INTELLECTUAL PROPERTY RIGHTS (IPR) AWARENESS WORKSHOP

30th January 2025

Sponsored by Council of Science and Technology (CST), Uttar Pradesh

Research and Development Cell and IPR Cell,
Deen Dayal Upadhyaya Gorakhpur University Gorakhpur
(U.P) India

Intellectual Property Rights (IPR)
Awareness Workshop
30th January 2025

Organizing Committee

Chief Patron	Prof. Poonam Tandon, Hon'ble Vice Chancellor Deen Dayal Upadhyaya Gorakhpur University, Gorakhpur (Uttar Pradesh)
Convener	Prof. Dinesh Yadav Director, Research & Development Cell, Deen Dayal Upadhyaya Gorakhpur University, Gorakhpur (Uttar Pradesh)
Co-convener	Prof. Rajarshi Kumar Gaur Head, Department of Biotechnology, Deen Dayal Upadhyaya Gorakhpur University, Gorakhpur (Uttar Pradesh)
	Prof. Umesh Yadava Coordinator (IPR, Legal and Ethical Matters), Deen Dayal Upadhyaya Gorakhpur University, Gorakhpur (Uttar Pradesh)
Organizing Secretary	Dr. Manindra Kumar Nodal Officer, IPR Cell Deen Dayal Upadhyaya Gorakhpur University, Gorakhpur (Uttar Pradesh)

Advisors

Prof. Manish Kumar Srivastava	Coordinator Committee -I. RDC Deen Dayal Upadhyaya Gorakhpur University, Gorakhpur (Uttar Pradesh)
Dr. Ramwant Gupta	Coordinator Committee -III. RDC Deen Dayal Upadhyaya Gorakhpur University, Gorakhpur (Uttar Pradesh)
Dr. Satya Pal Singh	Coordinator Committee -IV. RDC Deen Dayal Upadhyaya Gorakhpur University, Gorakhpur (Uttar Pradesh)

Contents

MESSAGE FROM CHIEF PATRON

Congratulation to entire organizing committee associated with the "Intellectual Property Rights (IPR) Awareness Workshop" sponsored by Council of Science and Technology (CST) Uttar Pradesh. The quality research has been observed as one of the main criteria for ranking of the Universities. The manifestation of quality research are the publications in good journals, patents and projects from different funding agencies. The workshop aims to aware the students and faculty members about the IPR issues and how it can influence the research. The University has performed exceptionally well in the ranking front in the last one year. It secured the 84th Rank in India and 1st in UP in the Nature Index Ranking, 2024, 240th rank in QS World University Rankings: Southern Asia 2025, 226th rank in SCImago Institutions Rankings, 2024, and 104th position in India in the Uni Rank University Ranking, 2024. The University has also performed well in the 2024 edition of Edurank and Webometrics Rankings. The University emerged as the only state-run University to be ranked among the Business Administration, Computer Application and Mass Communication and Journalism category in Uttar Pradesh by IIRF Rankings 2025. These rankings have established the University as a center for quality teaching and Research nationwide.
Best wishes

Prof. Poonam Tandon

Vice-Chancellor

MESSAGE FROM THE ORGANIZING COMMITTEE

It is a matter of satisfaction that we are organizing one day "***Intellectual Property Right Awareness Workshop"*** on **30th January 2025**, which is being sponsored by Council of Science and Technology (CST), Uttar Pradesh. First of all, we would like to sincerely acknowledge the support of our Hon'ble Vice Chancellor, Prof. Poonam Tandon madam for encouraging us to organize such workshop which can directly influence the quality research of the University. Research and Development Cell and IPR cell of the University last year also organized the "**One-day Awareness workshop on IPR"** on **2nd March 2024** with the financial support from CST, Uttar Pradesh. Earlier the IPR cell UGC-HRDC Centre, DDU Gorakhpur University, Gorakhpur has organized **Online lecture series on IPR Issues** from **25th Sept 2020 to 1st Oct. 2020** for the faculty members of the University. The importance of IPR is well evident in the rankings of the Universities and with this intention, the IPR Cell has recently modified to make it students and teacher centric, with provision for financial and professional support from the University. Under the guidance of Hon'ble Vice Chancellor, the University has filled more than 40 patents within a span of 6-7 months. Further, another step towards achieving excellence in research has been the declaration of University Research Excellence Awards (UREA) by our Hon'ble Vice Chancellor madam for the year 2024 to students and faculty members for quality publication in quartile journals. These initiatives will motivate the students and faculty members for doing quality research. Our team would like to thank invited speaker for the workshop namely **Prof. H.S. Chawla**, Professor & Head Genetics & Plant Breeding (Retired); Dean Post Graduate, G.B Pant University of Agriculture and Technology, Pantnagar, **Dr. Kanika Malik**, Senior Principal Scientist, CSIR-National Institute of Science Communication and Policy Research (NIScPR) New Delhi, **Prof. R. C. Chaudhary**, Chairman, Participatory Rural Development Foundation (PRDF), Gorakhpur, **Adv. Ashish Sharma,** Managing Partners of IP NATION, The Law Firm Registered Patent Agent & IP Facilitator for Start-ups (Govt. of India), **Prof. Dinesh Yadav**, Director, Research and Development Cell, DDU Gorakhpur University, Gorakhpur. We would also like to appreciate the effort of entire team of Research and Development Cell and IPR Cell of the University for this workshop.

With best wishes to all participants

Prof. Dinesh Yadav, Convener
Prof. Rajarshi Kumar Gaur, Co-Convener
Prof. Umesh Yadava, Co-Convener
Dr. Manindra Kumar, Organizing secretary

RESEARCH AND DEVELOPMENT CELL

Prof. Poonam Tandon
Hon'ble Vice-Chancellor

Prof. Dinesh Yadav
Director, Research and Development Cell

Prof. Rajarshi Kumar Gaur
Coordinator, Committee-II
(Research Program, Policy, and Development)

Dr. Manish Kumar Srivastava
Coordinator, Committee-I
(Finance and Infrastructure)

Prof. Umesh Yadava
Coordinator, Committee-V
(IPR, Legal and Ethical Matters)

Dr. Ramwant Gupta
Coordinator, Committee-III
(Collaboration and Consultancy)

Dr. Satya Pal Singh
Coordinator, Committee-IV
(Product Development, Monitoring, and Commercialization)

Dr. Manindra Kumar
Nodal Officer, IPR Cell

PATENTS GRANTED-2024

SL. NO.	TITLE OF PATENT FILED	APPLICATION NUMBER	DATE OF FILING	DATE OF GRANT	NAME OF INVENTOR(S)	AFFILIATION(S)
1	BIOSENSOR DEVICE FOR TARGETED DRUG DELIVERY	Design Number-6357927 (United Kingdom)	08-04-2024	16-04-2024	Dr. S. Anuradha, Dr. T.P Babur, ***Dr. Tulika Mishra,** Dr. S. Rathore Dr. A Rajput, Dr. M. Barwant Dr. R Srivastava	*Department of Botany, DDUGU
2	AGRICULTURAL APPRATUS FOR PREVENTING PESTS IN GREENHOUSE	Design No-413528-001	15-04-2024	06-06-2024	Dr. R Sikarwar, Dr. Roopa S, ***Dr.Tulika Mishra,** Dr. S.K Nath, Dr. Prasant G.P, Dr. P.Kumari	*Department of Botany, DDUGU
3	GEL ELECTROPHORESIS APPARATUS ANALYSING PLANT GENETIC MATERIAL	416425-001	10-05-2024	04-07-2024	Dr. R Shrivastava, Mr. M. Barwant Dr. S. Shitole, ***Dr. Tulika Mishra** Dr. V. Kumaravel	*Department of Botany, DDUGU
4	ELECTRIC ASPIRATOR	Design No. 419638-001	11-06-2024	22-08-2024	Dr. Neelam Kumari, ***Dr. Kumari Sunita,** Dr. Mahesh Kumar Yadav, Dr. Achint Verma, Dr. Brijesh Kumar Verma, Dr. Dijendra Kumar, Dr. Divya Sharma, Dr. Suyash Kumar Srivastava, Anshu Chauhan	*Department of Botany, DDUGU
5	AI BASED PLANT STRESS DETECTING DEVICE	430633-001	16-09-2024	19-11-2024	K Sunita	*Department of Botany, DDUGU
6	ELECTROMAGANETIC SIEVE SHAKER FOR HERBAL DRUG PARTICLE SEPARATION	6400151	25-10-2024	31-10-2024	***Prof. Sarad Kumar Mishra,** Mr. Vivek Dhar Dwivedi, ***Dr. Noopur Singh, Dr. *Nikhil Raghuvanshi**	*Department of Biotechnology, Institute of Agriculture and Natural Sciences, DDUGU

PATENTS FILED/PUBLISHED
(2024 onwards)

SL. NO.	TITLE OF PATENT FILED	APPLICATION NUMBER	DATE OF FILING	DATE OF PUBLICATION	NAME OF INVENTOR(S)	AFFILIATION(S)
1	A SYSTEM AND METHOD FOR DYNAMIC PROGRAMMING-BASED INSERTION SORTS(DPIS) (**DDUGKPCRN003**)	202411027350	02/04/2024	26/07/2024	Dr. Saurabh Singh	Institute of Engineering and Technology, DDUGU
2	A PROCESS OF BIOREMEDIATION AND PLANT GROWTH PROMOTION USING BACTERIUM STRAIN HAVING RESISTANCE TO ARSENIC (**DDUGKPCRN001**)	202411028451	06/04/2024	26/07/2024	Ms. Priyanka Bharti Prof. Sarad Kumar Mishra	Department of Biotechnology, DDUGU
3	A METHOD OF ENHANCED BIO-RETTING OF NATURAL FIBERS USING PECTINASES **(DDUGKPCRN006)**	202411031591	20/04/2024	05/07/2024	Ms. Shruti Dwivedi Prof. Dinesh Yadav	Department of Biotechnology, DDUGU
4	AN ENHANCED METHOD OF RETTING AND CLARIFICATION OF FRUIT JUICE USING PECTINASE FROM AN INDIGENOUS SOIL FUNGI (**DDUGKPCRN010**)	202411031592	20/04/2024	26/07/2024	Ms. Shruti Dwivedi Prof. Dinesh Yadav	Department of Biotechnology, DDUGU
5	AN ENZYME COCKTAIL AND AN ENZYME COCKTAIL BASED DEINKING METHOD FOR RINTED SHEETS (**DDUGKPCRN002**)	202411031593	20/04/2024	26/07/2024	Dr. Aiman Tanveer Supriya Gupta, Prof. Dinesh Yadav	Department of Biotechnology, DDUGU

6	A MULTI-ENZYME COCKTAIL MEDIATED PREPARATION OF HANDMADE SEED PAPER USING AGRICULTURAL WASTE (**DDUGKPCRN009**)	202411033369	26/04/2024	05/07/2024	Dr. Aiman Tanveer Supriya Gupta Prof. Dinesh Yadav	Department of Biotechnology, DDUGU
7	A METHOD FOR CALCIUM PECTATE GEL SHEETS FORMATION USING PECTINASE (**DDUGKPCRN012**)	202411033370	26/04/2024	26/07/2024	Ms. Shruti Dwivedi Prof. Dinesh Yadav	Department of Biotechnology, DDUGU
8	DETECTION OF BEGOMOVIRUS (PLANT VIRUS) BY USING AuNP-SILICON WAFER (**DDUGKPCRN018**)	202411034404	30/04/2024	09/08/2024	Prof. Rajarshi Kumar Gaur Mr. Rakesh Kumar Verma	Department of Biotechnology, DDUGU
9	A GREEN SHIELD BIOFUNGICIDE COMPOSITION AND ITS METHOD OF PREPARATIONS FOR PROLONGING THE QUALITY AND SHELF LIFE OF STRAWBERRY (**DDUGKPCRN005**)	202411034959	02/05/2024	09/08/2024	Ms. Mansi Prof. Pooja Singh Mr. Ritesh Kumar Rai	Department of Botany, DDUGU
10	POTATO STARCH BASED COMPOSITE ELECTROLYTE FOR ENERGY APPLICATION (**DDUGKPCRN015**)	**202411037656**	13/05/2024	09/08/2024	Km Jyoti Rai Dr. Manindra Kumar Deepash Shekhar Saini Dr. Prashant Shahi	Department of Physics, DDUGU
11	A METHOD OF ISOLATING RHIZOSPHERIC BACTERIAL STRAINS (**DDUGKPCRN019**)	**202411039115**	18/05/2024	26/07/2024	Prof. Rajarshi Kumar Gaur, Neetu Singh Yadav	Department of Biotechnology, DDUGU
12	MULTIPLE ENZYME PRODUCTION BY Aspergillus flavus ISOLATED FROM ENRICHMENT CULTURE USING VEGETABLE WASTE	**202411039116**	18/05/2024	09/08/2024	Dr. Aiman Tanveer Supriya Gupta Prof. Dinesh Yadav	Department of Biotechnology, DDUGU

	(**DDUGKPCRN008**)					
13	A RADIAL CHROMATOGRAPHIC CUM MOLECULE FRACTIONATOR THAT CAN BE FITTED ON ROTOR (**DDUGKPCRN021**)	**202411039803**	22/05/2024	26/07/2024	Prof. Rajarshi Kumar Gaur Sandeep Mishra	Department of Biotechnology, DDUGU
14	A METHOD OF PRODUCTION OF PECTINASE USING CO-CULTURE BASED SOLID-STATE FERMENTATION FOR FRUIT JUICE CLARIFICATION	**202411043742**	06/06/2024	27/09/2024	Ms. Shruti Dwivedi Km Arti Prof. Dinesh Yadav	Department of Biotechnology, DDUGU
15	A PROCESS TO FORMULATE SYRUP FROM INDIGENOUS PLANT SPECIES FRUIT PODS POST RIPENING **(DDUGKPCRN023)**	**202411046287**	14/06/2024	06/12/2024	Dr. Poornima Saraswat Prof. Rajarshi Kumar Guar	Department of Biotechnology, DDUGU
16	AN ADAPTIVE BAR MEASUREMENT DEVICE FOR PHYSICALLY DISABLED PERSON (**DDUDKPCRN020**)	**202411049875**	**28/06/2024**	16/08/2024	Dr. Anshu Gupta Mr. Ashish Ranjan Md. Kuresh Khan	Department of Commerce Hotel Management & Catering Technology, DDUGU
17	A HETEROEPITAXIAL BETA-PHASE GALLIUM OXIDE ON 4H-SILICON CARBIDE SUBSTRATE BASED DEVICE AND ITS METHOD OF FABRICATION **(DDUDKPCRN024)**	**202411052612**	10/07/2024	27/09/2024	Narendra Yadava Rajeev Kumar Chauhan	Department of Electronics and Communication Engineering, DDUGU Department of Electronics and Communication Engineering, MMMUT Gorakhpur,
18	AN INSECT REARING CHAMBER **(DDUDKPCRN025)**	**202411056750**	**25/07/2024**	15/11/2024	Ms. Taheera Ansari Dr. Sushil Kumar	Department of Zoology, DDUGU
19	A BACTERIAL FORMULATION FOR PLANT GROWTH PROMOTION IN ARSENIC	**202411064059**	**24/08/2024**	IN PROCESS	Ms. Priyanka Bharti Prof. Sarad Kumar Mishra	Department of Biotechnology, DDUGU

	STRESSED SOIL AND ITS METHOD OF PREPARATION **(DDUDKPCRN028)**					
20	A METHOD OF PREPARING ANTIBACTERIAL SPRAY BOTANICAL EXTRACT FROM LANTANA CAMER**"** **(DDUDKPCRN030)**	**202411073027**	**27/09/2024**	15/11/2024	Dr. Smriti Mall	Department of Botany, DDUGU
21	A MANGANESE BASED WATER SPLITTING/ OXYGEN EVOLVING COMPOSITION AND ITS METHOD OF PREPARATION (**DDUGKPCRN031)**	**202411078833**	**17/10/2024**	29/11/2024	Dr. Ramwant Gupta	Department of Botany, DDUGU
22	A SYNERGISTIC BACTERIAL FORMULATION AND ITS METHOD OF PREPARATION ((**DDUGKPCRN033)**	202411079384	**18/10/2024**	06/12/2024	Ms. Priyanka Bharti Prof. Sarad Kumar Mishra	Department of Biotechnology, DDUGU
23	A SOLID BIOPOLYMER NANOCOMPOSITE ELECTROLYTE AND ITS METHOD OF PREPARATION (**DDUGKPCRN036)**	**202411088298**	**14/11/2024**	IN PROCESS	Km. Jyoti Rai Manindra Kumar Deepash Shekhar saini Prashant Shahi Upendra Kumar	Department of Physics, DDUGU Department of Applied Science, Indian Institute of information Technology, Allahabad Devghat, Jhalwa, Prayagraj
24	A METHOD OF PREPARING BOTANICAL EXTRACT FROM THE GREEN LEAVES OF *Ricinus communis* L. AND A FORMULATION THEREOF (**DDUGKPCRN035)**	**202411088297**	**14/11/2024**	IN PROCESS	Dr. Smriti Mall	Department of Botany, DDUGU
25	A POLYNUCLEAR SUPERALKALIS FOR CHEMICAL HYDROGEN STORAGE AND ITS METHOD OF PREPARATION (**DDUGKPCRN032)**	**202411097620**	**10/12/2024**	IN PROCESS	Ambrish Kumar Srivastava	Department of Physics, DDUGU

