Industrial Research Engagement (FIRE) and PM Fellowship programme sponsored by Scientific and Engineering Research Board (SERB) and Industry partners
Mission Oriented PPPs for R&D	PPP programmes and initiatives to support PPP to pursue some thematic or mission-oriented R&D and technology development. This also covers collaborative STI in strategic domains such as space and defence research, etc.	National Biopharma Mission initiated by Biotechnology Industry Research Assistance Council (BIRAC), Department of Biotechnology (DBT), Government of India established as Industry-Academia platform.
Network Oriented PPPs for R&D	The STI cluster approaches rope in all the key stakeholders of the STI ecosystem to explore opportunities for performing collaborative STI and sharing common pool of resources.	Formulation of City Based Science and Technology Clusters established by Office of Principal Scientific Adviser (PSA) that are promoting PPPs and collaborative S&T in the select regions

Activity 2: Legislative Framework for enabling PPPs for R&D

To bring required emphasis on PPP for R&D, the legilsative and admninistrative push has to be put in place in India. Various innovation backed countries have demonstrated the positive impact and enhancement of PPP for research and innovation through the legislative and administrative push through laws/Acts/policies/guidelines.

Initiatives that were undertaken in India to have a legislative framework for PPP for R&D

- In 2008, India came up with a proposal to formulate a legislative framework for promoting PPPs in the field of STI through a draft of The National Innovation Act (Not approved)
- In 2008, the Protection and Utilization of Public Funded Intellectual Property Bill was also introduced in the Parliament (Not approved)
- In 2011, the Government of India made an initiative to draft a National Policy on Public Private Partnerships to facilitate PPPs for improving the socio-economic infrastructure in the country (http://www.mcrhrdi.gov.in/87fc/policies/Draftnationalpppppolicy.pdf) (Not Implemented)

Legislative initiatives undertaken in innovation backed countries for PPP for R&D

USA

- Stevenson-Wydler Technology Innovation Act and the University and Small Business Patent Procedure Act (the Bayh-Dole Act), 1980
- Federal Technology Transfer Act of 1986 (FTTA)

Switzerland

- Federal Act on the Promotion of Research and Innovation (RIPA)

Denmark

- Act on Inventions at Public Research Institutions and the Act on Technology Transfer

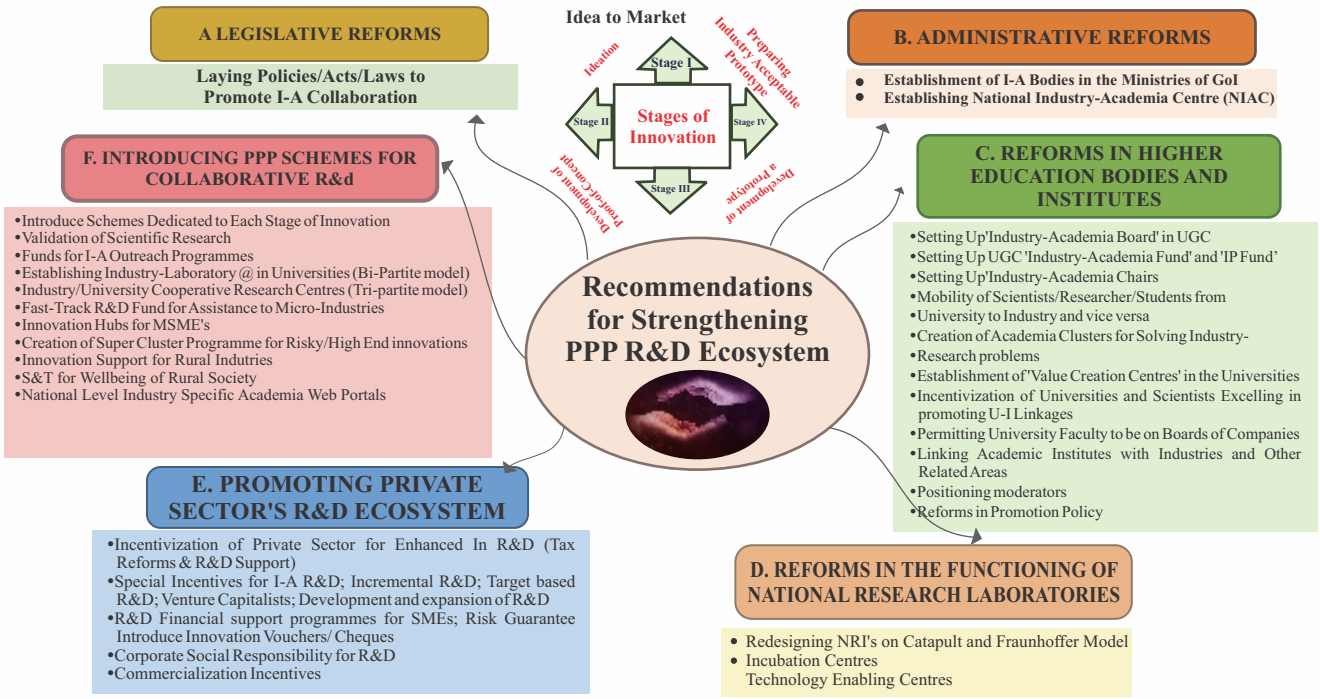
S. Korea

- Cooperative Research and Development Promotion Act, 1994
- Act on the Support of Industrial Technology Research Cooperatives, 1994
- Technology Transfer and Commercialization Promotion Act, 2006

Japan

- Act on the Promotion of Technology Transfer from Universities to Private Business Operators, 1998
- Industrial Technology Enhancement Act, 2000

Reforms Required for Enchancing Public Private Partnership Development in India



Activity 3: Public private partnership for Facilitating Sustainable Development in Education

India has taken a leap in Global Innovation Index (GII) from 81st place in 2015 to 40th spot in 2022. Public-private partnerships have played a crucial role in increasing the Indian ranking in GII and played a vital role in spurring economic growth in India by immensely contributing to "Aatma Nirbhar Bharat" initiative. With PPP, public organization has strengthened their Science, Technology and Innovation (STI) ecosystem thereby innovation by catalysing the Indian cooperative domain through mobilization of the risk transfer factor from public domain to private sector. Thereby issues of massive investments and the chances of failure being reduced in public private collaborative projects. Hence sharing mechanism of profitable resources has mushroomed. In addition, new indigenous technologies such as in the domain of Automotive & Logistics, Agrofood, Electronics System Design & Manufacturing (ESDM), Healthcare, etc. have come (Fig. 1) as a result of collaborative PPP project. Such that the success rate of Indian R&D has gained an utmost importance at world level. Private finance led initiative in public sector helped in developing scientific advancement and innovation for benefit of the society. PPP led reinforcement of information and communication technologies (ICT) have further proved the quality of life of general public. Therefore, PPP not only acting as leader in economic growth, it can facilitate the sustainable development in education to build resilient and inclusive societies. In present context, PPP importance to facilitate sustainable development in education is highlighted. Emphasis on the need to embed private sector contribution within the curriculum itself in an interdisciplinary and holistic manner is highlighted. The Study presents an overview of opportunities available within the social, environmental and scientific domains of the Indian education system where PPP can take a lead such that the growth of education for sustainable development can be done at a faster pace.

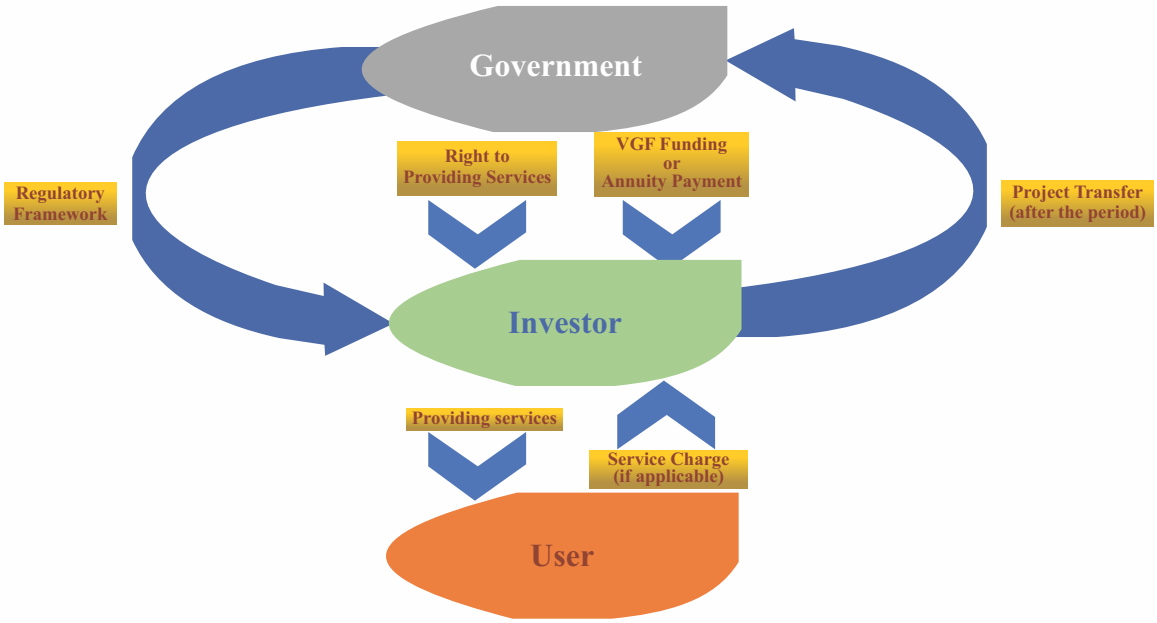


Fig.: Service Delivery and Operation for delivering the quality education service through PPP.

Key recommendations to accelerate sustainable development in education through PPP

Acceleration towards sustainable development in education through PPP demand inclusive and equitable quality that help to encourage lifelong learning opportunities for all. The linkage should work towards enhancing facilities as well as services in education by provide vocational education and training to support lifelong literacy. It should fill the perceived gap, by reviewing sustainability-oriented PPP studies, to better understand the relationship between PPP and sustainability. An uninterrupted training and education need funding support that can be catered through PPP. Also, inclusiveness of infrastructure plans is the need of the hour which can also catered through PPP. To bring out the autonomy in domain of education, innovation is the need so that no one should left behind. Innovation led technology could play a catalytic especially for special education domain. PPP can help to bring the community at the globe to come forward to work for the child in need. As such can help in risk management through implementation of various model under PPP in education sectors. All this could be possible by two-way resource sharing under PPP to accelerate education in terms of capacity building, technology sharing as well as by catering each other's need.

Objective 2: Identify areas of policy gaps for stimulation of private sector investment in R&D and suggest changes in policy environment.

Activity 1: Corporate Social Responsibility and Disaster Risk Management

Corporate Social Responsibility (CSR) infuses in every aspect of the functioning of the corporate sector. As part of corporate social responsibility, industries are encouraged to conduct business responsibly. CSR helps the private sector to contribute to the economic health as well as creating safe working conditions to attract and retain a quality workforce. Therefore, with CSR in place, management of risk can be done more efficiently with minimization of the negative impact of economic downpour on the environment and its resources. As per United Nations' Global Assessment Report (GAR 2022) on Disaster Risk Reduction 2022 (GAR2022), India has lost US$ 3.2 billion in 2021 from flooding only. Under CSR, the private sector can extend its cooperation to the government to check the economic loss as well as reduction in people's vulnerabilities to natural disasters. By this, CSR can efficiently help in strengthening the public private partnerships by motivating the private sectors to contribute in disaster risk management (DRM) (Fig. 1) at various verticals of government programs. Private firms of all sizes make a wide variety of financial and non-financial contributions in the aftermath of disasters. Thereby, CSR can lead in supporting and building the knowledge, capacity and skills of the community in comprehensive risk-based disaster management activities ranging from prevention, mitigation and preparedness to response and recovery. It can offer human and financial resources and can also be a precious source of technical know-how, as for example in the case of identification and research on technical solutions to prepare for and respond to natural disasters. In present activity, interlinks between CSR and DRM are put forward in the context of India. The study highlights private contributions in DRM as a part of Public Private Partnership (PPP) in DRM. It also details various programs that promote private sector contribution in disaster risk management such as ARISE India and Coalition for Disaster Resilient Infrastructure (CDRI) in Indian context.