26	A METHOD OF PREPARING FUNGAL DIGLYCOSIDASE FOR THE TRANSFORMATION OF NARINGIN TO NARINGENIN AND NEOHESPERIDOSE (**DDUGKPCRN037)**	202511002854	**13/01/2025**	IN PROCESS	Ms. Shikha Singh Dr. Kamlesh Singh Yadav Dr. Pratibha Yadav	Department of Chemistry, DDUGU Center for Rural Development and Technology, Indian Institute of Technology Delhi,
27	A PROCESS FOR MICROBIAL PREPARATION OF NEOHESPERIDOSE AND ASSOCIATED AGLYCONS FROM CITRUS FRUIT PEELS AND OTHER SOURCES (**DDUGKPCRN038)**	202511002851	**13/01/2025**	IN PROCESS	Ms. Shikha Singh Dr. Kamlesh Singh Yadav Dr. Pratibha Yadav	Department of Chemistry, DDUGU Center for Rural Development and Technology, Indian Institute of Technology Delhi,
28	A PROCESS FOR EXTRACTING BULK POLYPHENOLS IN FINGER MILLET (**DDUGKPCRN039)**	202511002850	**13/01/2025**	IN PROCESS	Dr. Varsha Rani Prof. Dinesh Yadav	Department of Biotechnology, DDUGU
29	A METHOD OF REMOVING OF METHYLENE BLUE TOXIC DYE USING Monochoria hastata (L) SOLME (**DDUGKPCRN044)**	202511002852	**13/01/2025**	IN PROCESS	Dr. Smriti Mall	Department of Botany, DDUGU
30	A HAND HELD SYSTEM AND METHOD FOR ANALYZING CUSTOMER SATISFACTION**" (DDUGKPCRN049)**	202511002855	**13/01/2025**	IN PROCESS	Prof. Manish Kumar Srivastava Dr. Vipin Vihari Ram Tripathi	Department of Commerce, DDUGU School of Business, Galgotias University, Gautam Buddha Nagar, Uttar Pradesh
31	PROCESS FOR ISOLATION OF NOVEL TICK SALIVA ANTIGENS (RNP-1) FROM RHIPHICEPHALUS MICROPLUS **(DDUGKPCRN053)**	202511002856	**13/01/2025**	IN PROCESS	Prof. Ravi Kant Upadhyay Ms. Nidhi Yadav	Department of Zoology, DDUGU
32	PROCESS FOR POLYCLONAL ANTIBODIES AGAINST RHIPHICEPHALUS MICROPLUS SALIVA TOXIN ANTIGENS (ANTI-RNP-1 ANTIBODIES)	202511002858	**13/01/2025**	IN PROCESS	Prof. Ravi Kant Upadhyay Ms. Nidhi Yadav	Department of Zoology, DDUGU

	(DDUGKPCRN054)					
33	A METHOD OF ISOLATION AND PURIFICATION OF NOVEL ANTIGEN FROM BLACK SCORPION HETEROMETRUS FASTIGIOUSUS COUZIJN" **(DDUGKPCRN062)**	202511002857	**13/01/2025**	IN PROCESS	Prof. Ravi Kant Upadhyay Dr. Mukesh Kumar Chaubey	Department of Zoology, DDUGU
34	AN ANTISERUM AND ITS METHOD OF PREPARATION FOR NEUTRALIZATION OF BEE VENOM INDUCED TOXICITY **(DDUGKPCRN066)**	202511002859	**13/01/2025**	IN PROCESS	Prof. Ravi Kant Upadhyay MR. Shoeb Ahmad	Department of Zoology, DDUGU
35	A METHOD TO ENHANCE PHOTOSYNTHETIC ELECTRON TRANSPORT RATE IN FINGER MILLET AGAINST SALINITY AND DROUGHT	202511004968	**22/01/2025**	IN PROCESS	Ms. Jyoti Mani Tripathi Dr. Ramwant Gupta	Department of Botany, DDUGU
36	A METHOD OF ISOLATION OF VENOM TOXINS FROM WASP Ropalidia Marginata	202511004966	**22/01/2025**	IN PROCESS	Prof. Ravi Kant Upadhyay Ms. Simran Sharma	Department of Zoology, DDUGU
37	A LIQUID CRYSTAL-BASED BIOSENSOR AND ITS METHOD OF FABRICATION FOR VISUAL DETECTION AND QUANTIFICATION OF CHOLESTEROL IN HUMAN BLOOD SERU	202511004965	**22/01/2025**	IN PROCESS	Sachin Kumar Singh Vishal Singh Madeeha Rashid Satyabratt Pandey Garima Singh	Department of Chemistry, DDUGU
38	S-ADENOSYL DERIVATIVES AN INHIBITORS OF NON-STRUCTURAL PROTEINS OF JAPANESE ENCEPHALITIS VIRUS (JEV) AND ITS METHOD OF PREPARATION	202511004967	**22/01/2025**	IN PROCESS	Prof. Rakesh Kumar Tiwari Mr. Vinayak Pandey	Department of Physics, DDUGU

IPR CELL, DEEN DAYL UPADHYAYA GORAKHPUR UNIVERSITY, GORAKHPUR

The IPR cell was established in the University on 10th Jan 2019 and Initial financial support for the establishment of IPR cell was provided by Council of Science and Technology, U.P., Lucknow on 30th March 2019. Prof. Dinesh Yadav, Department of Biotechnology served as Nodal Officer from 10th Jan. 2019 to 21st Dec. 2023. Presently, Dr. Manindra Kumar, Assistant Professor, Department of Physics is serving as Nodal Officer since 22nd Dec. 2023. Some of the activity of IPR cell is highlighted below:

A Seven-day online lecture on "*Intellectual Property Rights (IPR) Issues*" was jointly organized by IPR Cell and UGC-HRDC Centre, Deen Dayal Upadhyaya Gorakhpur University, Gorakhpur from 25th Sept. 2020 to 1st Oct. 2020.

One day workshop "*Awareness workshop on Intellectual Property Rights (IPR)*" was jointly organized by Research and Development Cell and IPR cell, Deen Dayal Upadhyaya Gorakhpur University, Gorakhpur on 2nd March 2024, sponsored by Council of Science and Technology (CST), Uttar Pradesh.

One day workshop "*Intellectual Property Rights (IPR) Awareness Workshop*" is jointly organized by Research and Development Cell and IPR cell, Deen Dayal Upadhyaya Gorakhpur University, Gorakhpur on 30th Jan. 2025, sponsored by Council of Science and Technology (CST), Uttar Pradesh.

Lectures on IPR delivered by Experts:

Sl. No.	Topic	Invited Speaker/ Resource Person details	Title of Conference/ Workshop/ Seminar/FIP/ Refresher Course/Online/ Orientation Course	Date
1.	IPR: An overview	**Prof. H.S. Chawla** Dean PGS, Prof & Head (Retd), Department of Genetics & Plant Breeding, CEO, Intellectual Property Management Centre, G.B. Pant University of Agric. & Tech., Pantnagar, Uttarakhand	One day workshop "Intellectual Property Rights (IPR) Awareness Workshop" is jointly organized by Research and Development Cell and IPR cell, Deen Dayal Upadhyaya Gorakhpur University, Gorakhpur on 30th Jan. 2025, sponsored by Council of Science and Technology (CST), Uttar Pradesh.	30th Jan 2025
2.	Copyright and Publication issues	**Dr. Kanika Malik** Senior Principal Scientist, CSIR-National Institute of Science Communication and Policy Research Dr. K S Krishnan Marg, New Delhi – 110 012, India	One day workshop "Intellectual Property Rights (IPR) Awareness Workshop" is jointly organized by Research and Development Cell and IPR cell, Deen Dayal Upadhyaya Gorakhpur University, Gorakhpur on 30th Jan. 2025, sponsored by Council of Science and Technology (CST), Uttar Pradesh.	30th Jan 2025

3.	Geographical Indication tags in Uttar Pradesh: Pros and Cons	**Prof. R. C. Chaudhary** Padma Shree and Chairman, Participatory Rural Development Foundation (PRDF), Gorakhpur	One day workshop "Intellectual Property Rights (IPR) Awareness Workshop" is jointly organized by Research and Development Cell and IPR cell, Deen Dayal Upadhyaya Gorakhpur University, Gorakhpur on 30th Jan. 2025, sponsored by Council of Science and Technology (CST), Uttar Pradesh.	30th Jan 2025
4.	Path to patent protection: Overview steps from filing to grant	**Adv Ashish Sharma** Managing Partners of IP Nation, The Law Firm	One day workshop "Intellectual Property Rights (IPR) Awareness Workshop" is jointly organized by Research and Development Cell and IPR cell, Deen Dayal Upadhyaya Gorakhpur University, Gorakhpur on 30th Jan. 2025, sponsored by Council of Science and Technology (CST), Uttar Pradesh.	30th Jan 2025
5.	IPR driven research: An overview	**Prof. Dinesh Yadav** Department of Biotechnology, Deen Dayal Upadhyaya Gorakhpur University, Gorakhpur	One day workshop "Intellectual Property Rights (IPR) Awareness Workshop" is jointly organized by Research and Development Cell and IPR cell, Deen Dayal Upadhyaya Gorakhpur University, Gorakhpur on 30th Jan. 2025, sponsored by Council of Science and Technology (CST), Uttar Pradesh.	30th Jan 2025
6.	Intellectual Property Right (IPR) Driven Research: An Overview	**Prof. Dinesh Yadav** Department of Biotechnology, Deen Dayal Upadhyaya Gorakhpur University, Gorakhpur	Workshop on Intellectual Property Righs(IPR) organized by Siddharth University, Kapilvastu, Siddharthnagar, sponsored by Council of Science and Technology, Uttar Pradesh	19th Oct. 2024
7.	Intellectual Property Rights	**Prof. Dinesh Yadav** Department of Biotechnology, Deen Dayal Upadhyaya Gorakhpur University, Gorakhpur	Workshop on Intellectual Property Rights organized by Dr. Sudhanva Singh Netam Government College Malanjkhand Dist. Balaghat (M. P.), sponsored by Madhya Pradesh Higher Education Department.	23rd July 2024
8.	Intellectual Property Rights (IPR) Driven Research and its Relevance in Biotechnology: An Overview	**Prof. Dinesh Yadav** Department of Biotechnology, Deen Dayal Upadhyaya Gorakhpur University, Gorakhpur	FDP on Informative Teaching and Research Prospects in Biotechnology and Biosciences organized by Shri Ramswaroop memorial University, Lucknow (15th-20th July 2024)	19th July 2024
9.	Protection and management of IPR	**Dr. Sripathi Rao Kulkarni** Principal Scientist and Coordinator (IPRs and International Relations), CSIR-Central Drugh Research In stitute (CDRI), Lucknow	One-Day Awareness Workshop on Intellectual Property Rights (IPR), organized by Deen Dayal Upadhyaya Gorakhpur University, Gorakhpur, sponsored by Council of Science and Technology, Uttar Pradesh	2nd March 2024
10.	Introduction to Intellectual Property-Value of	**Dr. Shaleena Raizada** MD and CEO, Sanshadow Consultants Pvt. Ltd, New	One-Day Awareness Workshop on Intellectual Property Rights (IPR), organized by Deen Dayal Upadhyaya	2nd March 2024

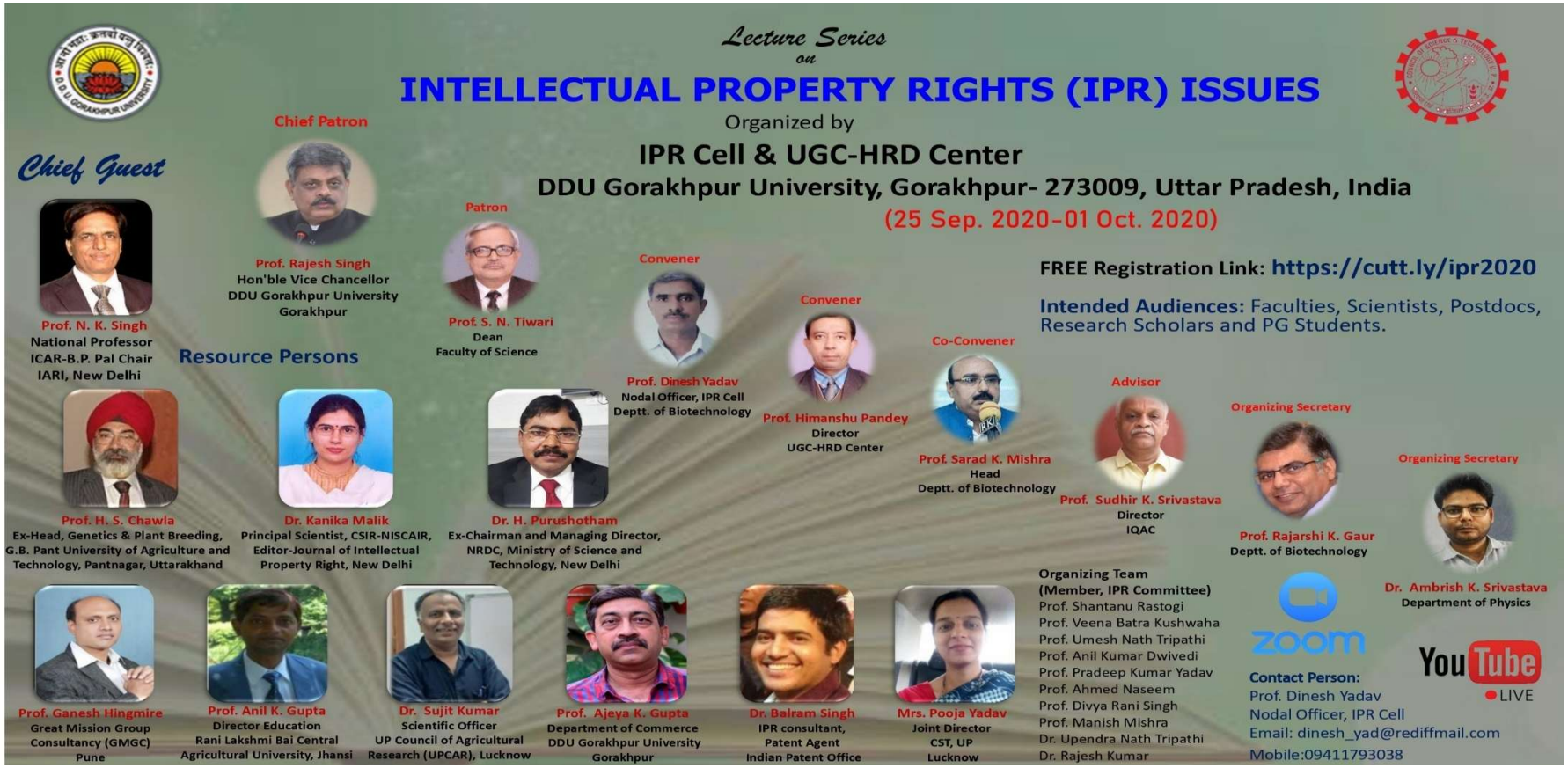
	IP for Teachers and Students	Delhi	Gorakhpur University, Gorakhpur, sponsored by Council of Science and Technology, Uttar Pradesh	
11.	Geographical Indications and Its Significance in Uttar Pradesh	**Prof. R. C. Chaudhary** Padma Shree and Chairman, PRDF, Gorakhpur	One-Day Awareness Workshop on Intellectual Property Rights (IPR), organized by Deen Dayal Upadhyaya Gorakhpur University, Gorakhpur, sponsored by Council of Science and Technology, Uttar Pradesh	2nd March 2024
12.	Potential of Patents in Biotechnology Research	**Prof. Dinesh Yadav** Department of Biotechnology, Deen Dayal Upadhyaya Gorakhpur University, Gorakhpur	One-Day Awareness Workshop on Intellectual Property Rights (IPR), organized by Deen Dayal Upadhyaya Gorakhpur University, Gorakhpur, sponsored by Council of Science and Technology, Uttar Pradesh	2nd March 2024
13.	Intellectual Property Rights and its relevance: An overview	**Prof. Dinesh Yadav** Department of Biotechnology, Deen Dayal Upadhyaya Gorakhpur University, Gorakhpur	7th Faculty Induction Programme (FIP) organized by UGC-Human Resource Development Centre and Department of Commerce, D.D.U. Gorakhpur University, Gorakhpur (6th Jan 2024 to 4th Feb. 2024)	18th Jan. 2024
14.	Research, Innovations and Intellectual Property Rights: An Overview	**Prof. Dinesh Yadav** Department of Biotechnology, Deen Dayal Upadhyaya Gorakhpur University, Gorakhpur	National Conference on "Innovation and Entrepreneurship: A Magic Bullet to Industrial Revolution Through Advancement in Biological, Physical and Mathematical Sciences" organized by St. Andrew's College, Gorakhpur	31st Oct. 2023
15.	Research, Innovations and IPR in NEP 2020: An update	**Prof. Dinesh Yadav** Department of Biotechnology, Deen Dayal Upadhyaya Gorakhpur University, Gorakhpur	6th Faculty Induction Programme (FIP) organized by UGC-Human Resource Development Centre and Department of Commerce, D.D.U. Gorakhpur University, Gorakhpur (26th Aug-24th Sept. 2023)	4th Sept. 2023
16.	Designing a dynamic IP system: sharing practices & developing strategies	**Prof. Dinesh Yadav** Department of Biotechnology, Deen Dayal Upadhyaya Gorakhpur University, Gorakhpur	8th Annual National Conference on Intellectual Property Rights: Scope in Nursing organized by KGMU College of Nursing, King George's Medical University, Lucknow 11-12th April 2023	11th April 2023
17.	Intellectual Property Rights (IPR) driven Research: An Overview	**Prof. Dinesh Yadav** Department of Biotechnology, Deen Dayal Upadhyaya Gorakhpur University, Gorakhpur	UGC-HRDC sponsored 7th Online Interdisciplinary Refresher Course in Information and Communication Technology (ICT) organized by HRDC-DDU Gorakhpur University, Gorakhpur (28th Jan. to 10th Feb.2023) on	31st Jan. 2023
18.	Biotechnology and IPR issue: An overview	**Prof. Dinesh Yadav** Department of Biotechnology, Deen Dayal Upadhyaya Gorakhpur University, Gorakhpur	*Vigyan Utsav: Azadi Ka Amrit Mahotsav: Intellectual property Rights* (ONLINE) sponsored by the Department of Science and Technology, Govt. of India and organized by Council of Science and Technology, Uttar Pradesh	23rd August 2022

19.	Intellectual Property Rights (IPR) driven Research in Life Science: An Overview"	**Prof. Dinesh Yadav** Department of Biotechnology, Deen Dayal Upadhyaya Gorakhpur University, Gorakhpur	UGC-HRDC sponsored 4th Online Refresher Course in Life Science organized by HRDC-DDU Gorakhpur University, Gorakhpur (23rd July to 5th August 2022)	2nd August 2022
20.	Intellectual Property Rights (IPR) for Protecting Innovations: An Overview"	**Prof. Dinesh Yadav** Department of Biotechnology, Deen Dayal Upadhyaya Gorakhpur University, Gorakhpur	"in UGC-HRDC sponsored 3rd Faculty Induction Programme (FIP) organized by HRDC-DDU Gorakhpur University, Gorakhpur (5th Jan. to 4th Feb. 2022)	10th Jan. 2022
21.	Intellectual Property Rights: An overview"	**Prof. Dinesh Yadav** Department of Biotechnology, Deen Dayal Upadhyaya Gorakhpur University, Gorakhpur	"in Value Added Course in Biotechnology (Online)-Biotechnology for Human Welfare organized by Department of Biotechnology DDU Gorakhpur University, Gorakhpur (17th Dec.-31st Dec. 2021)	29h Dec. 2021
22.	IPR in Context with Current Trends in Higher Education: An Overview	**Prof. Dinesh Yadav** Department of Biotechnology, Deen Dayal Upadhyaya Gorakhpur University, Gorakhpur	UGC-HRDC sponsored 2nd Faculty Induction Programme (FIP) organized by HRDC-DDU Gorakhpur University, Gorakhpur25th Nov. to 24th Dec. 2021	26th Nov. 2021
23.	Relevance of IPR for Science, Technology and Innovations: An overview	**Prof. Dinesh Yadav** Department of Biotechnology, Deen Dayal Upadhyaya Gorakhpur University, Gorakhpur	National Workshop on Innovation and Intellectual Property Management in India (8th-10th Oct. 2021) organized by IPR cell, Veer Bahadur Singh Purvanchal University, Jaunpur	28th Oct. 2021
24.	Intellectual Property Rights (IPR): An Element for Promoting Innovations"	**Prof. Dinesh Yadav** Department of Biotechnology, Deen Dayal Upadhyaya Gorakhpur University, Gorakhpur	UGC-HRDC sponsored Multidisciplinary Refresher Course in Information Communication Technology (ICT) organized by HRDC-DDU Gorakhpur University, Gorakhpur (27th Sept-10th Oct. 2021)	28th Sept. 2021
25.	Intellectual Property Rights in Context with Medicinal Plants: An Overview	**Prof. Dinesh Yadav** Department of Biotechnology, Deen Dayal Upadhyaya Gorakhpur University, Gorakhpur	National Conference on "Biodiversity, Medicinal Plants, Drug Discovery & Sustainable Utilisation" (7-8th Sept. 2021) organized by St. Andrew's College, Gorakhpur	7th Sept. 2021
26.	Intellectual Property Rights (IPR): New Dimensions and Applications	**Prof. Dinesh Yadav** Department of Biotechnology, Deen Dayal Upadhyaya Gorakhpur University, Gorakhpur	National E-Conference on "Traditional Medicine and Ethnobotany: Exploring New Horizons in traditional and Alternative Medicine" (19-20th July 2021) organized by St. Andrew's College, Gorakhpur	20th July 2021
27.	IPR: Drivers of Innovation	**Dr. Saurabh Yadav,** Hemwati Nandan Bahuguna Garhwal University	7Day Workshop ON "Research Methodology & Innovations in Life Sciences" (25th June-1st July), 202, jointly organized by the Department of Biotechnology, IPR Cell and Centre for Genomics and	26th June 2021

			Bioinformatics, DDU Gorakhpur University, Gorakhpur	
28.	Intellectual property Rights: Bootcamp and Contemporary issues	**Dr. Sujit Kumar**, Scientific Officer, Nodal officer IPR cell, UP Council of Agricultural Research (UPCAR) Lucknow	7Day Workshop ON "Research Methodology & Innovations in Life Sciences" (25th June-1st July), 202, jointly organized by the Department of Biotechnology, IPR Cell and Centre for Genomics and Bioinformatics, DDU Gorakhpur University, Gorakhpur	25th June 2021
29.	Copyright and publications issues: An overview	**Dr. Kanika Malik**, Principal Scientist, Editor: Journal of Intellectual property Right; Applied Innovative Research Journal, CSIR-NISCAIR, New Delhi	One Week Professional Development Programme forFaculties in Higher Education: New Perspectives of Teaching, Learning and Research June 23-29, 2021, jointly organized by HRDC and ICT cell, DDU Gorakhpur University, Gorakhpur	25th June 2021
30.	National Research Development Corporation: in service of triple helix of innovations, academia, industry and government	**Dr. Sanjeeva K Majumdar Manager, NRDC New Delhi**	One Week Professional Development Programme forFaculties in Higher Education: New Perspectives of Teaching, Learning and Research June 23-29, 2021, jointly organized by HRDC and ICT cell, DDU Gorakhpur University, Gorakhpur	25th June 2021
31.	Intellectual Property Rights: An Overview	**Ms. Sangeeta Nagar** Scientist-F PFC, TIFAC DST, New Delhi	One Week Professional Development Programme forFaculties in Higher Education: New Perspectives of Teaching, Learning and Research June 23-29, 2021, jointly organized by HRDC and ICT cell, DDU Gorakhpur University, Gorakhpur	24th June 2021
32.	Accessing patent information and insights into patent searching tools	**Ms. Sangeeta Nagar** Scientist-F PFC, TIFAC DST, New Delhi	One Week Professional Development Programme for Faculties in Higher Education: New Perspectives of Teaching, Learning, and Research June 23-29, 2021, jointly organized by HRDC and ICT cell, DDU Gorakhpur University, Gorakhpur	24th June 2021
33.	Intellectual Property Rights: An Overview	**Prof. Dinesh Yadav** Department of Biotechnology, Deen Dayal Upadhyaya Gorakhpur University, Gorakhpur	SEVEN-day online workshop on "Research methodology for Life Sciences" organized by Department of Zoology, DDU Gorakhpur University, Gorakhpur (23rd - 29th June 2021)	23rd June 2021
34.	Intellectual Property Rights: Relevance, Present Status and Future Prospects	**Prof. Dinesh Yadav** Department of Biotechnology, Deen Dayal Upadhyaya Gorakhpur University, Gorakhpur	One Week Workshop on "Traditional Medicine, IPR, Sustainability and Advances in Life Sciences Towards Innovation and Startups" organized by St. Andrew's College, Gorakhpur (15th -21st Dec. 2020)	21st Dec. 2020

35.	Important of IPR: Indian Perspectives	**Prof. Ganesh Hingmire**, Founder & Chairman, GMGC PUNE, National IP Award Winner 2015& 2016	Online Lecture Series on Intellectual Property Rights (IPR) Issues 25th Sep.-01st Oct. 2020 organized by IPR cell, D.D.U Gorakhpur University, Gorakhpur (25th Sept-1st Oct. 2020)	25th Sept. 2020
36.	Copyright and Publication Issues	**Dr. Kanika Malik**, Principal Scientist, Editor: Journal of Intellectual property Right; Applied Innovative Research Journal, CSIR-NISCAIR, New Delhi	Online Lecture Series on Intellectual Property Rights (IPR) Issues25th Sep.-01st Oct. 2020 organized by IPR cell, D.D.U Gorakhpur University, Gorakhpur (25th Sept-1st Oct. 2020)	26th Sept. 2020
37.	Innovation and IPRs in New Education Policy 2020	**Dr. H. Purushottam,** Ex-Chairman & Managing Director, NRDC (National Research Development Corporation), Ministry of Science & Technology, Govt. of India, New Delhi	Online Lecture Series on Intellectual Property Rights (IPR) Issues 25th Sep.-01st Oct. 2020 organized by IPR cell, D.D.U Gorakhpur University, Gorakhpur (25th Sept-1st Oct. 2020)	26th Sept. 2020
38.	Provision of Compulsory Licensing -	**Dr. Sujit Kumar**, Scientific Officer, Nodal officer IPR cell, UP Council of Agricultural Research (UPCAR) Lucknow	Online Lecture Series on Intellectual Property Rights (IPR) Issues 25th Sep.-01st Oct. 2020 organized by IPR cell, D.D.U Gorakhpur University, Gorakhpur (25th Sept-1st Oct. 2020)	27th Sept. 2020
39.	Protection on Plant varieties and farmer rights	**Prof. H.S. Chawla,** Former Dean Post Graduate Studies, Former Professor & Head, Deptt of Genetics & Plant Breeding, G.B. Pant University of Agriculture & Technology, Pantnagar, Uttarakhand	Online Lecture Series ON Intellectual Property Rights (IPR) Issues25th Sep.-01st Oct. 2020 organized by IPR cell, D.D.U Gorakhpur University, Gorakhpur (25th Sept-1st Oct. 2020)	28th Sept. 2020
40.	New Dimension for fetching Intellectual Property Right through Nutri-Innovation to Development of Nutri-Ayur products	**Prof. Anil Kumar**, Founder Director Education, Rani Lakshmi Bai Central Agriculture University, Jhansi (U.P.)	Online Lecture Series ON Intellectual Property Rights (IPR) Issues25th Sep.-01st Oct. 2020 organized by IPR cell, D.D.U Gorakhpur University, Gorakhpur (25th Sept-1st Oct. 2020)	29th Sept. 2020
41.	Patent Filing and Prosecution in India	**Dr. Balram Singh,** IPR consultant/Patent agent, Indian Patent Office, Patent Minder IP Associates.	Online Lecture Series ON Intellectual Property Rights (IPR) Issues25th Sep.-01st Oct. 2020 organized by IPR cell, D.D.U Gorakhpur University, Gorakhpur (25th Sept-1st Oct. 2020)	30th Sept. 2020
42.	Trademark and Trade Secret Rights Protection in National and International Arena	**Prof. Ajeya Kumar Gupta**, Department of Commerce, DDU Gorakhpur University, Gorakhpur	Online Lecture Series ON Intellectual Property Rights (IPR) Issues25th Sep.-01st Oct. 2020 organized by IPR cell, D.D.U Gorakhpur University, Gorakhpur (25th Sept-1st Oct. 2020)	1st Oct. 2020

IPR WORKSHOP (25 Sep 2020-01 Oct 2020)



IPR WORKSHOP (2nd March 2024)

(IPR WORKSHOP 30th Jan 2025)

INTELLECTUAL PROPERTY RIGHTS (IPR) AWARENESS WORKSHOP

Chief Patron

PROF. POONAM TANDON
Hon'ble Vice-Chancellor

Sponsored by
Council of Science and Technology, Uttar Pradesh

Convener

PROF. DINESH YADAV
Director, Research and Development Cell

OUR SPEAKERS

PROF. H.S CHAWLA
Nodal Officer and CEO, Intellectual Property Management Centre, GBPUAT, Pantnagar

DR. KANIKA MALIK
Senior Principal Scientist (NIScPR), New Delhi

PROF. R.C. CHAUDHARY
(Padma Shri)
Chairman, Participatory Rural Development Foundation (PRDF)

ADV. ASHISH SHARMA
Managing Partnersof IP NATION, The Law Firm

ORGANIZING COMMITTEE

Patron
Prof. Shantanu Rastogi
Pro-ViceChancellor
D.D.U. Gorakhpur University, Gorakhpur
Co-Convener
Prof. Rajarshi Kumar Gaur
HoD, Dept. of Biotechnology
and
Prof. Umesh Yadava
Coordinator (IPR, Legal and Ethical Matters
Organizing Secretary
Dr. Manindra Kumar
Nodal Officer, IPR Cell
D.D.U. Gorakhpur University, Gorakhpur
Advisors
Prof. Manish Kumar Srivastava, Coordinator, Committee-I, RDC
Dr. Ramwant Gupta, Coordinator, Committee-III, RDC
Dr. Satya Pal Singh, Coordinator, Committee-IV, RDC

30 JAN, 2025
10:00 am

VENUE

CONFERENCE HALL
DEPARTMENT OF BIOTECHNOLOGY
DEEN DAYAL UPADHYAYA, GORAKHPUR UNIVERSITY
GORAKHPUR-273009, UTTAR PRADESH
INDIA

BRIEF CV OF SPEAKER 1

Prof. H.S Chawla

Professor & Head Genetics & Plant Breeding (Retired); Dean Post Graduate Studies
Nodal Officer and CEO, Intellectual Property Management Centre.
He did M.Sc. and Ph.D. in Genetics.
He joined Pantnagar in 1979 and retired in 2020. He has 40 years of experience in teaching, research and extension.

He did two Post-Docs:

1985-87-DAAD Fellowship to Germany; 1993-95- DBT Overseas Associateship to Canada

He was deputed as resource person at Pakistan and Sri Lanka by Asian Productivity Organization Japan and consultant on IPRs at Bangla Desh. Besides he has visited many countries in his professional career.

He has published 13 books and 3 manuals on Genetics & Biotechnology and 5 books on IPRs in Hindi and English languages. **Author of a text book on "Introduction to Plant Biotechnology", 4th edition has been launched in 2024. The book has been translated in Chinese and Persian languages also.**

Author of a text book on "Introduction to Intellectual Property Rights" released in 2016.

He has to his credit 100+ Research papers on IPR, Biotechnology, Genetics & Breeding and DUS aspects in international, national reputed publications, journals- Papers published in Journals with (NAAS score): J Intellectual Property Rights (6.6), Plant Cell Rep (7.7), In Vitro Cell. Dev. Biol. – Plant (7.5), Biologia Plantarum (7.6), Plant Cell Tiss. Org. Cul (7.5), J. Hort. Sci. & Biotechnology (U.K.), (7.0), J. of Genetics (7.5), Plant Breed (7.5), Current Science (7.3), Ind. J. Biotech (6.8), Ind. J. Genetics & Plant Breeding (6.6), Ind. J. Agric. Sci. (6.6), etc.
He edited – WTO-IPR Bulletin, 6 issues published annually, 2003- 2016

Nomination in Government committees: Bureau of Indian Standards committee, Institutional Biosafety committee by DBT, Govt. of India for other Universities/ ICAR Institutes of India (CSHAU, Hisar, BAU, Sabour, DRMR, Bharatpur), PPV&FR Authority, DST, Biodiversity Authority of India, etc.

Professional societies

- Editorial board member of J. Intellectual Property Rights, published by NISCAIR, Council of Scientific and Industrial Research, Delhi
- Executive member, editorial board member and reviewer of large number of societies and Journals
- Fellow of Indian Soc. of Genetics & Plant Breeding
- Elected life member of Plant Tissue Culture Association (India).Member of more than 10 professional societies

LECTURE 1: IPR: AN OVERVIEW

H.S. Chawla
Dean PGS
Prof & Head (Retd)
Department of Genetics & Plant Breeding
CEO, Intellectual Property Management Centre
G.B. Pant University of Agric. & Tech., Pantnagar, Uttarakhand-263145

The WTO was established on 1st January 1995 and is responsible for making and enforcing rules for trade between nations. WTO marks a major change in global trade rules. As an organization, it replaces the General Agreement on Tariffs and Trades (GATT), which had been in existence since 1947. The 8th Round of Multilateral Trade Negotiations under GATT, which started in Uruguay in 1986, was concluded in 1994, leading to the creation of WTO as the new permanent international trade organization. The role of WTO is much more extensive than that of GATT, which dealt with trade in goods. Apart from goods, the two other broad areas that WTO covers are services and intellectual property, which previously belonged to the domestic domain. Accordingly, WTO administers not only the Multilateral Trade Agreements (MTAs) in goods but also the General Agreement on Trade in Services (GATS) and the Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPs), which came into existence with WTO. All the agreements annexed to the Agreement establishing the WTO were signed as part of a package deal. Member countries did not have the option of choosing some and rejecting others. Another important difference with the erstwhile GATT is that WTO has a stronger compliance mechanism than the GATT. A member's failure to meet the obligations can invoke retaliation across agreements and sectors (Chawla, 2007).

As one of the WTO agreements, TRIPS is binding on all member countries of WTO. TRIPs aims at establishing strong minimum standards for intellectual property rights (IPRs). IPRs can be defined as the rights given to people over the creation of their minds. They usually give the creator an exclusive right over the use of his/her creation for a certain period of time. Intellectual property includes copyrights, trademarks, geographical indications, industrial designs, integrated circuits and trade secrets (Chawla, 2016). The protection of IPRs is binding and legally enforceable.