Fig. 1 : Way forward to CSR and Disaster Management

Source: https://ndmindia.mha.gov.in/images/public-awareness/DRM%20&%20The%20role%20of%20Corporate%20Sector.pdf

Key Initiative/ organizations contributing to DRM under CSR in India	Details
Coalition for Disaster Resilient Infrastructure (CDRI) A multi-stakeholder global partnership of national governments, UN agencies and programmes, multilateral development banks and financing mechanisms, the private sector, and knowledge institutions. The CDRI Secretariat is based in New Delhi, India.	**Aim:** Aims to promote the resilience of new and existing infrastructure systems to climate and disaster risks in support of sustainable development. **Members:** 22 countries and 7 organisations. **Thematic Areas:** ● **Technical Support and Capacity-building:** This includes disaster response and recovery support; innovation, institutional and community capacity-building assistance; and standards and certification. ● **Research and Knowledge Management:** This includes collaborative research; global flagship reports; and a global database of infrastructure and sector resilience. ● **Advocacy and Partnerships:** This includes global events and initiatives; marketplace of knowledge financing and implementation agencies; and dissemination of knowledge products.
Confederation of Indian Industry (CII) CII has sought to involve Indian industry in the implementation of the different schemes under the National Disaster Management Plan. The rehabilitation projects are being undertaken and implemented by CII Foundation with support from the corporate sector.	**Aim:** Capacitate different segments of the urban and rural populations to combat and manage major disasters. **Members:** Allthemembers of CII **Thematic Areas:** ● Awareness Generation ● Training ● Mock Drills ● Development of on-site and off-site Disaster Management Plans ● Sensitization programmes ● Preparation of inventory of resources. CII contributes towards **India Disaster Resource Network (IDRN)** a nation-wide electronic inventory of resources that enlists equipment and human resources, collated from districts, states and national level line departments and agencies.
ARISE India ARISE is a key vehicle to leverage the private sector's expertise and to ensure that business itself is fully aware of hidden risks and acts to reduce the risks it faces. Showcasing good practices is a powerful tool in this process. Federation of Indian Chambers of Commerce and Industry (FICCI) is the representative from India.	**Aim:** ARISE Mission is to create risk resilient societies by energizing the private sector in collaboration with the public sector and other stake-holders, to achieve the outcome and goal of the Sendai Framework. **Members:** 400 members committed to strengthening their communities across all five of the UNDRR regions. **Thematic Areas:** ● To Build the Capacity of Private Sector in India by reducing risks on perceived disasters, in collaboration with Govt of India. ● Spread general awareness on disaster risk management in the private sector in the neighboring SAARC and some ASEAN countries.

KEY RECOMMENDATIONS

Corporate Social Responsibility is no longer a one-off intervention but an agent of change and development in DRM. It encourages the private sector as a part of their CSR to conduct business responsibly so as to reduce the risk transfer. With CSR in place, management of risk can be done more efficiently with minimization of the negative impact of economic downpour on the environment and its resources. By this, CSR can efficiently help in strengthen the public private partnership by motivating the private sectors to contribute in DRM at various verticals of government programs. The key recommendations to bring forward CSR led DRM initiatives at forefront need

- Expanding capacity-building activities on disaster management with focus on capacity-building of district disaster management authorities by private players.
- Build partnershipsAccountability mechanisms with focus on alternative modes of financing.
- Collaboration and collective efforts for raising awareness in the public domain.

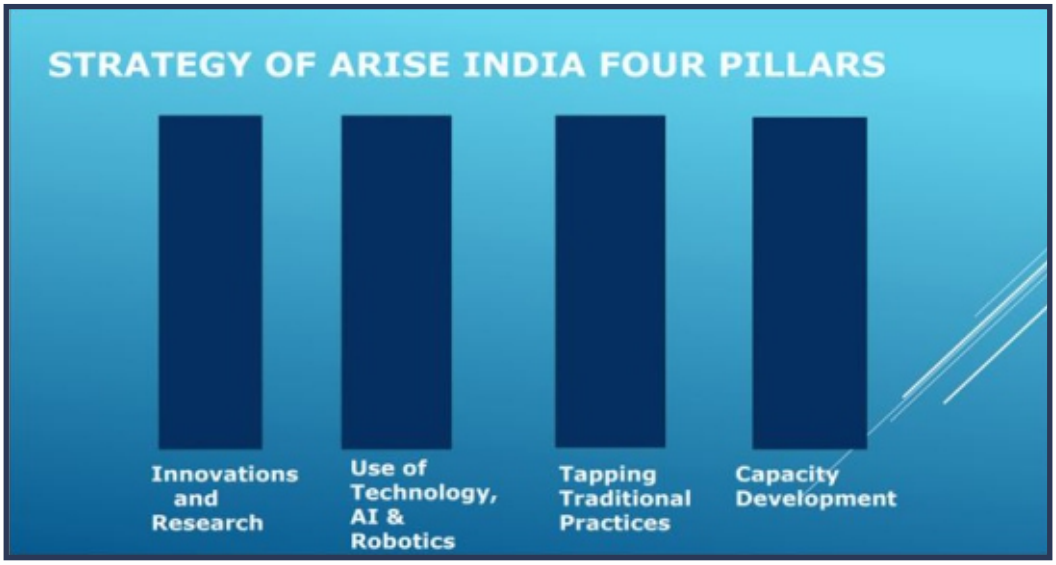


Fig.2 : Key thematic areas to promote CSR in Disaster Risk Management

Source: https://www.unisdr.org/conference/2019/globalplatform/programme/preparatory-days/assets/pdf/5ce500889d917ARISE_India_-_Brig_Khanna.pdf

Activity 2: Rural women empowerment in disaster risk management through STI interventions

Rural women participation in Disaster Risk Management (DRM) through Science, Technology and Innovation (STI) interventions is featured in this context. Women who have proven as global leaders in STI; their participation in DRM is still tobe looked upon. A case study is presented where rural women did capacity building in STI and took measures in the domain of water crisis management through STI interventions. Water scarcity and water portability issues at daily house hold level were the focal points where women of the village pitched upon. The case study highlights the initiatives such as capacity building in STI domain as well as implementation of technology to overcome water scarcity and portability issue in their daily household. It was conducted at Nandgarh, a Village located near Banuar town in Rajpura Tehsil in Patiala District of Punjab. Outreach activities were done to understand how rural women have contributed towards the upliftment of their daily household life by working on water crisis issue. Activities were conducted by means of on-site interviews for a period of 03 months from September, 2021 to December, 2021. Women of the village Nandgarh in the age group 25-35 took the initiative to educate other women of the village about water crisis in their native language. As many as 22 such women were interviewed for this study.

Verticals of the Study	Observations
Key barriers	Following key barrier/ boundaries were found that still need to be broken for catalyzing women empowerment in rural areas. 1. Dominance in decision making by the male community in the village. 2. Limitation on taking up women centric issues in context of water portability and prominently sanitation in their village. 3. Lower association of women in village community activities. 4. Lesser contribution of rural women as DRM managers than that of family managers.
Key recommendations	1. Providing basic education of a rural woman in science is necessity to deal with any type of disasters. 2. Capacity development for raising awareness should be in native language of the concerned area. 3. Consultation role of community should be encouraged in government decision making in DRM.
Practical implications	1. Encouragement for contributing towards SDG 6 i.e. ensuring access to water and sanitation for all. 2. Successive improvement in water crisis management by rural women. 3. Development in the path of ground water recharge by the village community. 4. Upliftment of daily house hold living of the rural areas through STI interventions.
Social implications	1. Women empowerment in rural areas through STI interventions in DRM. 2. Exploration of STI role in upliftment of rural society. 3. Transformation of rural women from family manager to disaster risk managers by doing capacity building in STI. 4. Impartment of knowledge about women sanitation at village level. 5. Rural women contribution in village community.

Objective 3: Adopt evidence-based approaches for identifying and promoting areas for the generation of intellectual properties.

In the era of the knowledge economy, the role of IPRs become crucial in economic development. The most critical step taken in this regard was in 1970 when the Government of India enacted 'The Patent Act, 1970'. Further to fortify the dedicated system for inventions, subsequent amendments were also effected in 1999, 2002, and 2005. In 1994 India signed the Trade-Related Aspects of Intellectual Property Rights (TRIPS) Agreement. On January 1, 2005 India became fully TRIPS-compliant by bringing into effect its most crucial requirement of enforcing product patents in the fields of food, chemical substances, and pharmaceuticals. Before the TRIPS Agreement, patents were exclusively governed by national jurisdiction, subject to local laws framed according to the national development goals and local needs. Another defining moment in the patenting came in 1998 when India became a signatory to the Patent Cooperation Treaty (PCT). As a result, inventors can now protect their inventions internationally through a single application.

The main concern is patent filing by the residents of India as only 37% of patents filed in India are by Indian residents rest are by foreign applicants. Outside countries are filing maximum patents in India through national phases and conventions. The abysmal patent filing regime in India is attributed to many factors like policy gaps at the national or institutional level, lack of support at the government level, lack of awareness among inventors/researchers, lack of funding & institutional support, fewer collaborations between university-industry and the absence of dedicated IPR/technology transfer offices, etc. The most crucial is the lack of awareness and those who are aware, are hesitant in patent filing as the process of patent filing is very time consuming and costly too for an individual. So, the first intervention should be streamlining the time and process of filing patents and focusing more on awareness of IP filing and grant issues. The issues mentioned above need to be addressed at the central, state, and institutional level to encourage researchers for IP protection and its commercialization.

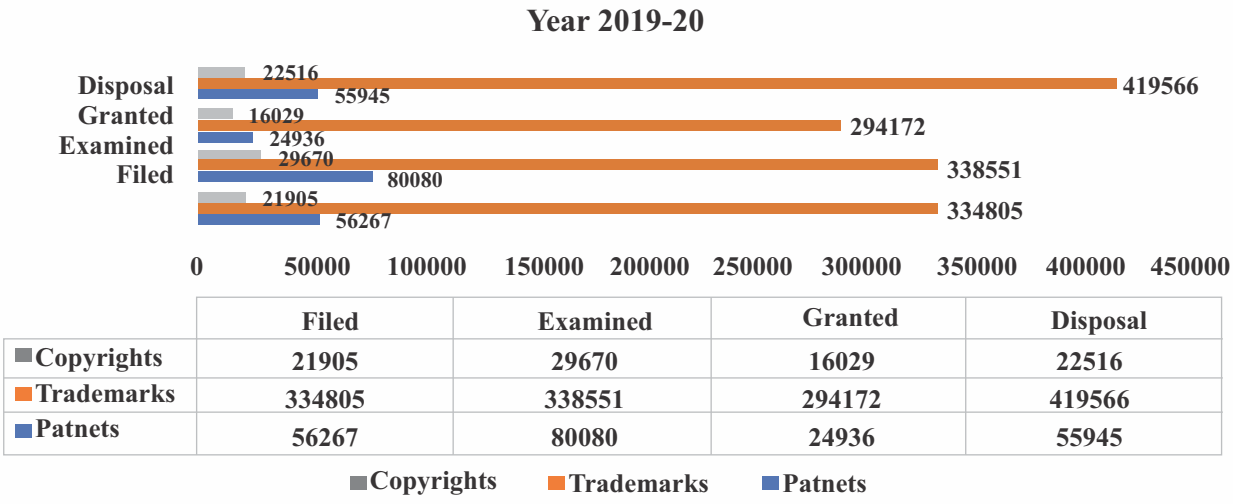


Fig. 1: Patents, Trademarks and Copyright profile of India in 2020

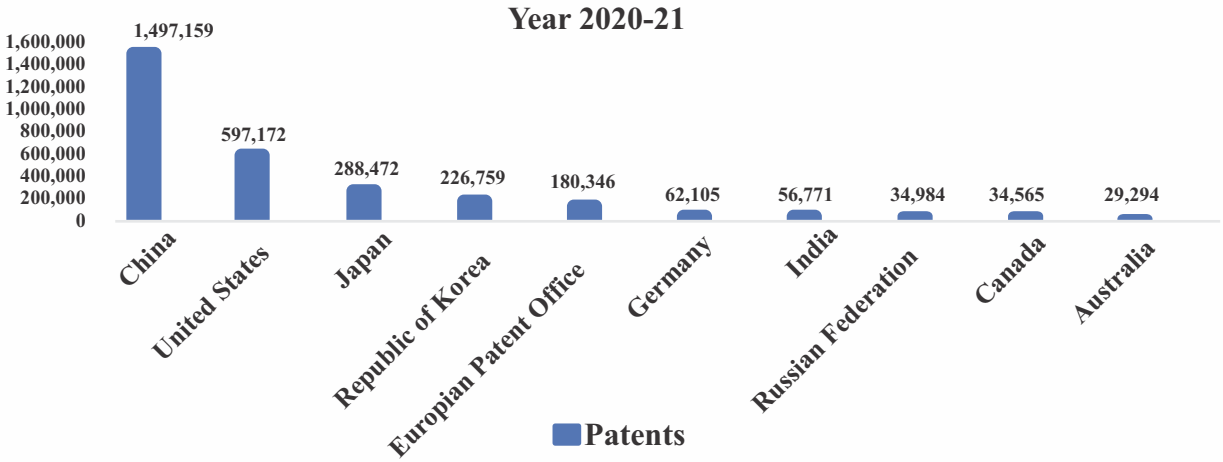


Fig. 2: Top 10 countries in patents

Activity 1. A case study on the role of higher educational institutions in achieving Sustainable Development Goals (SDG) - 9

The 21st century is considered to be the era of knowledge and innovation in which patents and research publications occupy prominent positions as the global indicators for ranking of the world economies. Research articles reflect academic excellence, whereas patents indicate the ability to translate fundamental research into a product/technology for a commercial product for societal benefits. By global standards, India's performance in publishing research articles is impressive and has been ranked among the top 5 countries in the indicator of research publications but ranks poorly in the parameter of Intellectual Property Rights, having 61 global ranking. The Indian education system is very vast and has the potential to enhance domestic technologies development and technology commercialization goals and ultimately address the issues pertaining to SDG-9.The study has been commissioned on top 15 Indian universities comprising of central universities (5), state universities (5), and private universities (5) to analyse their translational research ecosystem based on research articles' publications, patents granted and commercialized.