IPRs have been created to ensure protection against unfair trade practice. Owners of IP are granted protection by a state and/or country under varying conditions and periods of time. This protection includes the right to: (i) defend their rights to the property they have created; (ii) prevent others from taking advantage of their ingenuity; (iii) encourage their continuing innovativeness and creativity; and (iv) assure the world a flow of useful, informative and intellectual works.

1.1.Patents

A patent is a government granted exclusive right to an inventor to prevent others from practicing i.e. making, using or selling the invention. A patent is a personal property, which can be licensed or sold like any other property. The purpose of a patent is to encourage and develop new innovations. The Patent Law recognizes the exclusive right of a patentee to gain commercial advantage out of his invention. There are three criteria to issue a patent for the innovation (Chawla, 2016).

Novelty: The inventor must establish that the invention is new or novel. The novelty requirement refers to the prior existence of an invention. If an invention is identical to an already patented invention, the novelty requirement is not met, so a patent cannot be issued.
Inventiveness (Non-obviousness): It is an invention and not merely discovery. It is non obvious to one skilled in

the field. The non-obvious requirement refers to the level of difficulty required to invent the technology. If an invention is so obvious that anyone having an ordinary skill would have thought of it, then it does not meet this requirement.
Usefulness (Industrial application): It has a utility or is useful for the society. The useful requirement refers to the practical use of invention. If an invention provides a product that is required or needed in some manner, then it meets this requirement

In the patent adequate disclosure should be made so that others can also work on it. It should have the features: i) be a written description; ii) enables other persons to follow; iii) adequate and iv) deposit mechanism. The present law, Patents Act 1970, amendment 2005 is effective from January 1, 2005. Product patents on all items including food, agro-chemical and pharmaceuticals have also been allowed making the Patents Act fully TRIPs compliant.

The patent system was developed as a means to reward inventions which would be useful to the society. However, in order to ensure the interests of society, as per the Indian Patents Act, certain things have been excluded from the purview of patentability. The sections relevant to plant material and agriculture which are excluded from patentability are:

Section 3(h): a method of agriculture and horticulture.
Section 3(i): any process for medicinal, surgical, curative, prophylactic (diagnostic therapeutic) or other treatment of human beings or any process for a similar treatment of animals to render them free of disease or to increase their economic value or that of their products.
Section 3(j): plants and animals in whole or any part thereof other than microorganisms but including seeds, varieties and species and essentially biological processes for production or propagation of plants and animals.
Section 3(p): an invention which in effect, is traditional knowledge or which is an aggregation or duplication of known properties of traditionally known component or components.
Further the mere discovery of any new property or new use for a known substance or the mere use of a known process, machine or apparatus unless such known process results in a new product or employ at least one new reactant is not patentable. Also a patent claim for a substance obtained by merely mixing ingredients resulting only in the aggregation of the properties of the components is not a patentable invention [Section 3(d)]. However, in India, method for rendering plants free of diseases or to increase their economic value or that of their products can be claimed for patent protection.

Microorganisms *per se* can be claimed for protection provided they are not mere discovery of organisms. It is mandatory to deposit the biological material in International Depositary Authority (IDA). In India, Institute of Microbial Technology (IMTECH), Chandigarh is a recognized international depositary for some category of micro-organisms. If an applicant mentions a biological material in the patent specification then disclosure requirements prescribed for biological materials have been notified in the list of the Central Government or for indicating its source and geographical origin [Section: 10,4(d)].

The purpose of a patent is to promote the progress of science and useful arts. The patent law promotes this progress by giving the inventor the right of exclusion. In exchange for this right to exclude others, the inventor must disclose all details describing the invention, so that when the patent period expires, the public may have the opportunity to develop and profit from the use of invention. A patent is enforced in the country which issues it, meaning thereby territorial in nature. For each country a separate application is to be filed in that country where protection is sought.

1.2. Plant Variety Protection in India

As stated India is signatory to WTO agreements and it has to abide by the TRIPS regulations. As per article 27.3(b) of the TRIPS which demand that member countries should protect their plant varieties either by patent, or an effective system of *sui generis* protection, or a combination of these two. In this context India chose a *sui generis* system for protection of plant varieties. An Act named as Protection of Plant Varieties and Farmers' Rights (PPV&FR) Act 2001 has been passed and Rules have been framed. PPV&FR Authority has been constituted with its Head Office located at Delhi. The PPV&FR Act is TRIPS compliant and compatible with UPOV system of plant variety protection (Chawla, 2005).

1.2.1 The PPV&FR Act 2001 provides protection to following types of plant varieties:

Newly bred varieties.
Extant varieties – The varieties which were released under Indian Seeds Act, 1966 and have not completed 15 years as on the date of application for their protection.
Farmer's varieties – The varieties which have been traditionally cultivated, including landraces and their wild relatives which are in common knowledge, as well as those evolved by farmers.
Essentially derived varieties.
Transgenic varieties.

To qualify for registration under the act, a new variety has to conform to the criteria of novelty (N), distinctiveness (D), uniformity (U) and stability (S). Besides, a denomination has to be given for the registration of variety. Denomination refers to the label or title of the variety. It is the denomination that is registered. For extant and farmers' varieties which are in public domain the DUS features will be considered while the novelty feature will not be taken because these varieties are not new and are in public domain. In this act a special clause has been put which states that any variety with terminator gene sequences will not be registered. Thus any transgenic material with genetic use restriction technology (GURT) sequences will not be registered.

The Act had laid down the norms for registration of plant varieties, fee structure, provisions of opposition, DUS testing of material, etc. Intellectual Property Management Centre of G.B. Pant University of Agric. & Tech., Pantnagar has taken the lead in India by registering first three farmers' varieties of rice namely Tilakchandan, Hansraj and Indrasan on behalf of the farmers and for the benefit of farmers.

Once the variety has been tested for its features then the Registrar of the Authority will issue the certificate of registration. It shall have the validity of nine years initially in case of trees and vines with renewal up to a period of 18 years. For other crops certificate of registration will be issued for six years initially with renewal up to 15 years. In case of extant varieties the validity period is 15 years from the date of notification of that variety by the Central Government under section 5 of the Seeds Act 1966.

1.3. Copyright

Copyright protects only the form of expression of ideas, not the ideas themselves. The creativity protected by copyright law is creativity in the choice and arrangement of words, musical notes, colors, shapes and so on. Copyright was created to provide protection to composers, writers, authors and artists to protect their original works against those who copy; those who take and use the form in which the original work was expressed by the author. Computer software/program is another mode of expression. A computer program is produced by one or more human authors but, in its final mode or form of expression it can be understood directly only by a machine (the computer) not by human readers. In India, The Copyright Act 1957 as amended in 1994 is in force. The Copyright protection of computer software is under the Information Technology Act, 2000.

1.4. Trademark

A trademark is a symbol that helps to distinguish one product or company from another. Symbols help the consumer identify products and/or a company and include designs, shapes, numbers, slogan, smell, sound or anything that helps the consumer to identify the products and/or companies. In research, laboratory equipments bear trademarks that are well known to workers in their field. Trademark law, unlike patent or copyright law, confers a perpetual right. So long as the trademark continues to identify a single source, anyone who uses a very similar mark may be liable for trademark infringement. The perpetual right of trademarks depends on the use. The basic idea of 'use it or lose it' is essential to preserving trademark rights. A company cannot register a trademark and then not use it. The product for which the trademark was registered must be used commercially.

Trademark rights are so important that multinational companies spend large amount of money to maintain their respective trademarks around the world. Every country has different trademark laws. However, there are agreements to ensure that a company's trademark in one country is protected in another country. India has a Trade Marks Act, 1999. In this category there are certification marks like AGMARK, FPO, ISO etc.; service marks viz. LIC, SBI, PNB, etc. and collective marks viz. INTUC, AA, etc.

1.5. Geographical indications

The geographical indications (GI) for the purpose of TRIPs agreement have been described as indications which could be used to recognize that a good has originated in a particular territory, region or locality, where the given quality, reputation or other characteristic of the good are essentially attributable to its geographical origin. This is another way of protecting a country's biodiversity assets which are uniquely endemic to certain geographical locations in the country and has been accepted in terms of quality and traits to that geographical region is through appropriate national legislations. GI can be used, when protected in legal terms, to prevent others from misleading the public or creating unfair competition in trade for the goods that have their origin from a particular territory, region or locality. In the TRIPs there is an important provision that if someone uses a GI as a trademark and it misleads the public as to the true place of origin, then registration of trademark is refused or invalidated *ex officio*.

India enacted The Geographical Indication of Goods (Registration and Protection) Act, 1999. Prior to that there was no specific law governing GIs of any agricultural, natural or manufactured goods including food stuff. India being party to the TRIPs agreement, was required to extend protection of GI for goods imported from other countries, which provide for such protection. A law to the effect in the country was necessary because other member countries would be obliged to give protection to the goods only if there are laws to protect the goods in the country of origin. GI as per Indian Act means an indication in relation to goods, which identifies such goods (agricultural goods, natural goods or manufactured goods or any goods of handicrafts or of industry, including food stuff) as originating, or manufactured in the territory of country, or a region or locality in that territory as the case may be, where a given quality, reputation or other characteristics of such goods is essentially attributable to its geographical origin. GI is not registered on the individuals name as in the case of patent or trademark but it is given to any association of persons, producers, organization or authority established by or under the law. The applicants must represent the interest of the producers and their names should be entered in the register of GI as registered proprietor for the GI applied for. A producer includes any person who trades or deals in such production, exploitation, making or manufacturing as the case may be of the goods. The registration of a GI is valid for 10 years which can be further renewed for 10 years by repayment of fees.

A registered GI can provide the following benefits: i) It confers legal protection to facilitate an action for infringement in India; ii) It prevents unauthorized use of a registered GI by others; iii) It boosts export of Indian GIs by providing legal protection; iv) It promotes economic prosperity of producers; v) It enables seeking legal protection in other WTO member countries. Since GIs are inherently collectively owned, they act as an excellent

tool for regional or community-based economic development. Any region that has a specialty associated with it, where a quality link exists or can be established between the product and the region, should consider the advantages of using a GI to distinguish its product from lower-quality and non-regional competitors.

Different types of goods including handicrafts (Channapatna toys, Mysore rosewood inlay), textiles (Pochampally Ikat, Chanderi saree, Kota Doria, Mysore silk, Kullu shawls), agricultural (Darjeeling tea, Coorg orange, Mysore betel leaf, Nanjanagud banana, Palakkadan Matta rice) have already been registered.

1.6. Trade Secret

A trade secret is any information that gives a company a competitive edge over competitors and which the company maintains as secret and away from public knowledge. Trade secrets often include private proprietary information. For example, the Coca Cola Company brand syrup formula, Polaroid company instant film chemical formula, etc. The nature or the identity of a product is maintained secret for as long as the company can keep this information from becoming public knowledge. Trade secret rights are mainly kept and enforced through agreements between employers and employees. These are non-patented. Trade secrets have an unlimited term, which may be perpetual. The term is as long as it takes the public or a competitor to determine how to make the product and to ascertain the nature and identity of the trade secret. Disclosure of a trade secret and its unauthorized use can be punished by the court and the owner may be allowed compensation. There is no separate law or Act as these are dealt under the civil law.

1.7. Designs

The expression 'Designs' means only the feature of shape, configuration, pattern or ornament applied to any article by any industrial process or means whether manual, mechanical or chemical, separate or combined, which in the finished article appeal to end user and are judged solely by the eye. Design means the features of shape etc. applied to an article and not the article itself. The features are conceived in the author's intellect. He gives those ideas conceived by him a material (visual) form as a pictorial illustration or as a specimen, prototype or model. Designs Act, 2000 is in force in India, in which the features are protected as design by registration. The act confers exclusive right to apply a design to any article in any class in which the design is registered. To qualify for registration the design should be new or original and it must not have been previously published in India.

1.8. Layout designs of integrated circuits

Integrated circuit topographies are the 3D configurations of electronic circuits embodied in integrated circuits, products or layout designs. Today they are at the heart of modern information, communication, entertainment, manufacturing, medical and space technologies. In India layout designs of the Integrated Circuits are covered under the Semiconductor Integrated Circuits Layout Design Act, 2000.

BRIEF CV OF SPEAKER 2

Dr. Kanika Malik

Senior Principal Scientist
Editor, Journal of Intellectual Property Rights
Editor, Indian Journal of Pure & Applied Physics
CSIR-National Institute of Science Communication and Policy Research (NIScPR)
Dr. K S Krishnan Marg, New Delhi-110012
Ph: 011-25843189
Email: km@niscpr.res.in; jipr@niscpr.res.in; ijpap@niscpr.res.in

Dr. Kanika Malik received her B.Sc. (Hons) in Botany from Delhi University and M.Sc.and PhD in Biotechnology.To her credit passed DL101 - WIPO academy course with distinction (92% marks).

She has 27 years of professional experience; out of which 20 years in the field of Intellectual Property Rights. Dr. Malik has been associated with ICAR for her research work in **NRCPB,** IARI and **NBPGR**, Pusa Campus, New Delhi.

Served as **Examiner of Patents and Designs** in Delhi Branch Patent Office with the Ministry of Commerce and Industries, Govt. of India. She was actively involved in the amendment of Indian Patent Act, 2002.

Since August 2006, she has been with the **Council of Scientific & Industrial Research**. She is currently a Senior Principal Scientist at CSIR-National Institute of Science Communication and Policy Research (NIScPR). She is also a regular faculty for Short-Term Courses on *Intellectual Property Rights*, conducted at CSIR. She has organised various programmes in the field of IPR as coordinator.

Dr. Kanika Malik is also Convener of **Indian Women Scientist's Association** (IWSA), Honorary Member of **Indian Institute of Management, Ahmadabad** (IIMA), **Administrative Staff College of India**, (ASCI), Hyderabad and **Centre for Organisation Development** (COD) Hyderabad.

During her scientific career, Dr. Malik has been awarded with many awards like, **Distinguished Scientist Award**, **Young Scientist Award**, **Science Communication Award**, **Young Scientific Fellow Award**, etc.

She has also been a member of a number of national and international scientific committees. Delivered invited talks, presented papers and chaired the technical sessions in various conferences. Dr. Malik has published a number of research papers in International SCI journals.

She has guided many students for their PG programs. She is regular faculty of **PhD Credit Course of AcSIR** in "Intellectual Property Rights". She is also Guest Faculty in "**Certificate Course on Patent Drafting**" in Law Department of Delhi University.

Currently, Dr. Kanika Malik is the Editor of Journal of Intellectual Property Rights (JIPR) and Indian Journal of Pure & Applied Physics (IJPAP) published from CSIR-NIScPR and also handling the HRD, Outreach and Jigyasa Program of CSIR-NIScPR.

LECTURE 2: COPYRIGHT AND PUBLICATION ISSUES

Dr. Kanika Malik

Senior Principal Scientist, CSIR-National Institute of Science Communication and Policy Research Dr. K S Krishnan Marg, New Delhi – 110 012, India

Email: km@niscpr.res.in, jipr@niscpr.res.in

Abstract

The basic idea behind protection under copyright is the premise that innovations require incentives. Hence, in order to provide the protection to the intellectual creation, legal sanctions are required. Such legal provisions in the interest of the creators generated the copyright. Thus, copyright is a form of intellectual property protection which is granted by the law to the creators of original works of authorship such as, literary works (including computer programs, tables and compilations including computer databases which may be expressed in words, codes, schemes or in any other form, including a machine readable medium), dramatic, musical and artistic works, cinematographic films and sound recordings. The protection is only for the expressions of ideas rather than the ideas themselves. The right or the monopoly here refers to a bundle of exclusive rights vested in the owner of copyright by virtue of certain sections of the Act. These rights can be exercised only by the owner of copyright or by any other person who is duly licensed in this regard. Copyright protection commences the moment a work is created, and its registration is optional. Besides protecting creative potential of the society, copyright provisions also contribute to a nation on economic-front as well. The first multilateral agreement on copyright is the Berne Convention which was concluded in 1886 and was meant for providing protection to literary and artistic works. In order to maintain the balance between the society's need for access to knowledge and the need to rewarding creators, limited uses of copyright protected works are also permitted by law. Still there are numerous issues of piracy in literary works in wholesale reprinting of text and trade books, unauthorised translations and commercial photocopying of books, journals and other literary works. Though, provisions are there in the law to enforce the rules and regulations to check the piracy issues but again the complexity lies even with the enforcement related issues in the developing countries.

BRIEF CV OF SPEAKER 3

(Dr.) Ram Chet Chaudhary

Chairman, Participatory Rural Development Foundation (PRDF), Gorakhpur (U. P.) 273014;
Menotr, IANS, DDU University, Gorakhpur; Mob. 9450966091
email: Ram.Chaudhary@gmail.com

Padma Shri, Prof. (Dr.) Ram Chet Chaudhary was born on 8th November 1944, brought-up and educated in and around Gorakhpur in U. P., India. He holds Ph. D. degree in Genetics and Plant Breeding and then Post Doctorate from Germany and IRRI Philippines. After working for 45 years with various national and international organizations and finally retiring from the Food and Agriculture Organization of the United Nations (FAO), now operate Participatory Rural Development Foundation (PRDF) in Gorakhpur. By nw, I spent 55 years of my career in teaching Plant Breeding, rice research and rural development in more than 40 countries of Asia, Europe, Africa and America.

He has worked in more than 40 countries of Asia, Africa, Europe and America with IRRI, FAO UNDP and EU, and published 400 research papers including 58 books. I am member or Life Member of 15 professional societies and decorated with with more than 59 national and international awards including “Padma Shri” awarded by the President of India on 22nd April 2024.

He developed 150 rice varieties for the world, 24 for India including 4 for Kalanamak alone. He saved the blessing of Lord Buddha given in form of Kalanamak rice through GI, PPV & FRA, organic protocol and development of KN3, Bauna Kalanamak 101, Bauna Kalanamak 102 and Kalanamak Kiran varieties. By providing pure “PRDF Seeds”, I increased the area under Kalanamak rice from mere 2,000 to 82,000 ha. As Regional Council of NCONF Ghaziabad for Organic Certification, we certify organic and natural food products in U. P.

He has received 43 awards from national and international institutions. He also received the second highest civilian award Padma Shri, from the President.

LECTURE 3: GEOGRAPHICAL INDICATION TAGS IN UTTAR PRADESH: PROS AND CONS

R. C. Chaudhary

Chairman, Participatory Rural Development Foundation (PRDF), Gorakhpur (U. P.) 273014

Abstract

Geographical Indication (GI) of Goods and Services is an indication, in the form of name and or sign, used on the goods that have a specific geographical origin and possess qualities or a reputation that are due to the place of origin. In order to function as a GI, a sign must identify a product as originating in a given place. The GI tag ensures that only the authorised users or those residing in the geographical territory are allowed to use the popular product name. It also protects the product from being copied or imitated by others for a period of 10 years. Ever since, more than 289 GI tags have been issued in India for products elated to agriculture. With 75 GI tags issued, Uttar Pradesh tops the list. Realising that GI is a powerful tool to protect the ownership right on the natural resources, natural product and by-products, and manufactured goods based on plants and animals, its importance can't be overemphasised. Uttar Pradesh is not only centre of biodiversity but also centre of skilful artisans and product developers. Thus more awareness needs to be generated about GI and its utilization to generate income for the people of the area. Authorised User Certificate issued by the Intellectual Property Rights Authority of India should be made more effective and linked to the labelling requirements of the product. Legal system is very weak currently to punish the non-compliers. Additionally, loopholes in the system need to be plugged so the benefit of GI should pass on to the people in the geographical area.

Keywords: geographical indication, GI, U. P., loopholes, prospects of GI

BRIEF CV OF SPEAKER 4

Adv. ASHISH SHARMA

Managing Partners of IP Nation, The Law Firm

Registered Patent Agent & IP Facilitator for Start-ups (Govt. of India)
IP Attorney, Global IPR Law Consultants (INDIA)
Secretary General, IP Owners Association (INDIA)

Professional Experience: 20 Years

Adv. **ASHISH SHARMA** is Registered Patent Agent & IP Facilitator for Start-ups. He is Secretary General of Intellectual Property Owners' Association, INDIA. He holds a Masters Degree in Law and Science. He has vast experience in Prosecution & Litigations of Intellectual Property related Laws. He has also vast experience in Research & Development in Pharmaceutical Sciences. He has helped in getting number of Patents in Pharmaceutical & Biotechnology field. He looks after the Drafting and Prosecutions of Patents, Designs, Trademarks and Copyrights matters. He is well versed in US, European and Indian Intellectual Property Laws. He has appeared in number of cases before Controller of Patents, before Intellectual Property Appellate Board (IPAB) and before Various High Courts. His major responsibility includes co-ordination with all national & international clients. He also handles licensing, IP Enforcement assignments, Contracts and Litigation matters pertaining to the various sectors.

He has been regular invitee as guest lecturer and speaker on IP related subjects in various organizations and institutions, including the law schools, management schools, R&D Institutions, corporate, academies and university- departments.

Contact Detail:

Delhi NCR Office: D-177, GF, Shyam Park Ext., Sahibabad, Ghaziabad- 201005 Mumbai Office: NL 4/7/11, Sector-15, Nerul, Navi Mumbai-400706 Kolkata Office: 9/52/2, Pal Bagan Lane, Belurmath, Howrah-711202
USA Office: IP Nation, 35154, Hogan Drive, Beaumont, California, USA- 92223
TEL: +91 9899801721, 9811466092; E-mail: ipnation@outlook.com, www.ipnation.in

LECTURE 4: PATH TO PATENT PROTECTION: OVERVIEW STEPS FROM FILING TO GRANT

Adv Ashish Sharma

Managing Partners of IP NATION, The Law Firm

Securing a patent for your invention involves several steps to ensure intellectual property protection. The process begins with conducting a patent search to verify the novelty and non-obviousness of your invention. If it meets these criteria, applicant files a patent application with the Indian Patent Office (IPO), including a detailed description, claims, abstract, and drawings, along with the required fees. Upon filing, the IPO assigns a filing date and issues an acknowledgment receipt. The application is then published in the Patent Journal after 18 months or earlier, if requested. The next step is substantive examination, where a Patent Examiner evaluates the invention's novelty, inventive step, and industrial applicability. If objections are raised, a First Examination Report (FER) is issued, and the applicant must respond with amendments or clarifications. If the application satisfies all patentability criteria, the patent is granted, and a patent certificate is issued, with the grant published in the Patent Journal. The patent is valid for 20 years, provided annual renewal fees are paid. To be patentable, an invention must be novel, involve an inventive step, and have industrial applicability. However, certain inventions are non-patentable, such as abstract ideas, scientific theories, business methods, and inventions harmful to public order or morality. After grant, the inventor has exclusive rights to the invention and can enforce them legally.

BRIEF CV OF SPEAKER 5

Prof. Dinesh Yadav is a Professor in the Department of Biotechnology and presently Director of the Research and Development Cell at DDU Gorakhpur University. He has been Dean, of the Faculty of Rural Sciences, Head, of the Department of Biotechnology, Nodal officer of the IPR cell, and Coordinator of Centre for Genomics and Bioinformatics at D.D.U. Gorakhpur University. He has also served as Associate Professor in the Department of Molecular Biology and Genetic Engineering at G.B Pant University of Agriculture and Technology, Pantnagar from 2006-2009. He completed his Master's degree in Biotechnology from Devi Ahilya University, Indore in 1996 and Ph.D. from G.B. Pant University of Agriculture and Technology, Pantnagar in 2002. He has more than 24 years of teaching /research experience.

He has availed DST-BOYSCAST Fellowship at the Australian Centre for Plant Functional Genomics (ACPFG), University of Adelaide, South Australia from 3rd May 2012-12th April 2013. He has been awarded for Excellence in Teaching and Research in Higher Education by the University on Teacher's Day 5th Sept 2021. He has been awarded Dr. Pushpendra Kumar Gupta Vishisht Krishi Vaigyanik Puraskar-2015 in the field of Agricultural Sciences by Uttar Pradesh Academy of Agricultural Sciences (UPAAS), Lucknow, and Young Scientist Award-2008 by Uttarakhand State Council of Science & Technology in the discipline Biotechnology, Biochemistry, and Microbiology.

His areas of specialization are Molecular biology, Bioinformatics, Plant Biotechnology, and Enzyme technology. His research group has published seven patents. He has published more than 150 research papers including reviews, books, chapters in Books, and proceedings in conferences, and more than 300 GenBank accession numbers. A total of 48 indigenously isolated microbial strains (fungal and bacterial) strains have been deposited in the Culture collection centers of India. He has carried out nine projects from funding agencies like DBT, UGC, UP Council of Agricultural Research, Lucknow, and DST as PI/Co-PI and Mentor.

He has guided 16 students to Ph.D. in Biotechnology and four registered and pursuing research under his guidance. He has also supervised more than 114 students for M.Sc. dissertation/short project work in Biotechnology. He has been a mentor for five post-doctoral fellowships namely UGC-Dr. D.S. Kothari (twice), DST-Women Scientist-A, DST-Women Scientist-B, and SERB National PDF.

He is a life member of scientific societies namely BRSI, Trivandrum, SBC(I), Bangalore, Indian Science Congress, Association, Calcutta, Society of Plant Biochemistry and Biotechnology, IARI, New Delhi, Association of Microbiologist of India (AMI), New Delhi and UPAAS, Lucknow.

He has delivered more than 100 invited talks/ lectures at conferences/symposiums and served as Mentor for the DST-INSPIRE Science internship camp and Inspire awards. Presently he is working on plant-specific transcription factor-DOF (DNA binding with One finger) and Nuclear Factor-Y (NF-Y) for developing biotic and abiotic stress tolerance crops and pectinases groups of enzymes with potential applications in different industries.

His research work has been published in National and International journals of repute like *Journal of Experimental Botany, Theoretical and Applied Genetics, Cellulose, Frontiers in Microbiology, Planta, World Journal of Microbiology and Biotechnology, Process Biochemistry, Molecular Biology Reports, Plant Systematics and Evolution, Molecular Biotechnology, Applied Biochemistry and Biotechnology, Annals of Microbiology, Journal of Basic Microbiology, 3 Biotech, Biologia, Journal of Cereal Sciences, Physiology and Molecular Biology of Plants, Biochemistry (Moscow), Current Proteomics, Interdisciplinary Sciences: Computational Life Sciences, Biocatalysis and Agricultural Biotechnology, Cell Biochemistry and Biophysics, Online Journal of Bioinformatics, Chemistry and Ecology, African Journal of Biotechnology, Applied Biochemistry and Microbiology, Sugar Tech, Enzyme Research etc.*

LECTURE 5: IPR DRIVEN RESEARCH: AN OVERVIEW

Varsha Rani[1], Shivangi Rungta[3] and Dinesh Yadav[3]*
[1]Department of Biotechnology
School of Engineering and Technology, Sandip University,
Nashik-422213 (Maharashtra)-INDIA
[3]Department of Biotechnology,
Deen Dayal Upadhyaya Gorakhpur University,
Gorakhpur-273009 (Uttar Pradesh)-INDIA

*E-mail of the corresponding author: dinesh.biotech@ddugu.ac.in

ABSTRACT

In research, new knowledge is systematically discovered, problems are resolved, and new applications are developed. Research based on intellectual property rights (IPR) is crucial to innovation and commercialization in industries such as biotechnology and pharmaceuticals. In the field of intellectual property, patents, copyrights, trademarks, and trade secrets are four of the most widely used categories of intellectual property rights that provide authors with a legal framework to protect their rights by granting temporary exclusivity for their work. Although researchers are capable of effectively utilizing IP protection, they face a number of challenges, including legal complexities, economic barriers, and ethical challenges. Through discussion of sections such as the role of intellectual property rights in the innovation cycle, challenges, case studies, policies, and recommendations, this article intends to illuminate how intellectual property rights contribute to the protection of resources as well as the connection between research and development. Furthermore, in order to maximize IPR's potential benefits, it is essential to fully understand the complexities of IPR when conducting research. It will also explore how IP protection can help to create a more prosperous and sustainable economy.

Keywords: copyrights, collaborations, ethical concerns, IPR, policies, patents, research

Introduction

Research is a systematic investigation aimed at discovering new knowledge, solving problems, or developing new applications. Research driven by intellectual property rights (IPR) is essential to innovation and commercialization, especially in industries like biotechnology and pharmaceuticals. This strategy ensures the economic and societal value of intellectual assets by concentrating on their creation and protection. IPR gives authors and innovators the legal framework to safeguard their rights by granting them temporary exclusivity over their works. This lowers the risks involved in innovation and promotes the creation of new software, drugs, technologies, and other breakthroughs that have significant positive social and financial effects (Keller & McKown, 2018; Swinney & Anthony, 2011). By offering financial options, commercialization channels, and protection, IPR enhances the value of the research process. By establishing exclusive rights to their findings, scientists and organizations can improve their capacity to provide technology licenses, draw in capital, and establish business alliances (Harrison & Krafcik, 2020). Trade secrets, trademarks, copyrights, and patents are the four main categories of intellectual property (Bessen & Meurer, 2008). Patents are essential for safeguarding research advances because they give scientists and businesses the ability to obtain exclusive rights and market their products. Patents give businesses market exclusivity in industries like pharmaceuticals, which enables them to recoup the expenses of creating and testing novel medications (Swinney & Anthony, 2011). Copyrights safeguard the work of creators in research-driven industries like software development and scientific publishing, guaranteeing exclusive distribution rights (Keller & McKown, 2018). By establishing brand identities, trademarks aid in the differentiation of goods and services in the marketplace (Mottin & Deruyver, 2013). From inception to commercialization, IPR are essential because they allow researchers to obtain financing, license innovations, and collaborate with top industry players (Harrison & Krafcik, 2020). However, complicated patenting procedures, patent trolling, and uncertainty around patentability standards are obstacles to IPR-driven research. Patent trolling, for instance, involves entities that hold patents solely to sue for infringement, rather than to manufacture or sell products. This practice can create significant costs and risks for genuine innovators (Bessen & Meurer, 2008). IPR regulations must be modified by legislators as technology advances in order to promote creativity and open access to information (Correa, 2007). For the future of research-driven sectors, it will be crucial to make sure that IP systems continue to reward creators while tackling problems like patent trolling, international cooperation, and fair access to breakthroughs (Maskus, 2012).

IPR plays a central role in driving research and innovation, but it requires careful governance and regulation to ensure that it benefits both inventors and the public. Governments and international organizations must work together to create and enforce IPR laws that balance the protection of intellectual property with the need for open access to knowledge. This balance is particularly important as new technologies challenge existing IP frameworks. Policymakers will need to implement reforms that address emerging challenges, such as patent thickets, AI-related inventions, and global disparities in IP enforcement. Ultimately, effective IP governance can support the development of innovations that address societal needs while ensuring equitable access to

knowledge and resources. Keeping these in mind, In this article, our research group summarized the impact of IPR in research and innovation, together with their impact on society.

1. Types of Intellectual Property and their role in Protection and Commercialization of Research

Patents, copyrights, trademarks, and trade secrets are the most common types of intellectual property, but a number of other intellectual property rights serve their own distinct purposes in protecting various aspects of intellectual work, and are listed in Table 1. Patents play an integral part in safeguarding research innovations by providing inventors with exclusive rights to their inventions. Patents provide the necessary protection for researchers to commercialize their discoveries in research domains such as pharmaceuticals and biotechnology, where high-investment is required. Researchers can attract funding, form licensing agreements, and form strategic partnerships by patenting their innovations. Furthermore, patents serve as deterrents to competitors, ensuring that the inventor's work will not be exploited without authorization. Patents provide legal exclusivity for inventors, encouraging them to continue to invest in R&D and ensuring that their inventions are financially beneficial to them (Merges & Nelson, 1990). Research-driven fields like software development and scientific publishing are particularly concerned with copyrights. As part of software development, copyright protects the original code developed by developers, ensuring that they retain control over distribution and modification of the code. In addition to losing revenue and diminished intellectual property value, unauthorized use or copying of software can result in significant loss of revenue. In scientific publishing, copyright enables authors to protect their research articles, books, and journals, allowing them to control how their work is distributed and credited, thereby ensuring that their contributions are acknowledged and their intellectual outputs are not exploited without their permission (Lessig, 2004). To identify and promote products or services derived from research, trademarks are vital to commercializing research outcomes. Using trademarks can help institutions and companies establish a unique identity for their products, which is important to attracting investors and consumers. A university that patents a new technology may also register a trademark. This ensures that the product is recognized for its name or logo in the marketplace. As a key asset to successfully commercializing research findings, trademarks are essential to maintaining the reputation and quality associated with specific innovations.

Table 1: Various Types of IPR and their Key Features

Type of IPR	Definition	Scope	Duration	Protection Scope	Applicable Jurisdictions
Patent	Patents protect new, inventive, and industrially applicable inventions.	Explores new inventions, innovations in products, processes, and machinery.	20 years from the filing date (in most jurisdictions). Can vary by country.	Stops others from using patented invention in any way.	Filing is required in multiple countries like India, USA, EU, Japan.
Trademark	A unique symbol that separates products or services from others.	Includes symbols, colors, and sounds that embody a brand.	10 years initially, renewable indefinitely as long as the mark is in use.	Protects the brand identity from infringement and ensures consumer recognition.	Each country has its own registration system, with international protection under the Madrid Protocol.
Copyright	Creators of original works like literature, art, and music have a legal right.	Includes books, music, films, software, designs, and architecture.	Life of the author + 60 years (varies by country).	Grants rights to copy, distribute, display, and adapt the work exclusively.	National, but Berne Convention ensures international protection.
Design	Safeguarding an article's visual appeal, encompassing shape, pattern, and ornament.	Protects a product's design visuals, not its technical features.	10 years, extendable for an additional 5 years (varies by jurisdiction).	Prevents copying product's visual design by others.	National jurisdiction (filed in each country individually).
Geographical Indication (GI)	A sign indicates a product's origin, connecting its quality and reputation to a specific geographical location.	Safeguards region-specific products like food, wine, and crafts.	Indefinite as long as the product maintains its characteristics and origin link.	Preserves local product reputation and enforces fair use of geographical terms.	National and regional, with international protection under the Lisbon Agreement and WTO.
Trade Secret	Confidential information providing a business advantage.	Involves business secrets like formulas, practices, designs, and processes.	As long as the information remains secret (no fixed duration).	Protects confidential business information from unauthorized use or disclosure.	National jurisdiction, with protection depending on the security measures taken by the holder.
Plant Variety Protection	Legal rights granted to the breeders of new varieties of plants.	Protects new, distinct, stable plant varieties.	Typically 18-25 years, depending on the type of plant.	Protects plant variety from unauthorized use.	Protected nationally and internationally by UPOV.
Integrated Circuit Layout Design	Design protection for integrated circuits in electronic products.	Arranges electronic components in semiconductor products, like microchips.	10 years.	Protects against layout design copying.	National (filed in each country). International protection under the Washington Treaty.
Utility Model	Simpler requirements for safeguarding technical problem-solving innovations.	Similar to patents but with lower inventiveness levels.	6 to 15 years (depending on jurisdiction).	Protects industrially applicable functional inventions.	Available in some countries, including India, Germany, and China.