Research articles reflect academic excellence, whereas patents indicate the ability to translate fundamental research into a product/technology for a commercial product for societal benefits. Fifteen universities have been taken from a national ranking basis namely National Institutional Ranking Framework (NIRF), 2021 by the Ministry of Education, Government of India. This framework outlines a broad methodology to rank institutions across the country based on various parameters. The ministry ranks top 200 universities, which is the amalgamation of state universities, central universities, deemed universities and private universities, etc.

METHODOLOGY: The steps involved in the study are depicted below:

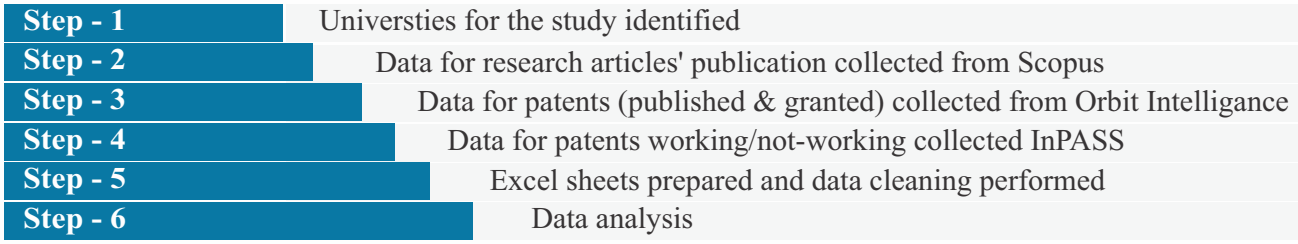


Fig. 1: Flow chart

Table 1: Universities considered for the study from top 100 NIRF ranking, 2021

S. No.	Name of the Institution	Type of the Institution	Funding Source	NIRF Ranking
1	Jawaharlal Nehru University, New Delhi	Central University	Indian Central Govt.	9
2	Banaras Hindu University, Varanasi, Uttar Pradesh	Central University	Indian Central Govt.	10
3	Jamia Millia Islamia, New Delhi	Central University	Indian Central Govt.	13
4	University of Hyderabad, Hyderabad, Telangana	Central University	Indian Central Govt.	17
5	Aligarh Muslim University, Aligarh, Uttar Pradesh	Central University	Indian Central Govt.	18
6	Indian Institute of Science, Bengaluru, Karnataka	State University	State Govt of Karnataka	2
7	Calcutta University, Kolkata, West Bengal	State University	State Govt of West Bengal	11
8	Jadavpur University, Kolkata, West Bengal	State University	State Govt of West Bengal	14
9	Savitribai Phule Pune University, Pune, Maharashtra	State University	State Govt of Maharashtra	20
10	Bharathiar University, Coimbatore, Tamil Nadu	State University	State Govt of Tamil Nadu	22
11	Amrita Vishwa Vidyapeetham, Coimbatore, Tamil Nadu	Private University	Self-Financed	12
12	Manipal Academy of Higher Education, Manipal, Karnataka	Private University	Self-Financed	15
13	Vellore Institute of Technology, Vellore, Tamil Nadu	Private University	Self-Financed	21
14	Birla Institute of Technology & Science, Pilani, Rajasthan	Private University	Self-Financed	29
15	Amity University, Gautam Budh Nagar, Uttar Pradesh	Private University	Self-Financed	43

PERIOD FOR THE STUDY

For this study, data for research articles' publications and patents (published & granted) was collected for the period from January 2010 to December 2021. The period of 11 years is considered enough to analyse trends on parameters of articles' publications and patents (published and granted) of the universities.

Table 2: Statistical information pertaining to parameters considered for the study

S. No.	Name of the Institution	Article Publications 2010-2021	Patents Published Jan 2010-Dec. 2021	Patents Granted Jan 2010-Dec. 2021	Patents Commercialized Jan 2010-Dec. 2021
1.	Jawaharlal Nehru University, New Delhi	17,475	48	11	0
2.	Banaras Hindu University, Varanasi, Uttar Pradesh	15,632	207	13	0
3.	Jamia Millia Islamia, New Delhi	5,453	12	5	0
4.	University of Hyderabad, Hyderabad, Telangana	10,041	30	8	1
5.	Aligarh Muslim University, Aligarh, Uttar Pradesh	9,719	7	5	0
6.	Indian Institute of Science, Bengaluru, Karnataka	69,208	625	246	6
7.	Calcutta University, Kolkata, West Bengal	10,516	84	21	0
8.	Jadavpur University, Kolkata, West Bengal	13,489	19	8	0
9.	Savitribai Phule Pune University, Pune, Maharashtra	3,575	18	2	0
10.	Bharathiar University, Coimbatore, Tamil Nadu	6,892	16	3	0
11.	Amrita Vishwa Vidyapeetham, Coimbatore, Tamil Nadu	4,386	117	44	0
12.	Manipal Academy of Higher Education, Manipal, Karnataka	5,971	89	25	1
13.	Vellore Institute of Technology, Vellore, Namil Nadu	7,517	158	9	0
14.	Birla Institute of Technology & Science, Pilani, Rajasthan	5,707	93	0	0
15.	Amity University, Gautam Budh Nagar, Uttar Pradesh	8,726	1088	80	0

Table 3: Statistical information on Form-27, working/not-working patents of the universities					
S. No.	**Name of the Institution**	**Granted Patents Jan 2010-Dec. 2021**	**Form-27 Submitted**	**Working Patents**	**Not-Working Patents**
1.	Jawaharlal Nehru University, New Delhi	11	2	0	2
2.	Banaras Hindu University, Varanasi, Uttar Pradesh	13	1	0	1
3.	Jamia Millia Islamia, New Delhi	5	0	NA	NA*
4.	University of Hyderabad, Hyderabad, Telangana	8	3	1	2
5.	Aligarh Muslim University, Aligarh, Utter Pradesh	5	0	NA	NA
6.	Indian Institute of Science, Bengaluru, Karnataka	246	101	6	95
7.	Calcutta University, Kolkata, West Bengal	21	2	0	2
8.	Jadavpur University, Kolkata, West Bengal	8	0	NA	NA
9.	Savitribai Phule Pune University, Pune, Maharashtra	2	0	NA	NA
10.	Bharathiar University, Coimbatore, Tamil Nadu	3	0	NA	NA
11.	Amrita Vishwa Vidyapeetham, Coimbatore, Tamil Nadu	44	1	0	1
12.	Manipal Academy of Higher Education, Manipal, Karnataka	25	3	1	2
13.	Vellore Institute of Technology, Vellore, Namil Nadu	9	3	0	3
14.	Birla Institute of Technology & Science, Pilani, Rajasthan	0	5	0	5
15.	Amity University, Gautam Budh Nagar, Uttar Pradesh	80	28	0	28

*NA: As no Form-27 for the granted patents were submitted, so working/Not-working details couldn't be retrieved.

Table 4: Availability of IP infrastructure and ecosystem in the universities					
S. No.	Name of the Institution	I-A Cell	Tech. Transfer/ Entrepreneurship Cell	IP Cell/ Centre	IP Policy/ Guidelines
1.	Jawaharlal Nehru University, New Delhi	no	no	yes	yes
2.	Banaras Hindu University, Varanasi, Uttar Pradesh	no	yes	yes	yes
3.	Jamia Millia Islamia, New Delhi	no	yes	no	yes
4.	University of Hyderabad, Hyderabad, Telangana	no	no	yes	yes
5.	Aligarh Muslim University, Aligarh, Uttar Pradesh	no	no	yes	yes
6.	Indian Institute of Science, Bengaluru, Karnataka	yes	yes	yes	yes
7.	Calcutta University, Kolkata, West Bengal	no	no	no	no
8.	Jadavpur University, Kolkata, West Bengal	no	yes	yes	yes
9.	Savitribai Phule Pune University, Pune, Maharashtra	no	yes	yes	yes
10.	Bharathiar University, Coimbatore, Tamil Nadu	no	yes	yes	yes
11.	Amrita Vishwa Vidyapeetham, Coimbatore, Tamil Nadu	yes	yes	yes	no
12.	Manipal Academy of Higher Education, Manipal, Karnataka	yes	yes	yes	yes
13.	Vellore Institute of Technology, Vellore, Namil Nadu	no	yes	yes	yes
14.	Birla Institute of Technology & Science, Pilani, Rajasthan	no	yes	yes	yes
15.	Amity University, Gautam Budh Nagar, Uttar Pradesh	no	yes	yes	yes

Note: Details mentioned in table 4 have been extracted from the official website of the respective universities.

RESEARCH ARTICLES AND PATENTS PUBLISHED (2010-2021): The number of research articles' publications by the universities (table 2). Below is the graphical representation of the research articles' publications in various domains against patents applications published for the period January 2010 to December 2021. On the left side of the figure (Pie Chart, Fig.1 - Fig.15), it depicts the percentage of the documents published by the respective institutions (top 10 domains only) whereas, on the right-hand side the pie-chart, it depicts percentage of patent families by technology domain (top 10) of the respective institutions. The screen shots have been captured from the Scopus website for research articles' publication [6]. This information for the patents has been extracted from Orbit Intelligence [7] for the time period of January 2010 to December 2021. We can see in the pie charts that their research article publication trends are different as compared to the patents published. For instance, in the domain of Pharmaceuticals the Jawaharlal Nehru University (JNU), New Delhi is filing a good percentage of patents applications whereas the research publication in the same does not lies even in the top 10 domains in which JNU is publishing research article. The research publication profile and patents technology domain for the universities taken for the study are not going hand in hand. This shows the disparity in the universities or institutes' inclination towards research publications instead of patents applications filing.