2. IPR and Collaborative Research

IPR regulations are essential for facilitating collaborations between academia, industry, and government, fostering innovation, translating research findings into market-ready products, and ensuring scientific discoveries benefit society. In contrast, poorly managed IPR issues can lead to conflict and impede research projects. In order to avoid conflicts over ownership and commercialization rights, clear IP agreements, including patent rights and revenue-sharing terms, are essential. According to government regulations (Mowery et al., 2004), universities are encouraged to patent and license innovations resulting from publicly funded research (such as the Bayh-Dole Act in the United States). This promotes collaboration between academia and industry. In some cases, however, disputes over patent ownership or licensing terms can undermine the trust and cooperation necessary for effective collaboration. A licensing agreement is a primary way to commercialize research innovations, allowing universities, research institutions, or individual inventors to retain ownership while granting other parties license rights to use, manufacture, and sell the innovations. As a result of industry-academia collaborations, licensing agreements enable businesses to develop, market, and sell new products based on research. In universities and research institutions, it is important to balance open access with protecting and commercializing intellectual property. It is possible to balance these two aspects through selective licensing and hybrid open-access models. To promote open access and ensure proper protection, open innovation strategies and open-source licensing for software and digital tools can also be used (Harrison, 2010; Chesbrough, 2003).

3. Global Perspectives on IPR in Research

There are significant differences between countries in the law governing IPR, which can hinder cross-border collaborative research. International cooperation is hindered by differences in patentability criteria, enforcement mechanisms, and IP protection standards, affecting the global commercialization of research-driven innovations. International treaties such as the Patent Cooperation Treaty (PCT) and the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) have been designed to harmonize intellectual property law and create frameworks that facilitate international cooperation (WIPO, 2020, Correa, 2007). The impact of these treaties is however nuanced, and individual country policies may either promote or hinder innovation depending on how IPR frameworks are structured and enforced. As a result of the Patent Cooperation Treaty (PCT), patent filings internationally are streamlined, promoting the development of new technologies across the globe. TRIPS, a member of the World Trade Organization (WTO), establishes minimum standards for intellectual property protection among members, but its impact on access to medicine and technology has been questioned. The design and implementation of an IPR policy can have a positive or negative impact on innovation in different countries. The provision of legal protections and financial incentives by strong IPR systems can promote innovation, whereas developing countries with less stringent protections

may have difficulty fostering innovation (Mogollón, 2010). By adopting a pragmatic or flexible approach to IPR protection, countries can encourage innovation while ensuring the benefit of society as a whole is realized. As a result, international research collaborations present a number of challenges because IPR laws and policies vary significantly across countries. In order to foster sustainable innovation worldwide, continued efforts to harmonize IPR frameworks and address issues related to public access and equity will be crucial (Geiger, 2015).

4. Challenges in IPR-Driven Research

IPR provides protection and commercialization of innovations, but researchers face numerous challenges in securing and using them effectively. These include legal complexities, economic barriers, and ethical considerations. The process of applying for and securing IP protection can be costly, time-consuming, and legally complicated, with ambiguous criteria for patentability Lemley, 2013). It takes many stages to file a patent, as illustrated in Figure 1, which requires thorough documentation, examination, and approval. Typically, a patent application involves conducting a patent search, preparing a detailed application, filing it with the relevant patent office, undergoing a formal examination, responding to office actions, and potentially engaging in an appeal process if the patent has been rejected initially. Depending on the complexity of the invention and the backlog of the patent office, each step may take several months or even years. Researchers may also face issues related to the ownership of IP, especially when collaborative projects are involved. (Barton, 2000). Patent trolling, where non-practicing entities exploit patents to extract settlements from operating companies without producing or commercializing the products themselves, can drain resources from researchers. Patent wars, the extensive and aggressive litigation between large companies over patent rights, can be financially burdensome and slow down the innovation process. Ambiguous patentability criteria can create confusion and delay in the research-to-commercialization process, discourage investment in new technologies (Shrestha et al., 2016). Ethical concerns arise from the potential privatization of public goods, biopiracy, and the responsibility to balance the interests of individual researchers, institutions, and society as a whole (Harrison, 2011). Patenting can reward innovation but also create barriers to the free exchange of knowledge and hinder collaborative efforts. Researchers must carefully consider whether the benefits of patenting their discoveries outweigh the potential negative impacts on collaboration and accessibility Harrison, 2011). Therefore, researchers must navigate these challenges carefully to ensure their research contributes positively to both technological progress and societal welfare.

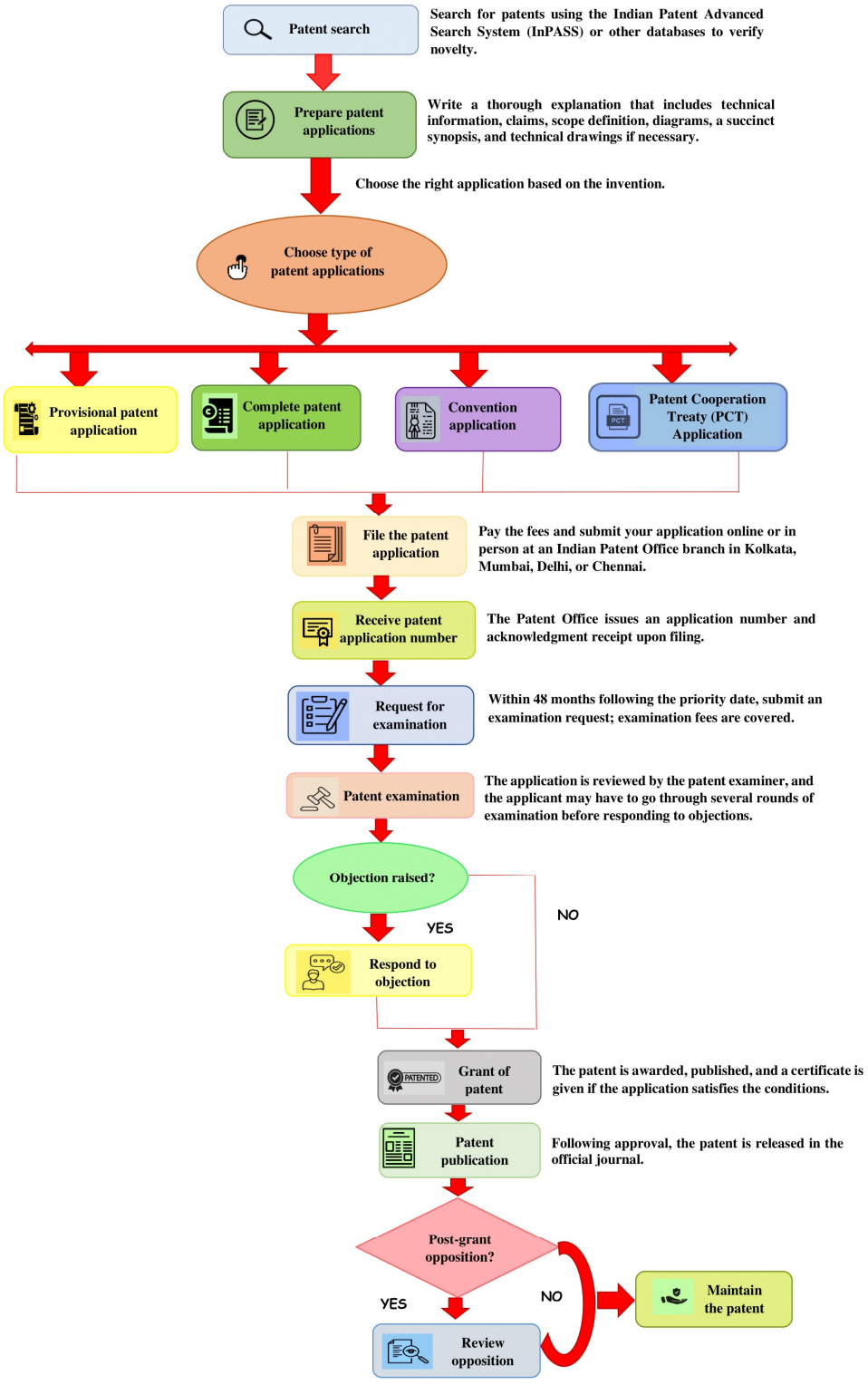


Fig 1: Flowchart Outlining the Steps for Filing Patents in India

5. Future Challenges for Researchers and Policymakers in Balancing Intellectual Property Rights and Public Access to Knowledge

As technological advances continue to transform research, one of the most pressing challenges will be balancing intellectual property protection with public access to knowledge. There has long been a conflict between these two objectives, and as innovation accelerates, this balancing act will become increasingly difficult. For example, Patents have long been known for limiting access to life-saving medicines and treatments, especially in developing countries. While the TRIPS Agreement allows countries to issue compulsory licenses in public health emergencies, in reality, many low-income nations are unable to access affordable medications as a result of high levels of patent protection (Correa, 2007). During times of crisis, such as pandemics, policymakers must advocate for a system that promotes innovation while ensuring equitable access to essential health technologies

Moreover, as a collaborative research becomes increasingly important, especially in complex, multidisciplinary fields, it becomes increasingly difficult to maintain openness of scientific inquiry while protecting intellectual property. To promote knowledge dissemination, universities and research institutions often encourage open access to research findings, however, this conflicts with the commercialization potential of patented discoveries. For investment and development to be stimulated, it will be necessary to balance open access with intellectual property protection by establishing new models that allow both the free flow of knowledge and the protection of intellectual property.

Another issue is the disparity between developed and developing countries in IPR enforcement. While advanced economies typically have strong enforcement mechanisms for intellectual property, many developing countries struggle with weak enforcement mechanisms and limited resources to protect intellectual property. Consequently, global collaborations can present challenges, as inventors in less developed regions may have difficulty protecting their innovations from infringement, which could inhibit the flow of new ideas (Maskus, 2012). IPR protection must be accessible and equitable on a global scale by policymakers. As a result of these changes, researchers and policymakers must maintain a delicate balance between protecting intellectual property rights and ensuring that research outcomes benefit society as a whole. IPR in research will require a forward-looking approach that promotes innovation while also addressing global challenges pertaining to equity, access, and ethics in the future.

6. Examples of Successful IPR-driven Research Initiatives in Biotechnology and some Case Studies

Intellectual Property Rights (IPR) in biotechnology play a crucial role in encouraging innovation and advancing technological progress across various sectors. The patents listed in Table 2 highlight significant contributions to food biotechnology, agriculture, environmental solutions, medical advancements, and genome sequencing. For instance, in food biotechnology, patents for edible coatings to extend fruit shelf life and methods for converting food waste into bioethanol demonstrate how biotechnological innovations can address

sustainability and health challenges. In agriculture, the development of bio-stimulants, plant growth regulators, and biosensors for pathogen detection emphasizes biotechnology's role in enhancing crop resilience and agricultural productivity. Similarly, in environmental science, patents focused on waste reduction, microbial protection for plants, and sustainable rice straw pulp methods showcase the potential of biotechnology to mitigate pollution and promote eco-friendly solutions. The medical field is also witnessing breakthroughs, with patents for nano-drugs targeting tuberculosis, herbal treatments for cancer, and gene therapy innovations for muscular dystrophy and Parkinson's disease. Furthermore, advances in genome sequencing, such as engineered Cas9 systems and methods for detecting genetic variants, highlight biotechnology's power in revolutionizing genetic research and precision medicine. These patents exemplify the importance of IPR in fostering innovation and ensuring that biotechnological advancements benefit society and the environment.

Table 2: Patents in diverse areas of biotechnology (https://iprsearch.ipindia.gov.in/PublicSearch/)

Patent Granted	Patent Number	Date of Grant
Food Biotechnology		
An edible polysaccharide gum arabic/chitosan-based coatings for enhancing shelf life of perishable fruits	557009	27-12-2024
Process for the preparation of heat treated cereal based food products	519670	05-03-2024
Method for preparation of bioethanol from food waste	462104	26-10-2023
Utilization of tomato and tomato processing by-products for the development of fiber, minerals, and antioxidant-rich novel nutritional bakery products	451836	15-09-2023
Method for Preparation of Printing Ink from Fried Food Residues and Printing Ink thereof	387793	28-01-2022
Agriculture		
A comprehensive bio-stimulant for sustainable agriculture and method of its preparation	557468	06-01-2025
A novel bacterial consortium for plant growth in heavy metals and salinity	554680	20-11-2024
Synergistic plant growth regulator composition comprising gibberellic acid	485551	19-12-2023
A Biosensor for the Early Detection of Plant Pathogens	456261	03-10-2023
Bactericidal agent for agricultural or horticultural use, plant disease control method, and product for plant disease control use	474793	29-11-2023

Environment		
An environmental-friendly solution for waste reduction, air, and soil pollution control	554078	08-11-2024
Microbial formulation for the protection of plants and agricultural crops against environmental conditions	509159	09-02-2024
Environment-friendly microbial-mediated method of rice straw pulp preparation and uses thereof	473791	28-11-2023
Isolation of gardenin-b from Bauhinia foveolata leaves and its anticancer activity against cervical cancer cell lines	556135	11-12-2024
A biosynthesized nano drug from Piper longum against tuberculosis	536167	30-04-2024
Method to quantify brain dopaminergic neurodegeneration and dopamine in a drosophila model of Parkinson's disease	553935	06-11-2024
Method for the development of poly herbal formulation for the treatment of breast cancer	512145	19-02-2024
An optimized AAV vector for gene therapy of muscular dystrophy	531321	01-04-2024
Herbal extract of Rhododendron arboretum for treatment of SARS-CoV-2 virus and other corona viruses/COVID variants	525944	14-03-2024
Genome Sequencing		
Methods for detecting variants in next-generation sequencing genomic data	543342	27-06-2024
Engineered Cas9 systems for eukaryotic genome modification	532560	10-04-2024
Using nucleosome interacting protein domains to enhance targeted genome modification	443350	07-08-2023
Quinoxalinone compounds, compositions, methods, and kits for increasing genome editing efficiency	475508	30-11-2023
Artificial genome manipulation for gene expression regulation	470931	21-11-2023

Case studies of successful IPR-based research in biotechnology include the development of CRISPR-Cas9 gene editing technology by Jennifer Doudna and Emmanuelle Charpentier, which led to a Nobel Prize and numerous patents. Another example is the development of Antiretroviral drugs and creation of monoclonal antibodies for cancer treatment by scientists at Genentech, resulting in groundbreaking therapies and significant intellectual property holdings. These cases highlight the critical role of intellectual property rights in driving innovation and commercialization in biotechnology.

a. Pharmaceutical Industry: The Development of Antiretroviral Drugs

Pharma companies have long relied upon intellectual property rights (IPR) to promote research and development (R&D), particularly in the context of drug discovery. One noteworthy example is the development of antiretroviral (ARV) drugs for HIV/AIDS treatment. In order for pharmaceutical companies to protect their research and maintain market exclusivity for drugs such as Efavirenz and Tenofovir, patents were heavily used in the development of these life-saving medicines, encouraging investment. As a result of patent protection, pharmaceutical companies, such as Gilead Sciences, were able to safeguard the formulations of these drugs, which in turn contributed to their commercial success.

The impact of these IPR-driven innovations on society has been profound. These drugs have saved millions of lives worldwide, particularly in developing countries where HIV/AIDS remains a significant public health concern. Additionally, the protection provided by these patents allowed companies to recoup the immense costs associated with research and development. However, this has also sparked debates about access to medicines, with critics arguing that patenting practices can prevent affordable access to life-saving drugs in low-income countries. Pharmaceutical companies have taken steps to address this issue by entering into voluntary licensing agreements with organizations such as the Medicines Patent Pool that allow the production of generic versions of ARVs in developing countries (Correa, 2007). The example illustrates how intellectual property rights can promote both innovation and equitable access to critical medicines.

b. Biotechnology Industry: The Case of CRISPR Technology

The CRISPR-Cas9 gene-editing technology, developed by scientists Jennifer Doudna and Emmanuelle Charpentier, has revolutionized the field of genetic engineering. As a result of the discovery of CRISPR, which is capable of precisely modifying DNA, significant applications have been discovered in medicine, agriculture, and bioengineering. As a means of protecting their invention, Doudna and Charpentier applied for patents covering the CRISPR-Cas9 technology, which enabled them to secure control over its commercialization and use. Several biotechnology companies and research institutions have been able to enter into lucrative licensing agreements with CRISPR developers because of the patents granted to the University of California, Berkeley and other institutions. This has led to further research and development into therapeutic applications, including

potential cures for genetic disorders and cancer treatments. In spite of this, multiple competing patent claims from other parties, including the Broad Institute of MIT, have complicated the CRISPR patent landscape. As a result, ongoing legal disputes have taken place over CRISPR technology, emphasizing the importance of effective IPR management in cutting-edge fields such as biotechnology. Despite these challenges, CRISPR technology has opened up new avenues for medical and agricultural advancements, offering the possibility of addressing some of humanity's most pressing issues, such as genetic diseases and food security (Stern & Sull, 2019).