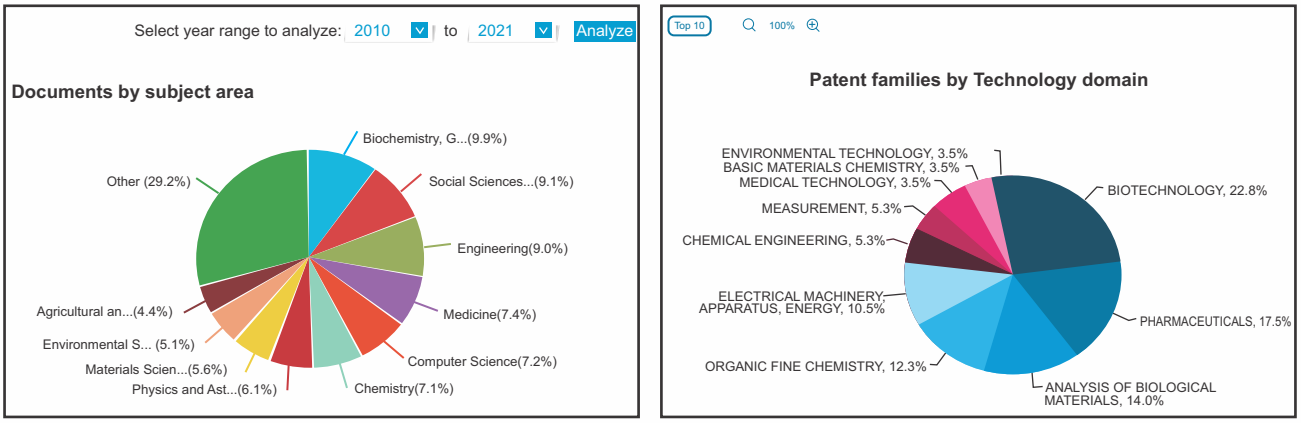


Fig.1: Domains of Research articles publications and patents application of Jawaharlal Nehru University, New Delhi

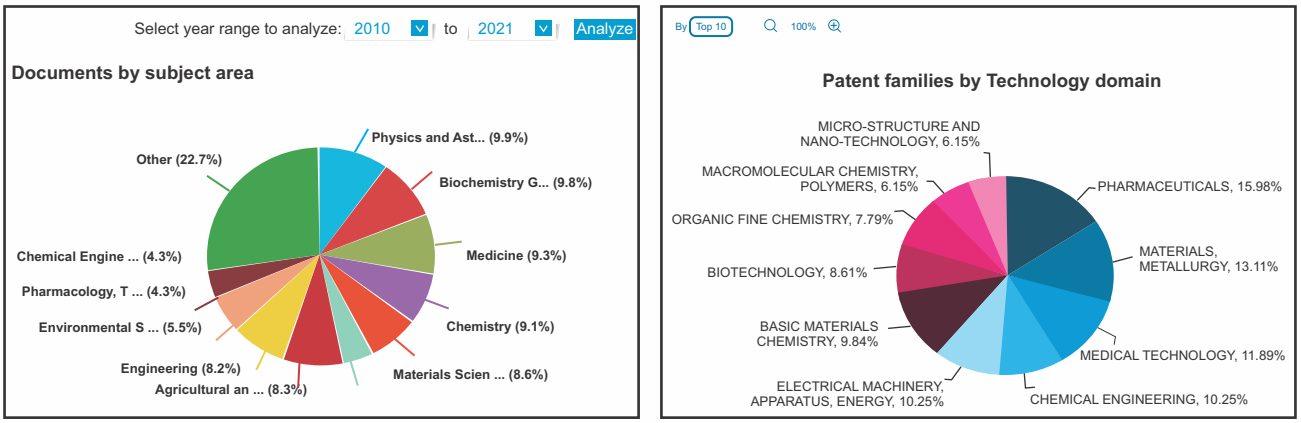


Fig.2: Domains of Research articles publications and patents application of Banaras Hindu University, Varanasi, Uttar Pradesh

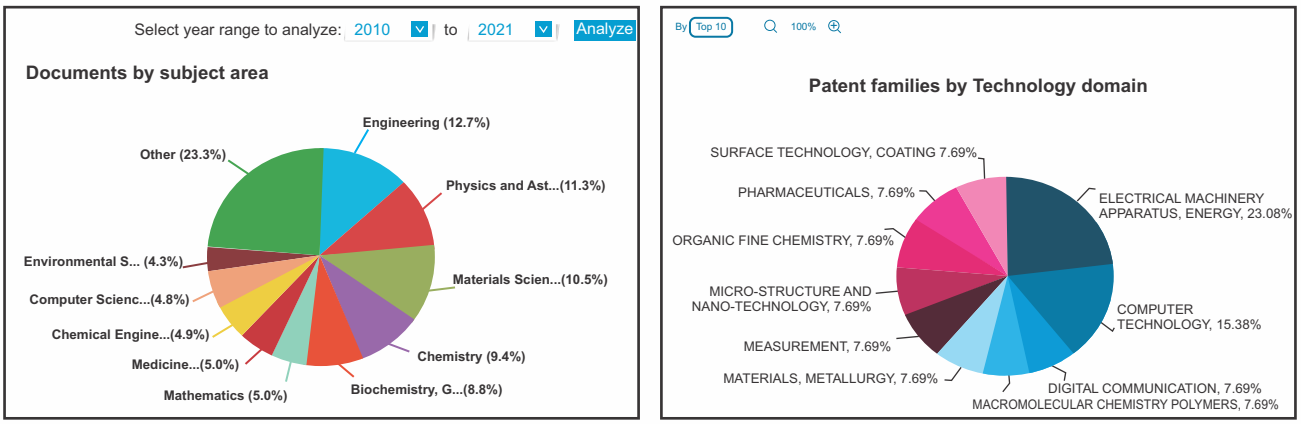
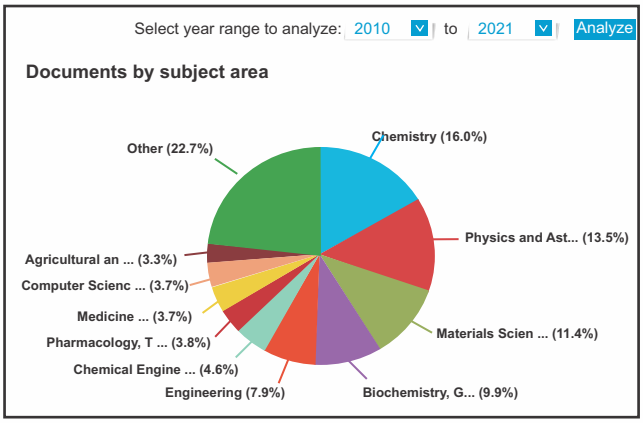


Fig.3: Domains of Research articles publications and patents application of Jamia Millia Islamia, New Delhi



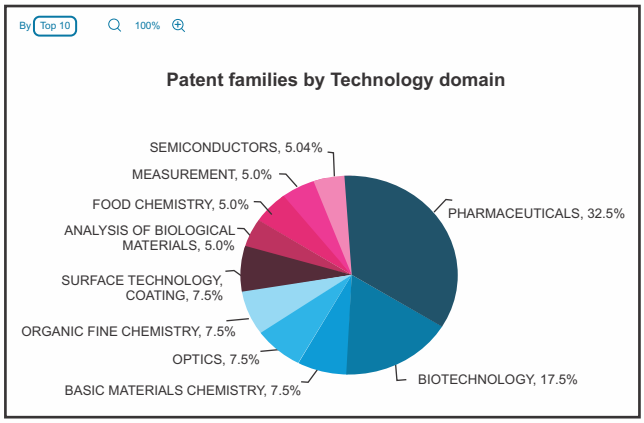
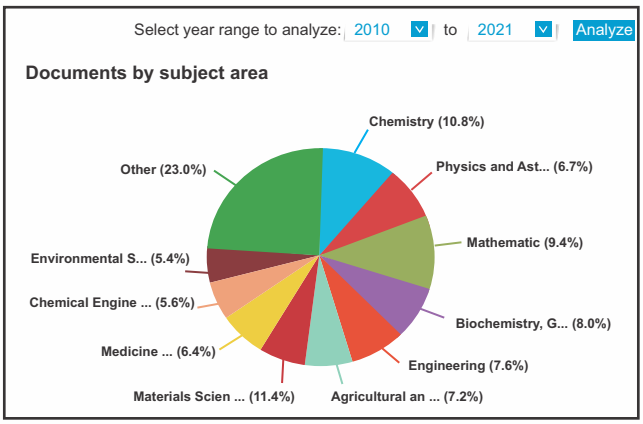


Fig.4: Domains of Research articles publications and patents application of University of Hyderabad, Hyderabad, Telangana



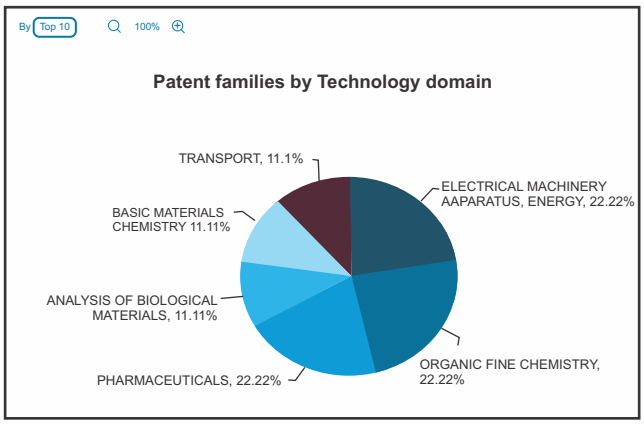
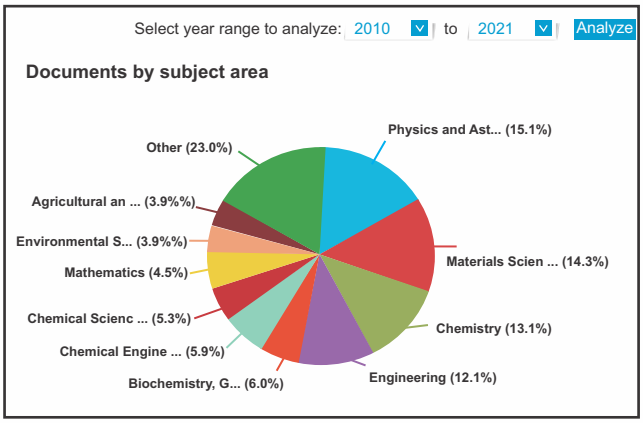


Fig.5: Domains of Research articles publications and patents application of Aligarh Muslim University, Aligarh, Uttar Pradesh



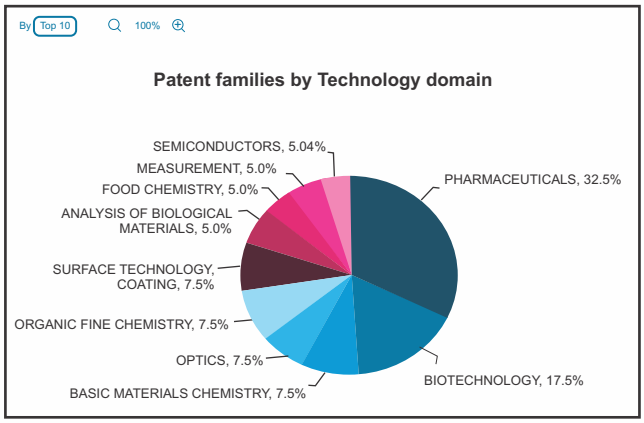
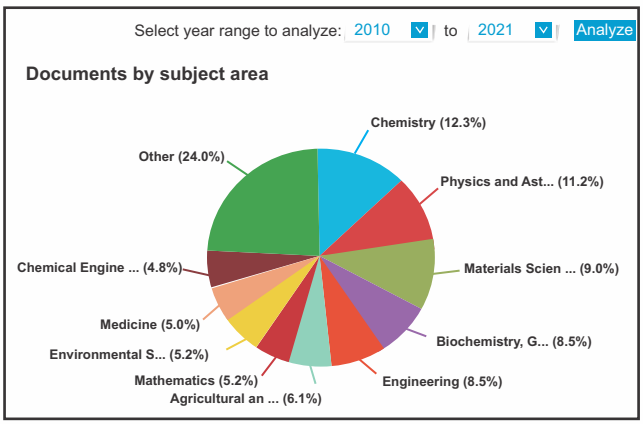


Fig.6: Domains of Research articles publications and patents application of Indian Institute of Science, Bengaluru, Karnataka



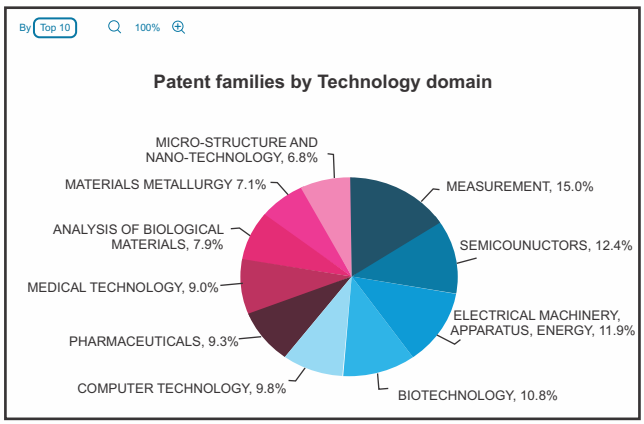


Fig.7: Domains of Research articles publications and patents application of Calcutta University, Kolkata, West Bengal

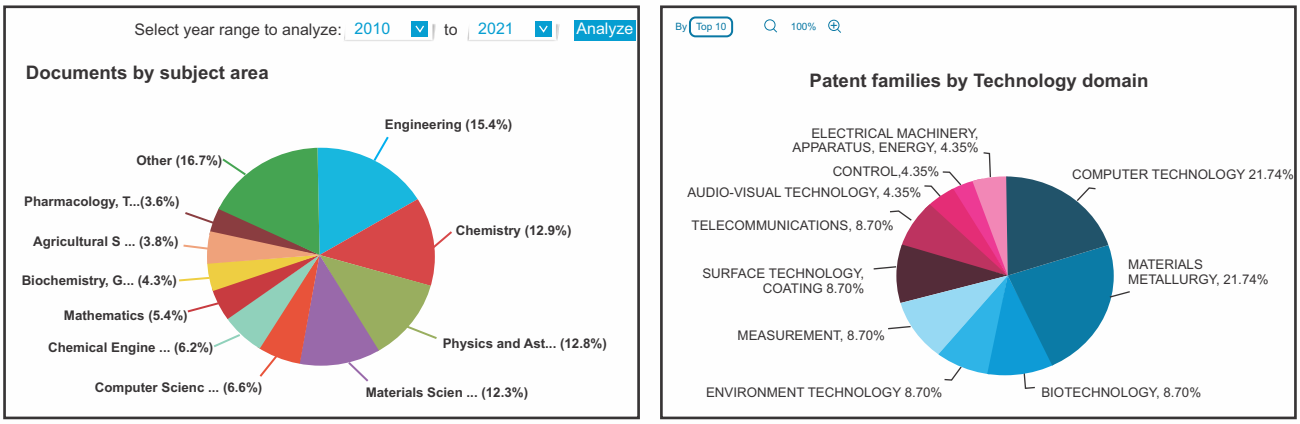


Fig.8: Domains of Research articles publications and patents application of Jadavpur University, Kolkata, West Bengal

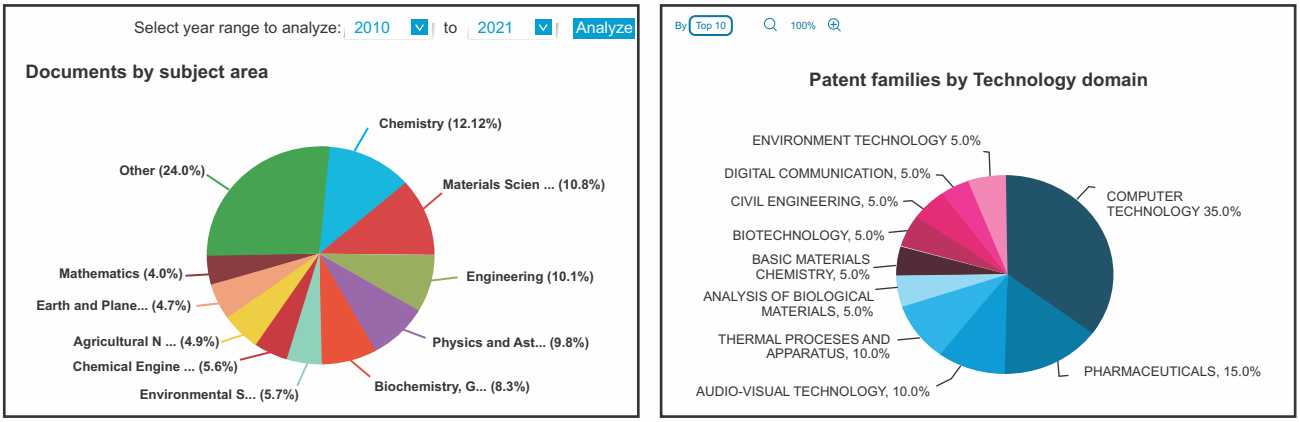


Fig.9: Domains of Research articles publications and patents application of Savitribai Phule Pune University, Pune, Maharashtra

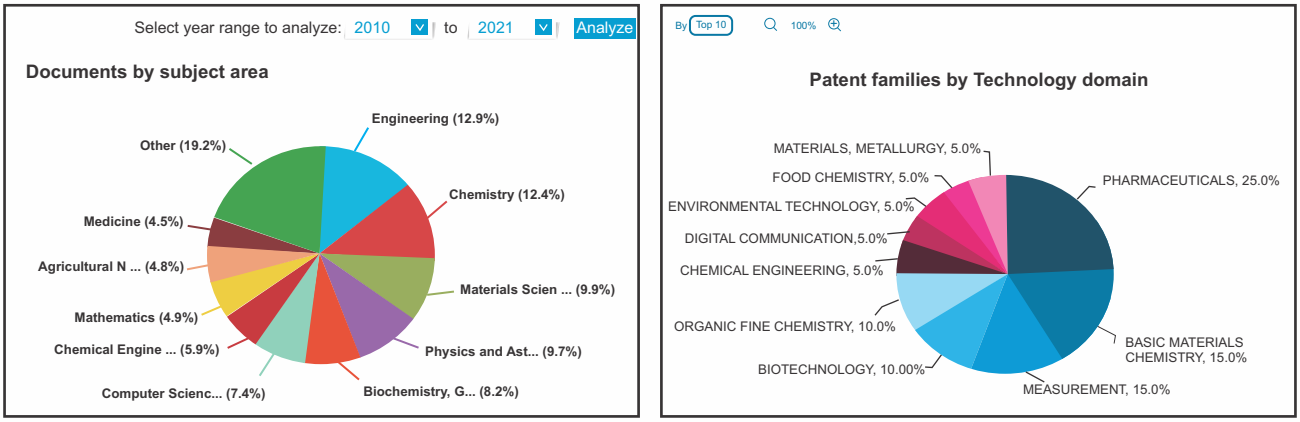


Fig.10: Domains of Research articles publications and patents application of Bharathiar University, Coimbatore, Tamil Nadu

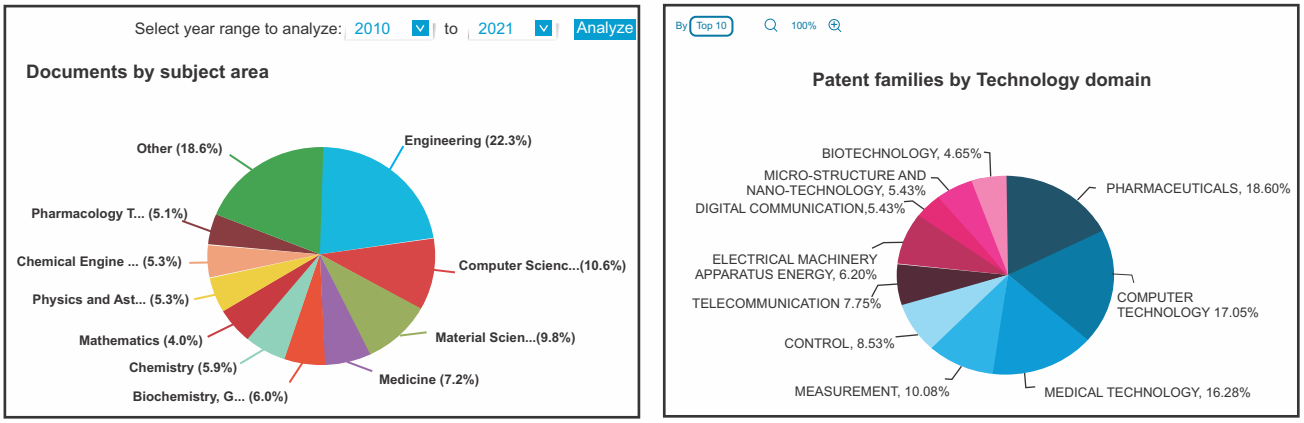


Fig.11: Domains of Research articles publications and patents application of Amrita Vishwa Vidyapeetham, Coimbatore, Tamil Nadu

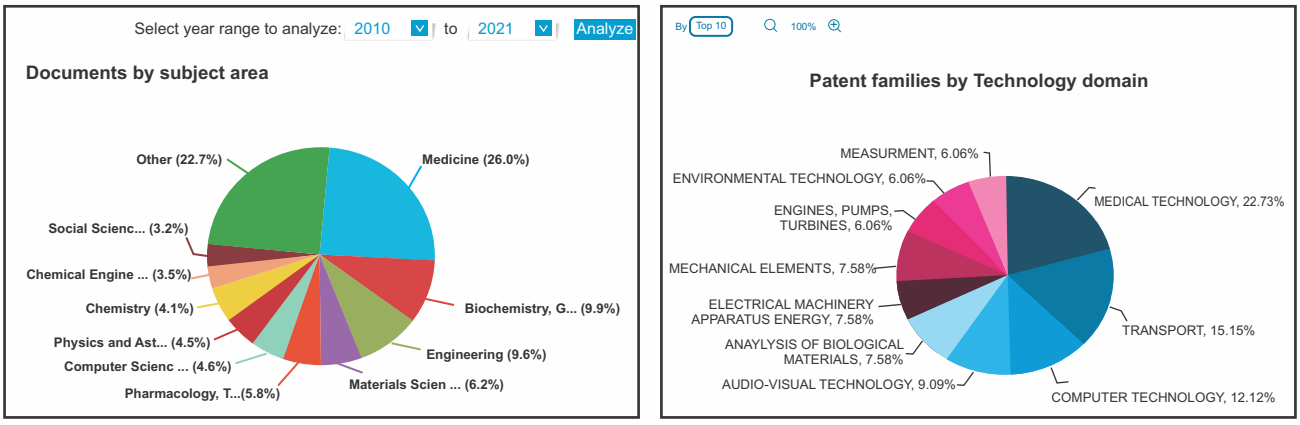


Fig.12: Domains of Research articles publications and patents application of Manipal Academy of Higher Education, Manipal, Karnataka

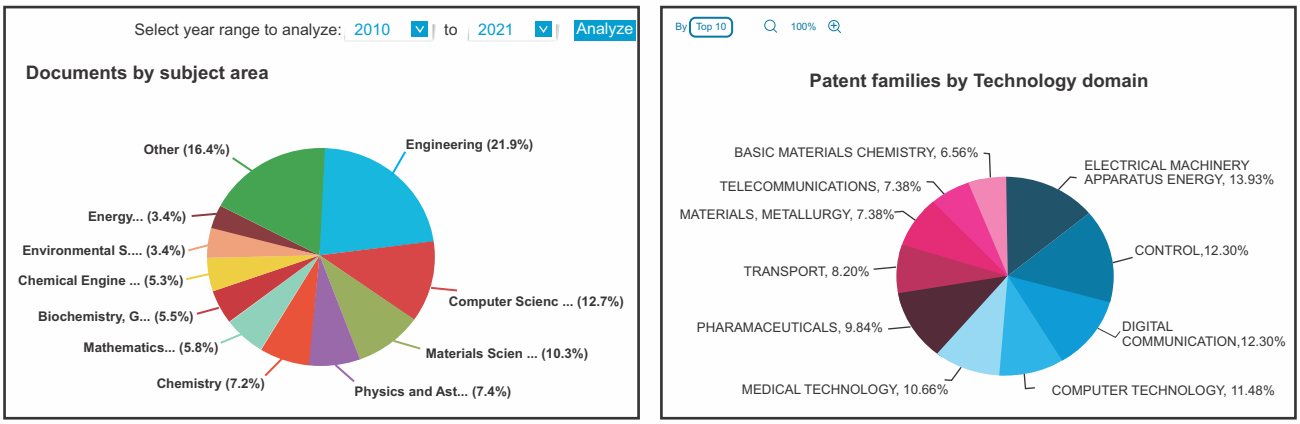


Fig.13: Domains of Research articles publications and patents application of Vellore Institute of Technology, Vellore, Tamil Nadu