7. Policy, Governance and Recommendation in IPR-driven Research

Through the creation of laws, regulations, and international agreements that set the framework for intellectual property protection, governments and international organizations play an important role in regulating IPR. According to local economic, cultural, and political contexts, national governments enact and enforce IP laws. As an example, the United States Patent and Trademark Office (USPTO) governs trademarks and designs, whereas the European Union has a unified trademark and design system through EUIPO. Organizations like the World Intellectual Property Organization (WIPO), established by the United Nations (UN), play an important role in promoting IP protection across borders. A global platform for resolving international IP disputes, WIPO develops global standards for patents, copyrights, trademarks, and other forms of IP. WIPO has negotiated a number of important international agreements, such as the Patent Cooperation Treaty (PCT), which simplifies patent filing in multiple countries. In addition, the World Trade Organization (WTO), through its TRIPS Agreement, sets minimum IP protection standards. To facilitate trade and research collaboration, TRIPS aims to harmonize IP laws across different jurisdictions, including patents, copyrights, and trade secrets. In developing countries, TRIPS has also raised concerns about its potential to limit access to knowledge and essential medicines (Correa, 2007). IPR laws must foster innovation while enhancing public access to knowledge, one of the most challenging tasks for policymakers. Exclusive rights to inventions are designed to incentivize creators, but monopolistic practices and overly restrictive practices can hamper access to these inventions. In order to overcome this challenge, policymakers must find a balance between rewarding innovation and providing public benefits. Compulsory licensing allows governments to authorize the production of patented products without the consent of the patent holder, typically during times of public health emergencies or when access to critical technologies is limited. A number of countries use this mechanism to provide access to affordable medicines, especially for HIV/AIDS and other diseases where patented drugs are often too expensive (Heath, 2007).

Also, open-access models have gained popularity, especially in academics and research, where public funding is used to make knowledge available free of charge. Plan S in Europe supports open-access publishing, which makes scientific knowledge more accessible and protects researchers' rights through copyright protections (Aksnes et al., 2019). It is important to ensure that these models do not undermine incentives for private sector

investment in innovation, especially in fields like biotechnology and pharmaceuticals where R&D costs can be extraordinarily high. Collaboration models that share or license intellectual property can also promote knowledge dissemination without sacrificing inventors' economic incentives. The Medicines Patent Pool (MPP), for example, is an initiative that facilitates the voluntary licensing of essential medicines, allowing manufacturers to produce generics of patented drugs in low- and middle-income countries. As a result, research-driven innovations can be widely distributed while the original developers are compensated.

The traditional IPR system is challenged by advances in fields like artificial intelligence (AI), biotechnology, and nanotechnology. Inventions created by machine learning algorithms or artificial intelligence, for example, remain largely unresolved. Patent laws assume inventorship, but AI systems can create innovations on their own. The role of AI in innovation must be addressed by policymakers (Müller et al., 2020), as well as amending patent laws to accommodate non-human inventors. Patent thickets can stimulate innovation and increase litigation costs when multiple patents are filed on the same technology. Also, evergreening, in which companies extend patent exclusivity on existing products, can hinder generic competitors from entering the market. To reduce the negative impact of patent thickets and evergreening on innovation (Bessen & Meurer, 2008), policymakers may need to introduce reforms that limit patenting practices that do not contribute to genuine technological advances. Due to limited resources and infrastructure, many developing countries struggle with weak IP enforcement systems. The creation of a level playing field for researchers and innovators worldwide requires strengthening IP enforcement in these regions. For IP protection and enforcement in all regions, policymakers must prioritize capacity-building initiatives (Maskus, 2012), including education and legal and technical infrastructure development. Global challenges like climate change, pandemics, and food security require international research collaboration. In order to ensure fair access to research outcomes while protecting all stakeholders' interests, policymakers need to ensure IPR facilitates these collaborations. In collaborative research projects, such as the human genome or vaccine development, international frameworks may have to be created to manage IP.

Conclusion

Research and innovation are facilitated by IPR as a legal framework that protects the efforts of creators, researchers, and innovators. Insuring exclusivity over inventions and creations encourages investment in new technologies, products, and services, particularly in high-risk industries such as biotechnology, pharmaceuticals, and software development. Further, it promotes partnerships, capital investments, and licensing of innovations, all of which contribute to commercialization. As a result of patent trolling, complex patent procedures, and international variations in IPR regulations, it is necessary to address these challenges in order to maintain a system conducive to creativity and fair access. The balance between the interests of innovators, the public, and broader societal needs must constantly be considered in IPR regulations as technology evolves. As a result, a robust and equitable intellectual property regime is crucial for maintaining the momentum of research-driven sectors and ensuring that breakthroughs are beneficial to society as a whole.

References

Aksnes, D. W., Langfeldt, L., & Wouters, P. (2019). Open Access and Knowledge Dissemination in the Digital Age: Policy and Economic Considerations. *Research Policy, 48*(1), 137-151.

Barton, J. H. (2000). Intellectual Property and the Human Genome. *Biotechnology Law Report, 19*(5), 530-542.

Barton, J. H. (2000). Intellectual Property and the WTO: A Grumpy Perspective. *The Journal of World Intellectual Property, 3*(1), 3-10.

Bessen, J., & Meurer, M. J. (2008). *Patent Failure: How Judges, Bureaucrats, and Lawyers Put Innovators at Risk*. Princeton University Press.

Chesbrough, H. W. (2003). *Open Innovation: The New Imperative for Creating and Profiting from Technology*. Harvard Business Press.

Correa, C. M. (2007). *Intellectual Property Rights, the WTO and Developing Countries: The TRIPS Agreement and Policy Options*. Third World Network.

Geiger, C. (2015). The Evolution of Patent Law in Europe: The Need for Reform. *European Journal of International Law, 26*(4), 951-983.

Harrison, J. (2011). *Intellectual Property and the Human Body: Ethical and Legal Perspectives*. Ashgate Publishing.

Harrison, M., & Krafcik, K. (2020). *Intellectual Property and Innovation: A Global Perspective*. Wiley & Sons.

Harrison, R. (2010). Open Innovation and the Challenge of Intellectual Property Management. *International Journal of Innovation Management, 14*(2), 167-185.

Heath, J. (2007). Compulsory Licensing and Access to Medicines: The Case for Public Health Flexibilities in International Trade Agreements. *The Journal of International Business and Law, 6*(2), 1-33.

Kapczynski, A. (2012). The Cost of Intellectual Property: The Global Health Crisis and the Need for Reform. *The American Journal of Public Health, 102*(6), 1023-1031.

Keller, W., & McKown, J. (2018). Intellectual Property and Economic Development. *Economic Development Quarterly, 32*(4), 304-319.

Kesan, J. P., Ball, P. A., & Kesan, R. S. (2020). Data Rights and Artificial Intelligence: Legal Issues and Emerging Trends. *Journal of Law and Technology, 25*(2), 115-137.

Lemley, M. A. (2013). The Myth of the Sole Inventor. *University of Chicago Law Review, 80*(2), 247-294.

Lessig, L. (2004). *Free Culture: How Big Media Uses Technology and the Law to Lock Down Culture and Control Creativity*. Penguin Press.

López, A., & Ríos, A. (2020). Blockchain and Intellectual Property Management: Opportunities and Challenges. *Journal of Intellectual Property Law & Practice, 15*(6), 433-441.

Maskus, K. E. (2012). Intellectual Property and Innovation in Developing Countries. *Oxford Handbook of the Economics of Innovation*, 203-227.

Merges, R. P., & Nelson, R. R. (1990). On the Complex Economics of Patent Scope. *Columbia Law Review, 90*(4), 839-916.

Mogollón, J. M. (2010). Compulsory Licensing and Access to Medicines in Developing Countries: A Review of Policy and Practice in the Global South. *Journal of Global Health, 2*(2), 105-112.

Mottin, S., & Deruyver, A. (2013). The Medicines Patent Pool: A Model for Affordable Access to Essential Medicines. *PLOS Medicine, 10*(3), e1001490.

Müller, J. F., & Simons, K. (2020). The Role of Artificial Intelligence in the Patent System: Legal and Ethical Considerations. *AI & Society, 35*(4), 765-777.

Mowery, D. C., Nelson, R. R., Sampat, B. N., & Ziedonis, A. A. (2004). *Ivory Tower and Industrial Innovation: University-Industry Technology Transfer Before and After the Bayh-Dole Act*. Hoover Institution Press.

Shrestha, A., Jiang, P., & Grant, D. (2016). Patent Trolling and Innovation in the Knowledge Economy. *Journal of Business Ethics, 133*(4), 551-562.

Stern, R., & Sull, D. (2019). The CRISPR Patent Wars: A Tale of Two Universes. *Harvard Business Review, 97*(3), 1-9.

Swinney, D., & Anthony, S. (2011). The Business of Biopharmaceutical Innovation. *The Journal of Pharmaceutical Innovation, 6*(4), 102-114.

WIPO. (2020). *Patent Cooperation Treaty: The International Patent System*. World Intellectual Property Organization. Retrieved from https://www.wipo.int/pct/en/

ORGANIZATION ASSOCIATED WITH IPR

S. No.	Name of organization	Headquarters	Website address
1.	Department for Promotion of Industry and Internal Trade (DPIIT)	New Delhi, India	https://dpiit.gov.in/
2.	Office of Controller General of Patents, Designs & Trade Marks (CGPDTM)	Mumbai, India	https://ipindia.gov.in/
3.	Copyright Office, India	New Delhi, India	https://copyright.gov.in/
4.	Geographical Indications (GI) Registry	Chennai, India	https://ipindia.gov.in/registered-gls.htm
5.	Rajiv Gandhi National Institute of Intellectual Property Management (RGNIIPM) & Patent Information System (PIS)	Nagpur, India	https://ipindia.gov.in/rgniipm.htm
6.	The Design Office	Kolkata, India	https://ipindia.gov.in/designs.htm
7.	The Semiconductor Integrated Circuits Layout-Design Registry	New Delhi, India	https://sicldr.gov.in/sicw/index
8.	The Indian Patent Office (IPO)	Kolkata, India	https://ipindia.gov.in/patents.htm
9.	The Trade Marks Registry	Mumbai, India	https://ipindia.gov.in/trade-marks.htm
10.	Cell for IPR Promotion & Management (CIPAM)	New Delhi, India	http://www.cipam.gov.in
11.	Protection of Plant Varieties and Farmers Right Authority	New Delhi, India	https://plantauthority.gov.in/
12.	World Intellectual Property Organization (WIPO)	Geneva, Switzerland	https://www.wipo.int/portal/en/index.html
13.	European Patent Office (EPO)	Munich, Germany	https://www.epo.org/en
14.	United States Patent and Trademark Office (USPTO)	Alexandria, Virginia, USA	https://www.uspto.gov/
15.	Japan Patent Office (JPO)	Tokyo, Japan	https://www.jpo.go.jp/e/
16.	China National Intellectual Property Administration (CNIPA)	Beijing, China	https://english.cnipa.gov.cn/
17.	International Trademark Association (INTA)	New York City, USA	https://www.inta.org/
18.	Intellectual Property Office (UKIPO)	Newport, Wales, United Kingdom	https://www.gov.uk/government/organisations/intellectual-property-office
19.	Australian Intellectual Property Office (IP Australia)	Canberra, Australia	https://www.ipaustralia.gov.au/
20.	African Regional Intellectual Property Organization (ARIPO)	Harare, Zimbabwe	https://www.aripo.org/

INDIAN WEB-PORTALS FOR PATENTS AND TECHNOLOGIES

S. No.	Patents and Technologies	Web-Portal
1	Indian Patent Advanced Search System	https://iprsearch.ipindia.gov.in/publicsearch
2	CSIR Technology Portal and Patent Database	https://techindiacsir.anusandhan.net/online/Control.do?_main=488t3s
3	Biotechnology Industry Research Assistance Council (BIRAC) Technology Portal	https://birac.nic.in/technologyportal.php
4	Indian Science, Technology and Engineering Facilities Map (I-STEM)	https://www.istem.gov.in/rd-infrastructure-map
5	National Research Development Corporation (NRDC)	https://nrdcindia.com/
6	Asian and Pacific Centre for Transfer of Technology (APCTT)	https://apctt.org/
7	Technology Innovation Management & Entrepreneurship Information Service (TIME IS)	https://www.techno-preneur.net/
8	Techpedia	https://techpedia.in/
9	National Innovation Foundation (NIF)	https://www.nif.org.in/
10	Defense Research and Development Organization (DRDO) Technology	https://www.drdo.gov.in/drdo/
11	Indian Space Research Organisation (ISRO) Technology transfer page	https://www.isro.gov.in/TechnologyTransfer.html
12	The Department of Atomic Energy (DAE)	https://dae.gov.in/patents-filed-by-department-of-atomic-energy/

Source: https://dst.gov.in/sites/default/files/FULL%20BOOK-Chandigarh.pdf

PRINT MEDIA COVERAGE

बौद्धिक संपदा अधिकार पर आयोजित हुई कार्यशाला

स्वतंत्र चेतना

गोरखपुर। जैव प्रौद्योगिकी विभाग, विश्वविद्यालय ने विज्ञान एवं प्रौद्योगिकी परिषद, उत्तर प्रदेश द्वारा प्रायोजित बौद्धिक संपदा अधिकार (आईपीआर) पर एक दिवसीय जागरूकता कार्यशाला का आयोजन किया। कार्यशाला का उद्घाटन कुलपति एवं मुख्य संरक्षक प्रो पूनम टंडन, रजिस्ट्रार एवं डीन फैकल्टी ऑफ साइंस प्रो शांतनु रस्तोगी, मुख्य अतिथि डॉ. प्रभात कुमार (उद्यान आयुक्त, कृषि एवं किसान कल्याण विभाग, कृषि मंत्रालय, भारत सरकार, सम्मानित अतिथि पद्मश्री प्रो राम चेत चौधरी (अध्यक्ष पीआरडीएफ, गोरखपुर), वक्ता डॉ. श्रीपति राव कुलकर्णी, प्रधान वैज्ञानिक एवं सीएसआईआर-सीडीआरआई के आईपीआर समन्वयक, लखनऊ,

और डॉ शालीन रायजादा, एमडी, सैनशैडो कंसल्टेंट्स प्राइवेट लिमिटेड नई दिल्ली ने किया।

कार्यक्रम की शुरूआत दीप प्रज्वलित करके की गई। प्रो पूनम टंडन ने विश्वविद्यालय के नवाचारों को स्वीकार करने के लिए वर्ष में कम से कम 50 पेटेंट का लक्ष्य रखा। उन्होंने प्रधानमंत्री के विकासशील भारत-2047 मिशन के प्रकाश में विश्वविद्यालय के आविष्कारशील विचारों को बेहतर बनाने के लिए सैन शैडो कंसल्टेंसी और विश्वविद्यालय के बीच समझौता ज्ञापन को संबोधित किया। वक्ता डॉ. श्रीपति राव कुलकर्णी सेंटड्रग रिसर्च इंस्टीट्यूट से सीएचरोमन अणु के पेटेंट के बारे में भी बात की। पेटेंट नवाचार के लिए एक प्रोत्साहन है

हिन्दुस्तान

[कुछ अलग] गोरखपुर विश्वविद्यालय के बायोटेक्नोलॉजी विभाग ने खोजे 22 फंगस, तीन अलग-अलग पेटेंट के लिए आवेदन किए गए हैं

बाग की मिट्टी से तैयार होगा उद्योगों के लिए एंजाइम

■ ईश्वर सिंह

गोरखपुर। आम, अमरूद, लीची, केला, संतरा आदि के बगीचों से सिर्फ फल ही नहीं मिलेंगे बल्कि वहां की मिट्टी से उद्योगों के लिए एंजाइम भी तैयार होगा। इस एंजाइम का नाम है पेक्टिनेज। इस प्राकृतिक एंजाइम की मदद से कपड़े के रेशे बनाए जा सकेंगे। यह एंजाइम उत्पादों की पैकेजिंग में प्लास्टिक का विकल्प भी बन सकेगा। वस्त्र से लेकर रस, खाद्य-प्रसंस्करण, कागज और लुगदी आदि देश के 25 फीसदी उद्योगों में इसी एंजाइम का इस्तेमाल होता है। अभी ये एंजाइम रसायन की मदद से तैयार किए जाते हैं।

दीनदयाल उपाध्याय गोरखपुर विश्वविद्यालय के बायोटेक्नोलॉजी विभाग के प्रोफेसर दिनेश यादव और शोध छात्रा श्रुति द्विवेदी ने इस पर अनोखा रिसर्च किया है। रिसर्च में फलों के बाग से ली गई मिट्टी के 10 नमूनों से 22 पेक्टिनेज एंजाइम उत्पादक फंगस मिले हैं। इनमें से 13 प्रकार के फंगस में पेक्टिनेज एंजाइम बनाने की उच्च गुणवत्ता मिली, जो चार जेनेरा (परिवार) और 10 विभिन्न प्रजातियों के हैं। इनमें से दो फंगस की देश में ही पहली बार पेक्टिनेज उत्पादन के लिए पहचान हुई है। इस एंजाइम के निर्माण की लागत भी बेहद कम है।

प्रो. दिनेश यादव, बायोटेक्नोलॉजी, डीडीयू — श्रुति द्विवेदी, शोधार्थी, डीडीयू

ये हैं तीन प्रमुख प्रयोग

जेली शीट में तब्दील

एंजाइम को लेकर सबसे अनोखा प्रयोग उसे जेली शीट (चादर) के रूप में तब्दील करने का रहा। श्रुति ने बताया कि यह जेली शीट ही पैकेजिंग में प्लास्टिक का विकल्प बनेगी। उपयोग पूरा होने के बाद जेली शीट को कूड़े में फेंक देंगे तो वह पर्यावरण को भी नुकसान नहीं पहुंचाएगा।

भांग, सनई से फाइबर

प्रो. दिनेश ने बताया कि आमतौर पर वस्त्र उद्योग में फाइबर तैयार करने के लिए जूट व रेशम का प्रयोग किया जाता है। यह एक लंबी प्रक्रिया है। एंजाइम की मदद से भांग व सनई जैसी वनस्पतियों से फाइबर तैयार किया गया। इस फाइबर की ताकत व गुणवत्ता जूट और रेशम जैसी ही मिली है।

सुरक्षित रहेगा खाद्य-पेय

फलों के रस के प्रसंस्करण में बहुत सारे रसायनों का उपयोग होता है। पेक्टिनेज से प्रसंस्करण से रसायनमुक्त रस प्राप्त होगा। जो रस के प्राकृतिक गुणों को सुरक्षित रखेगा। एंजाइम की मदद से फलों के जूस को सुरक्षित रखने का भी प्रयोग किया गया। फलों के गूदे भी लंबे समय तक सुरक्षित रहे।

›प्राकृतिक विकल्प P06

Gkp univ approves guidelines for research excellence awards

Step undertaken to incentivise the research contributions of faculty members and students

HT Correspondent
letters@htlive.com

GORAKHPUR: To recognize and incentivize the research contributions of faculty members and students, and to promote a research-driven culture, Deen Dayal Upadhyaya Gorakhpur University (DDUGU) has taken a few initiatives. The university has announced a number of financial remunerations for faculty and students if their work gets published in national and international journals in the country.