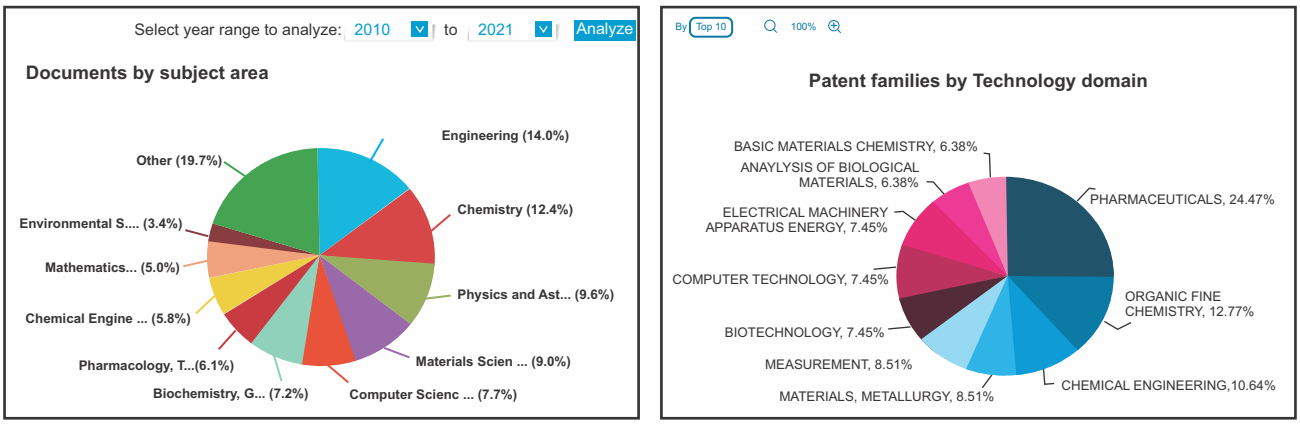


Fig.14: Domains of Research articles publications and patents application of Birla Institute of Technology & Science, Pilani, Rajasthan

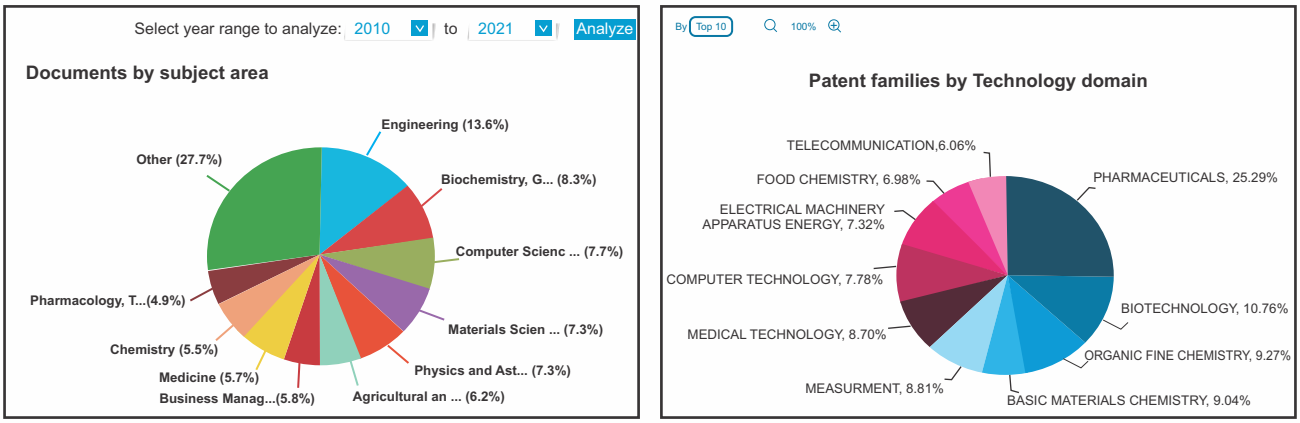


Fig.15: Domains of Research articles publications and patents application of Amity University, Gautam Budh Nagar, Uttar Pradesh

To promote innovations, encouraging funding mechanism, policy interventions required at the state and central level, university-industry linkages, public and private spending on R&D, etc. are the most crucial attributes to enhance translational research ecosystem in India.

RECOMMENDATIONS

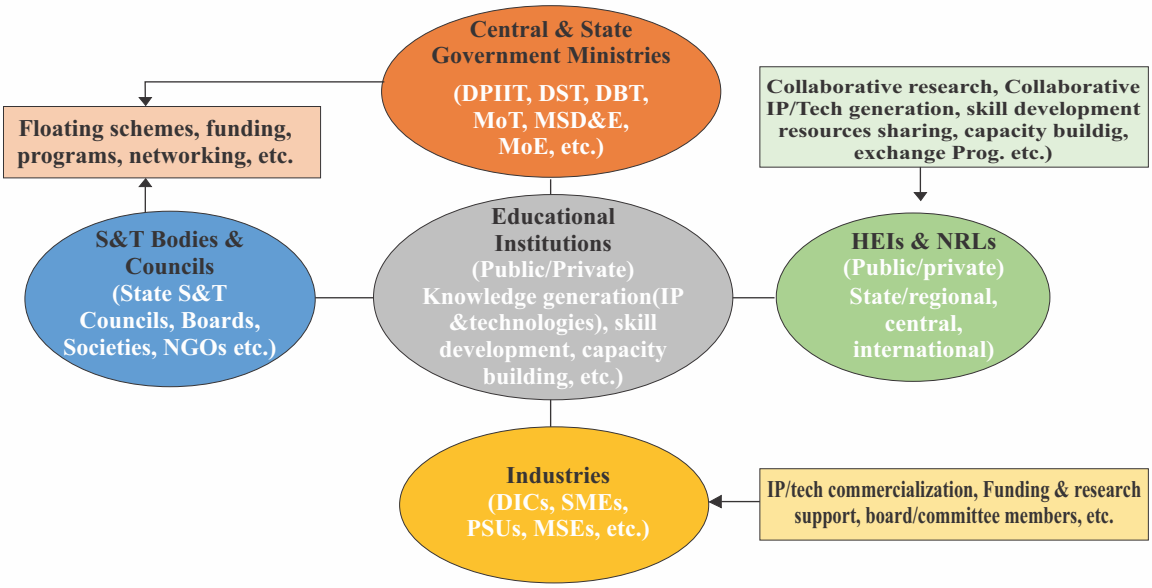
Based on the study concluded, some of the recommendations are drawn to enhance patenting and translational research ecosystem in Indian research universities:

1. All universities and institutions should have IP/Technology Transfer/I-A Cells that are run by IP experts and professionals.
2. The patent filing and commercialization of technologies/products should be handled by IP experts. IP/Technology Transfer/I-A Cells features maybe:
   - IP filing assistance
   - Financial sport
   - Legal advisor
   - Technology transfer
   - I-A interactions
   - Research Publication vetting
3. The 'Funding Agencies' should have separate dedicated funds for IP generation and commercialization activities.
4. To enhance the R&D output in the universities, it is recommended that, each institution should be mandated to collaborate with the industries. Such partnerships will help the scientists to work on real-life scientific challenges being faced by the industries. In return, the industry would be benefitted from the intelligentsia of academia.
5. The patented technology should be assessed at various levels of Technology Readiness Levels (TRLs) to examine its capabilities before transferring the technology to the industry for commercial purposes.
6. Encouraging youths to do more science and research is the need of the hour. India has just 253 researchers per million population, which is way behind many other smaller countries.

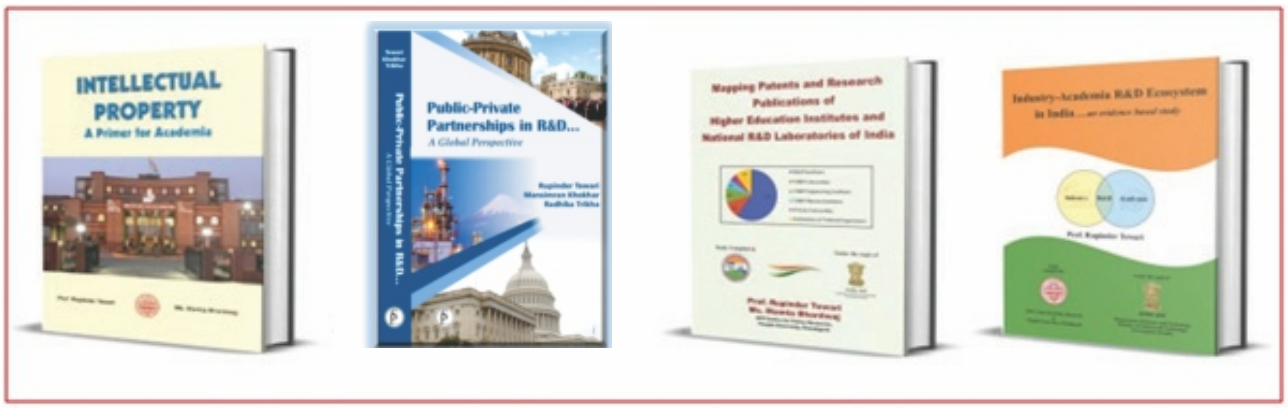
ONGOING ACTIVITY: A comprehensive case study on innovation and collaboration ecosystem in universities in the Northern region states of India through actors such as knowledge, resources, technologies, patents generation and commercialization in various domains of technology.

Jammu & Kashmir	Haryana	Himachal Pradesh
Punjab and Chandigarh	Delhi	Uttarakhand
Rajasthan	Uttar Pradesh	

Ultimate Aim: A model for enhancing translational research ecosystem through I-A collaborations and triple helix model.



BOOKS PUBLISHED



MOU AND OTHER AGREEMENTS (SIGNED AND IN-PROCESS)

Signed:

i. **National Institute for Disaster Management (NIDM),** New Delhi under the initiative: India Universities and Institutions Network for Disaster Risk Reduction (IUINDRR-NIDM). Dec, 2021.

ii. **MoU signed with Knwoledgentia Consultants,** New Delhi for IP and technology transfer awareness and outreach on 2nd February 2023.

In process:

i. MOMENRANDUM OF UNDERSTANDING between DST-Centre for Policy Research Panjab University, Chandigarh and **Centre for Public Policy, Doon Universit,y Dehradun, Uttarakhand.**

ii. MOMENRANDUM OF UNDERSTANDING between DST-Centre for Policy Research, Panjab University, Chandigarh and **Talwar and Talwar Consultants, Mohali.**

MISCELLANEOUS ACTIVITIES

- The scientific staff of DST-CPR is **being invited for the talks** on STI ecosystem, Intellectual Property Rights, Public Private Partnerships, Technology Transfer, and Science Diplomacy and Disaster Risk Management.
- The scientific staff of DST-CPR is also doing **professional development programs through various national and international organizations** in the domains of S&T policies, Intellectual Property Rights, Public Private Partnerships, Technology Transfer, and Science Diplomacy and Disaster Risk Management.
- **Providing facilitative role in activities undertaken by DST-Technology Enabling Centre (TEC)** at Panjab University for industry-academia R&D collaboration and technology commercialization.
- **Undertaken the Policy Review at Panjab University, Chandigarh for Intellectual Policy and R&D & Entrepreneurship** policy.
- The Centre is also **facilitating the faculty members and students in IP filing** by guiding them with the process and procedure of IP filing through Panjab University and otherwise.
- The scientific staff is also members of the **'Reviewing Committee'** of various international journals.
- The advisory role for the project **"Women in STEM"** sponsored by UNESCO Jakarta Office.

WORKSHOPS/SEMINARS/SYMPOSIUMS CONDUCTED BY DST-CPR ATPU, CHD

1. Science, Technology & Innovation (STI) role in disaster risk reduction policies and strategies, January 30, 2023 - February 01, 2023

2. The Role of Intellectual Property and Technology Transfer in Academic Sector February 02, 2023

3. IPR Awareness Programme on February 10, 2023

4. INTERACTIVE SESSION on Importance of IP for Academia on April 29, 2022

5. Overview of IPR with case laws on August 24, 2022

6. National seminar on Intellectual Property Rights (IPR) on August 29, 2022

7. Facilitated Industrial Solutions & Tech Expo! by TEC, Panjab University, Chandigarh. November, 12, 2022

NEWS CORNER

स्टडी • पीयू के डीएसटी सेंटर फॉर पॉलिसी रिसर्च की स्टडी को जनरल ऑफ इंटलेक्चुअल प्रॉपर्टी राइट्स में मिली जगह

55% ने नॉन वर्किंग पेटेंट का एक सा कारण बताया

ममता भाटनागर

अमनदीप मंधु

[illegible]

कॉमन कारण जो फॉर्म में % में बताए गए हैं...

फॉर्म में बताया कारण	2010-12	2013	2014	2015	2016	2017	2018
कमर्शियलाइजेशन का प्रयास किया लेकिन सफलता नहीं मिली	29%	32%	21%	35%	33%	36%	55%
[illegible]	4%	9%	11%	9%	10%	9%	16%
[illegible]	13%	7%	6%	5%	2%	5%	12%
[illegible]	46%	16%	17%	16%	12%	12%	7%
[illegible]	4%	7%	10%	8%	7%	6%	4%
[illegible]	2%	7%	7%	6%	4%	3%	-
कोई कारण फॉर्म-27 में नहीं दिया गया	13%	26%	24%	17%	22%	19%	2%

• यह कारण भी बताए गए जो कुछ अलग थे...

[illegible]

फॉर्म 27 क्यों है जरूरी... [illegible]

चंडीगढ़ भास्कर 16-02-2023

• पीयू ने आईपी फर्म के साथ साइन किया एमओयू...

चंडीगढ़| पंजाब यूनिवर्सिटी के डीएसटी सेंटर फॉर पॉलिसी रिसर्च सेंटर और नॉलेजेंटिया कंसल्टेंट के बीच मेमोरेंडम ऑफ अंडरस्टैंडिंग (एमओयू) बुधवार को साइन किया गया। इंटरनेशनल इंटेलेक्चुअल प्रॉपर्टी एंड कारपोरेट लॉ फर्म के साथ एमओयू कार्यकारी रजिस्ट्रार प्रो. वाईपी वर्मा की मौजूदगी में हुआ। अपर्णा जैन, हरिंदर नारायण, आशिका आहूजा और प्रो. कश्मीर सिंह भी इस मौके पर मौजूद रहे।

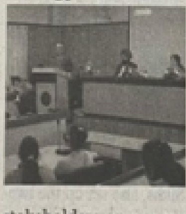
ट्राई सिटी

पीयू में डिजिटल युग में परिवर्तनकारी शासन की चुनौतियां विषय पर व्याख्यान

[illegible]

100 attend National Symposium on 'The Role of Intellectual Property (IP) and Technology Transfer in Academic Sector'

PUNJAB EXPRESS BUREAU
Chandigarh, February 2



DPIIT- IPR Chair, Panjab University (PU), Chandigarh in collaboration with DST-Centre for Policy Research (CPR), PU, Chandigarh organised a National Symposium on 'The Role of Intellectual Property (IP) and Technology Transfer in Academic Sector' on Thursday.

The programme aimed to bring together the domain experts, members of academia and key stakeholders on a common platform for understanding the importance of Intellectual Property (IP) and Tech Transfer. Various dignitaries from national level graced the event and enriched the participants with their thoughts. Prof. Kashmir Singh IPR-Chair Professor & Coordinator of DST- CPR at PU, Chandigarh welcomed the Patron Prof. Renu Vig, Vice-Chancellor, Panjab University, Chandigarh and Chief guest of function Dr. Jatinder Kaur Arora, Executive Director, Punjab State Council for Science & Technology (PSCST), Chandigarh and Member Secretary, Punjab Biodiversity Board, Govt. of Punjab and other guests, speakers and participants.

पी.यू. का नॉलेजेंटिया के साथ समझौता

चंडीगढ़, 15 फरवरी (रश्मिहंस): डी.एस.टी. सैंटर फॉर पॉलिसी रिसर्च (सी.पी.आर.) पंजाब यूनिवर्सिटी और नॉलेजेंटिया कंसल्टेंट्स नई दिल्ली के बीच एम.ओ.यू. रजिस्ट्रार प्रो. यजवेंद्र पाल वर्मा की उपस्थिति में साइन किया गया। दोनों पक्षों से बौद्धिक संपदा (आई.पी.) से संबंधित मुद्दों का समाधान करने और सहयोगी गतिविधियों के माध्यम से आई.पी. ज्ञान बढ़ाने का आग्रह किया।

नॉलेजेंटिया कंसल्टेंट्स एक अंतर्राष्ट्रीय बौद्धिक संपदा (आई.पी.) और कॉरपोरेट लॉ फर्म है। समझौता ज्ञापन आई.पी., सहयोगी प्रकाशनों पर जागरूकता कार्यक्रमों के माध्यम से क्षमता निर्माण को पूरा करेगा और आई.पी. और प्रौद्योगिकी में अपने शोध को बढ़ाने और उन्नत करने के लिए विश्वविद्यालय के छात्रों और संकाय को एक्सपोजर और समर्थन देगा।

आई.पी./प्रौद्योगिकी व्यावसायीकरण को बढ़ावा देने के लिए सेमिनार, कार्यशाला और प्रशिक्षण पर जागरूकता कार्यक्रम आयोजित करेंगे।

दैनिक सवेरा टाइम्स

पीयू के डीएसटी-सैंटर फॉर पॉलिसी रिसर्च और नॉलेजेंटिया कंसल्टैंट्स से किया एमओयू

सवेरा न्यूज/ राकेश (चंडीगढ़)15 फरवरी: पंजाब विश्वविद्यालय के डीएसटी-सैंटर फॉर पॉलिसी रिसर्च और नॉलेजेंटिया कंसल्टैंट्स, नई दिल्ली के बीच एमओयू का औपचारिक हस्ताक्षर बुधवार को रजिस्ट्रार प्रो. यजवेंद्र पाल वर्मा की उपस्थिति में हुए। उन्होंने पहल का स्वागत किया और दोनों पक्षों से बौद्धिक संपदा से संबंधित मुद्दों का समाधान करने और सहयोगी गतिविधियों के माध्यम से आईपी ज्ञान बढ़ाने का आग्रह किया। नॉलेजेंटिया कंसल्टैंट्स एक अंतरराष्ट्रीय बौद्धिक संपदा और कॉरपोरेट लॉ फर्म है। डीएसटी-सीपीआर, पीयू के समन्वयक प्रोफेसर कश्मीर सिंह ने डीएसटी-सीपीआर, पीयू की ओर से औपचारिक हस्ताक्षर समारोह में अपनी उपस्थिति दर्ज कराई, जबकि सुश्री अपर्णा जैन और हरिंदर नरयन, सह-संस्थापकों के साथ उनके सहयोगी साथी, नॉलेजेंटिया कंसल्टैंट्स की ओर से आशिका आहूजा। प्रो. कश्मीर सिंह ने इस सहयोग के दृष्टिकोण पर प्रकाश डाला कि यह विश्वविद्यालय में आईपी इकोसिस्टम और ट्रांसलेशनल रिसर्च इकोसिस्टम के क्षेत्र में परामर्श प्रदान करेगा।

National seminar held at Panjab varsity

CHANDIGARH : Panjab University (PU) organised a national seminar on intellectual property rights on Monday. It was aimed at increasing IP awareness among the faculty, research experts, and students.

Bedi - Photojournalist

Chandigarh August 29, 2022

Panjab University organises a National Seminar under Azadi ka AmritMahotsav.

As part of the National Intellectual Property Awareness Mission (NIPAM), launched by the Ministry of Commerce and Industry, Government of India in 2021, the DST-Centre for Policy Research (CPR) and the Department of Biotechnology, Panjab University, Chandigarh, organised a national seminar on intellectual property rights. The National Webinar was conceived as part of the 'AzadikaAmritMahotsav' with the intention of increasing IP awareness amongst the faculty, research experts, and students of Panjab University, Chandigarh.

Prof. Y P Verma, Registrar, PU, Chd, presided over the opening remarks and emphasised the economic and intellectual significance of IP for young researchers and students. The seminar was led by Mr. Shailendra Singh, Examiner of Patents and Designs, Indian Patent Office, Ministry of Commerce and Industry, Government of India, New Delhi, as a resource person. Mr. Singh, who is affiliated with the NIPAM mission, defended the value of intellectual property in the contemporary era and its existence in nearly every sphere of life. He shared with young students how innovations can lead to IP value and how students can file IPs and solve society's problems.

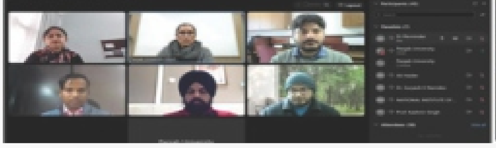
In India, 22% of the population is between the ages of 19 and 20, and by 2030, 60-70 percent of the population will be in the age bracket of 40 years, therefore the youthful population might play a significant part in innovation/intellectual property generation, he said. Prof. Kashmir Singh, Coordinator, DST-CPR, and Prof. D D Singh, Chairperson, Department of Biotechnology, Punjab University, Chd., urged students to investigate intellectual property when doing research and academic projects. Over 200 faculty members, research scholars, and students from PU and institutes in and around Chandigarh attended the seminar. Participants learned about intellectual property rights, process to file and draft a patent, and how to derive socioeconomic value from a commercialisedan IP.

Symposium held on intellectual property

CHANDIGARH: Panjab University's DPIIT- IPR chair, in collaboration with DST-CPR, organised a national symposium on 'Role of Intellectual Property and Technology Transfer in Academic Sector'. The programme aimed to bring experts, members of academia and key stakeholders on a common platform. HTC

Panjab University, Chandigarh
4d

DST-Centre for Policy Research (CPR) at Panjab University, Chandigarh organized a 3-day online training program on "Science, Technology & Innovation (STI) role in DRR policies and strategies" from 30 Jan. 2023 to 01 Feb. 23.



PROFESSIONAL COURSES COMPLETED BY SCIENTIFIC STAFF

S. No.	Professional Development Programme/Initiative
1.	Summer School on **Science Diplomacy:** Improving Capacity of Science to Inform Policy, organized by Venice International University, 2022
2.	Geneva **Science and Diplomacy** Anticipation Summit, 2022
3.	International Workshop on **'Role of Science, Technology and Innovation** (STI) in Achieving Sustainable Development Goals – 2030', 2022
4.	**WIPO E-LEARNING COURCES** • DL-506 Collective Management of Copyright and Related Rights for Policy Makers • DL-302 Trademarks, Industrial Designs and Geographical Indications (version 2)
5.	A Course on Science Diplomacy, **AAAS-TWAS**, 2022
6.	A workshop on **Access to Medicines, TRIPS and Patents In The Developing World at Inter-University Centre for IPR Studies (IUCIPRS), CUSAT, Kochi**, 2022.
7.	One-day international conference on **IP commercialization in an Interconnected World,** Organized by DPIIT-CIPAM, Embassy of Denmark, New Delhi, Innovation Centre Denmark and Danish Patent and Trademark Office, 2022.
8.	Online- IGES-BRIHC Postgraduate Workshop **'The Humanities, the Social Sciences and Climate Change", 2022**
9.	**Advances In Geoinformatics For Disaster Management And Mitigation -Agdmm 2022,** National Institute of Disaster Management, Ministry of Home Affairs in collaboration with SRM Institute of Science & Technology.
10.	International Conference on Sustainable Development (ICSD), 2022
11.	**ICSD Speaker Series:** Sustainable Development Leaders in the Workforce (PART ONE), **2022**
12.	**High-Level Political Forum, 2022**
13.	Side Event: Climate Action and the SDGs — Closing Gaps and Strengthening Synergies
14.	FICCI Higher Education Conference **'Reimagine Industry-Academia Partnership',** 2022, FICCI education.
15.	International Training Workshop of **CISTRAT, Ministry of Science and Technology, UNESCO**, 2022-2023 on STI Policy Research and Method in Belt and Road Countries.
16.	Global SCAPE -Free Training Workshops for **Science Communicators:** Global Relevance in Science Communication, 2023

UNDERGOING PROJECTS

UPCOMING BOOK: PUBLICATION UNDER SPRINGER

Editors:

1. Prof. Kashmir Singh, Coordinator, DST-CPR at PU, Chd.
2. Prof. Nirmala Chongtham, Former Coordinator, DST-CPR at PU, Chd.
3. Dr. Radhika Trikha, Former Senior Policy Fellow, DST-CPR at PU, Chd.
4. Er. Mamta Bhardwaj, Sr. Scientist C, DST-CPR at PU, Chd.
5. Dr. Sukhdeep Kaur, Scientific Officer, DST-CPR at PU, Chd.

Themes:

Theme 1: Architecture of Science, Technology, and Innovation (STI) System
Theme 2: Strengthening Innovation and Entrepreneurship ecosystem
Theme 3:Translational Research Ecosystem
Theme 4: Intellectual Property Ecosystem based on case studies or data analysis
Theme 5: Advances in Science, Technology, and Innovation Ecosystem

COLLABORATIVE PROJECTS UNDERTAKEN (DST-CPR & FLCTD, UNIDO)

DST-CPR at PU, Chd. in collaboration with Facility for Low Carbon Technology Deployment [financed by the Global Environment Facility (GEF), implemented by the United Nations Industrial Development Organisation (UNIDO) in collaboration with the Bureau of Energy Efficiency (BEE)] have undertaken joint project titled ***'A study of the Technology Transfer Ecosystem in India to strengthen the commercialisation of Low Carbon Technologies'.***

DST-CENTRE FOR POLICY RESEARCH
PANJAB UNIVERSITY CHANDIGARH

FLCTD
Promoting Innovation and Deployment of Low Carbon Technologies

- Analysis of Technology Transfer Ecosystem of India in comparison to the technology transfer ecosystem of select innovation backed countries
- Developing first of its kind technology transfer assessment framework in India
- Identification of barriers in technology transfer along with challenges and gaps
- Developing policy suggestions for enhancing technology transfer ecosystem of the country
- Building framework for capacity enhancement in technology transfer (for selected 10 TTOs).


CSIR-IHBT Palampur


IIT Ropar


NEHU Shillong


MNIT Jaipur


IIT Bombay


IIT Guwahati


IIT Jodhpur


ICAR-NRCB Trichy

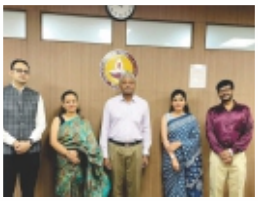

KIIT Bhubaneshwar


IIT Gandhinagar


IIIT Hyderabad


CSIR-NIIST Trivandrum


IIT Delhi


IIT Madras


CSIR-AMPRI Bhopal


CUP Bathinda


SRM Chennai

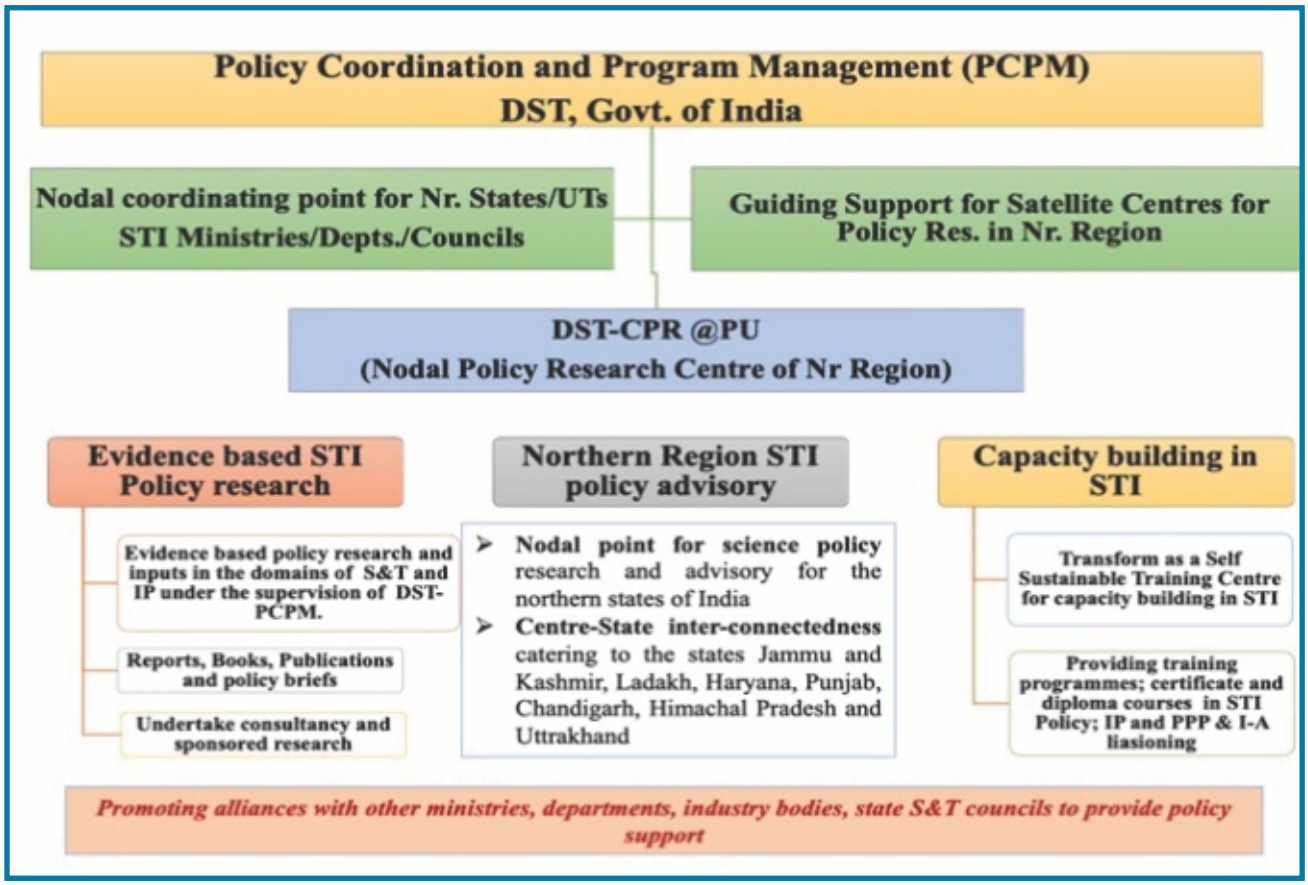

IISER Mohali

WAY FORWARD

The DST-CPR at PU, Chd. under the ambit of Policy Coordination and Programme Management (PCPM) Division of DST, GoI will emerge as a 'Nodal Coordinating Point' for Northern States and Union Territories for science, technology and innovation policy work and will anchor to the emerging 'Satellite Centres' in the Northern part of India.

- DST-CPR at PU, Chandigarh wishes to transform into a sustainable institutional and training Centre for research in S&T and IP, skill development and training in the Northern part of India.
- The Centre aspires to be actively linked with the national policy making team and work 'under hub and spoke model' for DST- PCPM Division, GoI, New Delhi.
- The Centre aspires to become a nodal point for science policy research for the northern region catering to Jammu and Kashmir, Ladakh, Haryana, Punjab, Chandigarh, Himachal Pradesh and Uttrakhand.
- Future studies to be undertaken in the Centre will help to add literature to existing policy related research areas. In addition to this, the studies undertaken will help to address the policy related gaps and provide suggestions and recommendations to the policymakers.

The CPR will undertake three core activities



STAFF DETAILS

Prof. Kashmir Singh, Department of Biotechnology at Panjab University, Chandigarh is the coordinator of DST- Centre for Policy Research, Panjab University, Chandigarh. He holds the position of IPR Professor at PU, Chandigarh. He has over 16years of teaching and research experience. Prof. Kashmir is associated with the science and public administration field and has developed core expertise in the field of science policies and research, innovation and entrepreneurship. He is associated with the functioning of units established at Panjab University dealing with translational research ecosystems such as Technology Enabling Centre (TEC), Centre for Industry Institute Partnership Programme (CIIPP) and Chandigarh Region of Innovation and Knowledge Cluster (CRIKC). He has experience in coordinating with Industry for undertaking joint collaborative projects and capacity enhancement work. His experience in networking and coordinating with academic and research institutes, university departments, industry and start-ups will be useful to understand stakeholder perspectives and their needs and challenges in the existing STI ecosystem. Moreover, Prof. Kashmir has many publications (papers, reports, books, etc) and projects to his credit in the domain of technology development and commercialization, industry-academia liasoning, collaborative research, intellectual property rights, etc.

Er. Mamta Bhardwaj (Sr. Scientist C) is working as a Sr. Scientist-C at DST-Centre for Policy Research at Panjab University, Chandigarh since 2015. She has been working in the domain of Intellectual Property Rights (IPR), S&T Policy and Science Diplomacy of India and other countries. She is credited with many research publications in national and international journals and co-author of three books namely 'Industry-Academia R&D Ecosystem in India.....an evidence based study' and 'Mapping Patents and Research Publications of Higher Education Institutes and National R&D Laboratories of India' and Intellectual Property Rights….a primer for academia.

Dr. Radhika Trikha (Former Sr. Policy Fellow) a microbiologist cum biotechnologist by profession, obtained her PhD in 2016 from the Department of Microbial Biotechnology, Panjab University, Chandigarh. Dr. Trikha was working as a Sr. Policy Fellow at DST-Centre for Policy Research (CPR) at the Indian Institute of Sciences (IISc), Bangalore hosted at the Department of Science and Technology (DST), Government of India, New Delhi and CPR at Panjab University, Chandigarh. She worked previously as Senior Scientist C and D and Policy fellow with DST-CPR at Panjab University, Chandigarh. She is a member of the STI Policy (STIP) Secretariat established by DST, GoI. She is also on India's 5th National Science, Technology and Innovation Policy draft editorial team.

Dr. Sukhdeep kaur (Scientific Officer) expertise in interdisciplinary mixture of fields: physics, statistics, cryosphere, computer languages, geo-physical Instrumentation and analytic tools. She looking after the mandate of public private partnership as well as contributing to mapping of technology transfer eco system in India. She has worked with noted R & D organisations in India (CSIR and DRDO) as well as abroad (WSL-SLF, Switzerland) to develop innovative products which put her knowledge to practical use.

Dr. Monika Kajal (Project Associate) does research in the area of technology transfer. She has experience in fields, including molecular biology, plant tissue culture, next-generation sequencing data analysis, and intellectual property. She has four notable papers in international peer-reviewed journals. She is working on the project funded by UNIDO, New Delhi on mapping of technology transfer eco system in India.

Lovneet Dhalaria (Project Associate) is M.Sc. (Systems Biology & Bioinformatics from Panjab University (PU), Chandigarh. He has 4.5 years of research experience while working on different research projects at the Department of Gastroenterology, PGIMER, Chandigarh. He is working on the project funded by UNIDO, New Delhi on mapping of technology transfer eco system in India.

Ms. Ruchika (Secretarial Staff/ Data Entry Operator) takes care of clerical work related to the DST- CPR and manages meetings conducted by the centre.

Mr. Ravinder Kumar (Helper) ensures that sitting arrangement in the office room is clean and hygenic before commencing of the office work. He carries files and mails from/to office. He also does other works assigned to him.

TESTIMONIALS

Dr. Jatinder K. Arora
Executive Director
Punjab State Council for Science & Technology, Chandigarh

Intellectual Property contributes immensely towards socio-economic development. India is gaining strong ground in the generation of Intellectual Property. However, there is a need for creating enabling ecosystem to facilitate pooling of expertise and resources by industry and academia for IP creation as well as commercialization. I congratulate DST-Centre for Policy Research of Panjab University for making earnest efforts in this direction. I urge DST-CPR, PU to also strengthen country's researchers per million population by devising ways for encouraging young minds to pursue careers in science and scientific research. I wish the dynamic team of DST-CPR, Panjab University great success for their future endeavors.

Science, Technology and Innovations are crucial parameters to achieve societal and economic growth of a nation. Public private partnerships, collaborations between the stakeholders and commercialization of technologies and IPs are important domains of STIP on which our country needs to focus more. I congratulate the DST-Centre for Policy Research for working in these mandates and being a crucial part of the STIP 2020 formulations. I hope the Centre comes up with more evidence-based studies and recommendations to enhance country's societal and economic growth.

Prof. Harsh Nayyar
Director, Research & Development Cell
Panjab University, Chandigarh

Prof. Sujit Bhattacharya
Chief Scientist & Advisor
CSIR-National Institute of Science Communication & Policy Research, New Delhi

STIP 2020 draft has drawn attention to the various institutional mechanisms that need to be created to make Indian STI ecosystem globally competitive, STI to address national aspirations such as sustainable development, self-reliant India and entrepreneurship. The document focuses on building and empowering critical infrastructure, Open science framework and inclusiveness, science and gender parity, developing institutional architecture for integrating traditional knowledge systems and grassroots innovation, new mechanisms for financing and governance of STI, and Intensify global linkages. I congratulate DST-Centre for Policy Research at Panjab University to be part of STIP formulations process.

A renaissance is imperative for us to once again become a knowledge superpower rather than simply providing cheap labour in the areas of high technology.

Dr. APJ Abdul Kalam