Purpose of the awards

The Research Excellence Awards are designed to acknowledge and reward faculty members and students who publish research papers in reputed international journals indexed in Scopus and Web of Science. These journals are classified into quartiles (Q1 to Q4) based on their impact factor and citation metrics, with Q1 representing the top 25% of journals globally and Q4 the bottom 25%.

Award structure and categories

The awards have been categorized into Platinum, Diamond, Gold, Silver, and Bronze tiers, reflecting the varying levels of journal impact. The proposed cash prizes for each category are as follows: Platinum Award (Q1 Journals - Top 25%): ₹11,000 per publication, Diamond Award (Q2 Journals - Next 25%): ₹7,000 per publication, Gold Award (Q3 Journals - Next 25%): ₹5,000 per publication, Silver Award (Q4 Journals - Bottom 25%): ₹3,000 per publication, and Bronze Award (Q1-Q4 Journals - Co-authored papers): Certificate of merit.

What is Quartile Classification?

Quartile classification is a metric system used to rank academic journals based on their citation impact. Journals in Q1 are recognized as the top-tier journals, representing the top 25% globally in their respective fields. Q2 to Q4 rank progressively lower, with Q4 representing journals that fall in the bottom 25%. This classification helps researchers assess the influence and reach of their published work.

There are several additional incentives too.

Outstanding Researcher Award: An annual award that recognizes the most exceptional researchers based on multiple criteria, including publications, patents, projects, and international recognition. The award includes a cash prize of ₹21,000.

Patent Filing Support: Faculty members and students involved in the patent process will receive full financial support from the University. This financial assistance, referred to as "seed money," will promote innovation and intellectual property development.

Budget and Implementation

The total estimated budget for the Research Excellence Awards for the academic year 2024-25 is ₹5,06,000. The awards will be conferred annually during the University's Research Day celebration in February.

These awards, approved by University's Executive Council, aim to recognize and incentivize the research contributions of faculty members and students, fostering a research-driven culture on the campus.

Vice chancellor of the university Prof Poonam Tandon said, "A university is not just a center for learning but also for the creation of new knowledge. These awards aim to motivate our scholars to contribute high-quality research that meets global standards, aligning DDUGU with cutting-edge innovation."

She said, "DDUGU is committed to building a robust academic and research ecosystem. With the introduction of these awards, the University aims to elevate its research profile and encourage scholars to contribute groundbreaking knowledge that addresses both national and global challenges."

अब एआई करेगा पौधों की देखभाल, विश्लेषण कर भेजेगा अलर्ट

- डीडीयू में बॉटनी की असिस्टेंट प्रोफेसर डॉ के. सुनीता की रिसर्च को मिला पेटेंट
- मिट्टी में पोषक तत्वों, नमी, आर्द्रता और प्रकाश की निगरानी करेगा उपकरण
- डाटा एकत्रित कर उपयोगकर्ता के पास मोबाइल एप के जरिए भेजेगा अलर्ट

गोरखपुर, निज संवाददाता। किसानों को फसल की सेहत की जानकारी आर्टिफिशियल इंटेलीजेंस (एआई) से मिलेगी। फसल में सूखारोग, पोषक तत्वों की कमी, मिट्टी की नमी, आर्द्रता या प्रकाश की कमी जैसे कारकों की जानकारी मिलती रहेगी। इससे पौधों में होने वाली बीमारी को अब समय रहते रोका जा सकेगा। एआई आधारित यह उपकरण विकसित की हैं दीनदयाल उपाध्याय गोरखपुर विश्वविद्यालय के वनस्पति विज्ञान विभाग की असिस्टेंट प्रोफेसर डॉ. के. सुनीता ने। पौधों के तनाव को पहचानने की इस डिवाइस को भारत सरकार से पेटेंट मिला है।

डॉ. के. सुनीता ने बताया कि मिट्टी में नमी, वातावरण में आर्द्रता की कमी या जरूरत के मुताबिक प्रकाश न मिल पाने आदि की वजह से फसल में रोग लगते हैं। जब तक किसान इस रोग को समझ पाते हैं, तब तक बहुत देर हो चुकी होती है। बीमार पर काबू के लिए काफी प्रयास के बाद भी कई बार आशातीत परिणाम नहीं निकलता। इसका सीधा असर फसल या फलों के पैदावार पर होता है। इस पर रिसर्च किया गया।

डॉ. के. सुनीता ने बताया कि इस उपकरण से मिट्टी की नमी, तापमान, आर्द्रता और प्रकाश स्तर जैसे पर्यावरणीय कारकों का पता चल सकेगा। यह उपकरण डाटा संग्रह कर पौधों का संपूर्ण प्रोफाइल बनाएगा। मशीन लर्निंग एल्गोरिदम का उपयोग करके डाटा का विश्लेषण करेगा, जिससे तनाव के कारणों की पहचान होगी। उपयोगकर्ता के मोबाइल पर एप के माध्यम से अलर्ट और समाधान की सिफारिशें भेजेगा। स्मार्ट सिंचाई सिस्टम भी इसमें होगा। यह उपकरण लंबे समय तक पौधों में हो रहे परिवर्तनों को ट्रैक कर सकेगा।

पौधों में परिवर्तन को करेगा ट्रैक

डॉ. के सुनीता ने बताया कि यह उपकरण पौधों में तनाव के कारकों की पहचान करेगा। परिवर्तनों को ट्रैक करेगा। समय रहते अलर्ट मिलने से किसान फसल को बचाने के लिए आवश्यक कदम उठा सकेंगे।

प्रोफेसर डॉ.के. सुनीता

एक साल पहले तैयार हुआ डिजाइन

पौधों के तनाव का पता करने वाले उपकरण की डिजाइन करीब एक साल पहले तैयार हुई थी। उसके बाद डॉ सुनीता ने पेटेंट फाइल किया था। अब जाकर पेटेंट मिला है। डिजाइन को पेटेंट मिलने के बाद इसके निर्माण के लिए डॉ. सुनीता इंडस्ट्री से संपर्क करेंगी, ताकि कम लागत में इसका लाभ आम जनमानस को मिल सके।

उपकरण के लिए तैयार डिजाइन।

डीडीयू ने खोजे पांच बैक्टीरिया, पानी से आर्सेनिक होगा छू-मंतर

रिसर्च

■ ईश्वर सिंह

- पहली बार दो नए प्रजाति के बैक्टीरिया की पहचान, तीन हैं बैक्टीरिया के नए स्ट्रेन
- तीन साल रिसर्च, पानी के 300 नमूनों की हुई जांच, 91% कम हुआ आर्सेनिक

प्रो. पूनम टंडन — प्रो. डॉ. शरद कुमार मिश्रा — प्रियंका भारती

गोरखपुर। पीने के पानी में मौजूद आर्सेनिक कैंसर और दिव्यांगता की प्रमुख वजह है। आर्सेनिक के दुष्प्रभावों को कम करने वाले पांच बैक्टीरिया खोजे गए हैं। इनमें से दो नए प्रजाति के बैक्टीरिया की विश्व में पहली बार पहचान हुई है। जबकि तीन बैक्टीरिया के नए स्ट्रेन हैं, उनके परिवार की पहचान है। तलाशे गए बैक्टीरिया पीने के पानी में आर्सेनिक की मानक से 35 लाख गुना अधिक मात्रा को नियंत्रित करने में सफल रहे हैं।

तीन साल तक चली रिसर्च में यह कामयाबी पाई है डीडीयू के बायोटेक्नोलाजी विभाग ने। कुलपति प्रो. पूनम टंडन की पहल पर विवि ने बैक्टीरिया के नामकरण के प्रस्ताव के साथ प्रक्रिया के पेटेंट के लिए आवेदन कर दिया है।

यह रिसर्च की है बायोटेक्नोलॉजी के प्रोफेसर डॉ. शरद कुमार मिश्रा और शोध छात्रा प्रियंका भारती ने। प्रो. शरद ने बताया कि रिसर्च के लिए पूर्वी यूपी के गोरखपुर, बस्ती, आजमगढ़, देवीपाटन और वाराणसी मंडल के 14 जिलों का चयन किया गया। यह आर्सेनिक प्रभावित जनपद हैं। इनमें 265 ब्लॉक से पानी के 300 नमूने लिए गए। जिनमें से 22 नमूनों में आर्सेनिक की मात्रा मानक से कई गुना अधिक मिली।

मिले पांच प्रकार के बैक्टीरिया : प्रो. शरद ने बताया कि अत्यधिक आर्सेनिक वाले पानी के नमूनों की दोबारा गहनता से जांच की गई। उसमें मौजूद मिनरल और बैक्टीरिया की पहचान की गई। इसमें पांच नए बैक्टीरिया मिले। जिसमें से तीन के परिवार की जानकारी किताबों में दर्ज है। यह उसके नए स्ट्रेन हैं। जबकि दो बैक्टीरिया बिल्कुल नए हैं। उनको लेकर किसी प्रकार की जानकारी मौजूद नहीं है।

बैक्टीरिया की क्षमता को जांचने के लिए हुआ प्रयोग : प्रो. शरद ने बताया कि यह तय था कि इन पांचों बैक्टीरिया में आर्सेनिक के दुष्प्रभाव को नियंत्रित करने की क्षमता है। वह क्षमता कितनी अधिक है, इसका आंकलन करने के लिए नए सिरे से प्रयोग किया गया। इसके लिए पानी के नमूनों में आर्सेनिक की मात्रा को धीरे-धीरे बढ़ाते हुए उसके बैक्टीरिया पर प्रभाव को जांचा गया। आर्सेनिक की मात्रा को पानी में 35 लाख गुना अधिक तक किया गया। करीब 35 हजार पीपीएम मात्रा वाले पानी में पांचों बैक्टीरिया न सिर्फ मौजूद रहे बल्कि वे आर्सेनिक के प्रभाव को 75 से 91 फीसदी तक सीमित भी करते मिले।

ऐसे हुई रिसर्च

प्रो. शरद ने बताया कि सामान्य तौर पर पीने के पानी में आर्सेनिक की मात्रा 0.01 पीपीएम (पार्ट्स पर मिलियन) होता है। रिसर्च में पीने के पानी के 22 नमूने ऐसे मिले जिनमें आर्सेनिक की मात्रा मानक से 10,000 गुना अधिक थी। यह रिसर्च में सबसे बड़ा ब्रेकथ्रू मिला था।

नामकरण के लिए अंतरराष्ट्रीय संस्था को दिए सुझाव : प्रो. शरद ने बताया कि पांचों बैक्टीरिया के नामकरण के लिए विश्वविद्यालय ने सुझाव दिए हैं। यह नामकरण अंतरराष्ट्रीय संस्था इंटरनेशनल कोड ऑफ प्रोकैटिओटिका नोमेन क्लेचर करती है। जिन बैक्टीरिया के परिवार का पता है, उनके नए स्ट्रेन के लिए उनको फैमिली से जुड़े नाम सुझाए गए हैं। जबकि इस प्रयोग में मिले दो नए बैक्टीरिया का नाम उनके गुण के आधार पर सुझाया गया है।

प्रक्रिया के पेटेंट को किया आवेदन : रिसर्च से उत्साहित कुलपति प्रो. पूनम टंडन ने तत्काल इस प्रक्रिया को पेटेंट कराने के लिए विश्वविद्यालय की तरफ से आवेदन को हरी झंडी दे दी। वह पेटेंट प्रक्रिया की मानिटरिंग भी कर रही हैं।

दवा की सेहत सुधारेगा हर्बल मेडिसिन मैग्नेटिव सीव

i UPDATE

GORAKHPUR (18 Nov): अब आयुर्वेदिक दवाइयो का प्रभाव और गाढा होगा. इससे गंभीर से गंभीर बीमारियो मे लोगो को बेहतर इलाज मिल सकेगा. इसके लिए गोरखपुर यूनिवर्सिटी के वैज्ञानिको ने ऐसी मशीन इजाद की है जिससे हर्बल मेडिसिन की ग्रेडिंग की जा सकेगी. इसकी मदद से हर्बल कम्पाउंडो के प्रोसेसिंग की एक्यूरेसी और क्वालिटी सुधारने मे मदद मिलेगा. ग्रेडिंग के बाद बेहतर क्वालिटी की आयुर्वेदिक मेडिसिन डेवलप की जा सकेगी. 'हर्बल मेडिसिन मैग्नेटिक सीव' को यूके से पेटेंट मिल चुका है.

ऐसे करता काम

मैग्नेटिक सीव एक अल्टनेट तंत्र पर काम करता है. जिसमे मैग्नेटिक स्टिरर और उन्नत ग्रेडिंग टेक्निक का उपयोग किया गया है. यह मैग्नेटिक स्टिरर हर्बल कणो को उनके आकार और घनत्व के आधार पर समान रूप से ग्रेडिंग कर डिवाइड करता है. इसके साथ ही, इसमे लगे डिजिटल डिस्प्ले से यूजर स्टिरर की स्पीड और ग्रेडिंग मानको को नियंत्रित कर सकते है. इससे उत्पादो की क्वालिटी और इक्वीलिटी निर्धारित की जा सकती है.

विश्वस्तरीय मानक

प्रोजेक्ट का नेतृत्व कर रहे प्रो. शरद कुमार मिश्र ने बताया कि आयुर्वेदिक मेडिसिन अपने नेचुरल गुणो और सभी बीमारियों मे कारगर होने के नाते एलोपैथिक दवाइयो की तुलना मे अधिक प्रभावी है. ये दवाइयां बिना किसी साइड इफेक्ट के पुरानी बीमारियो के इलाज मे बहुत लाभकारी है. हालांकि, आयुर्वेदिक फॉर्मूलेशन की क्वालिटी बनाए रखना भी चिकित्सीय प्रभावशीलता के लिए बेहद जरूरी है. मैग्नेटिक सीव से न सिर्फ हर्बल कंपाउंड्स की ग्रेडिंग होगी बल्कि उनका विश्वस्तरीय मानक भी तैयार किया जा सकेगा.

01 डीडीयू के वैज्ञानिको ने किया इनोवेशन, मिलेगा अब बेहतर इलाज

प्रभाव होगा गहरा

प्रो. शरद कुमार मिश्र ने बताया कि 'आयुर्वेदिक चिकित्सा अपनी दवाओ की शुद्धता और सटीक फॉर्मूलेशन' पर निर्भर करती है. ये मशीन यह निर्धारित करती है कि प्रत्येक बैच की दवाइयां हाई क्वालिटी मानको को पूरा करे. इससे हर्बल मेडिसिन का प्रभाव गहरा होगा और रोगी का बेस्ट इलाज मिल सकेगा. प्रो. मिश्र ने कहा कि हमारा उद्देश्य पारंपरिक ज्ञान और आधुनिक प्रौद्योगिकी के बीच ब्रिज का निर्माण करना है.

मील का पत्थर

प्रो. मिश्र ने बताया कि नई मशीन हर्बल फार्मास्युटिकल उद्योग पर प्रभावी होगी और आयुर्वेदिक इलाज को वर्ल्ड लेवल पर स्थापित करेगी. यह पेटेंट रिसर्च और इनोवेशन के क्षेत्र मे एक महत्वपूर्ण मील का पत्थर साबित होगा. उन्होने आगे की योजना बताते हुए कहा कि इस संयत्र को डेली यूज मे लाने के लिए आयुर्वेदिक कम्पनियो से बात कर टेक्नोलाजी ट्रांसफर की प्रक्रिया अपनाई जाएगी. नई मशीन का इनोवेशन करने वाली टीम मे एग्रीकल्चर इंस्टिट्यूट के डायरेक्टर प्रो. शरद कुमार मिश्र के साथ ही, असिस्टेंट प्रोफेसर डॉ. निखिल रघुवंशी, डॉ. नुपुर सिंह और डाटा कैलकुलस, नोयडा के मुख्य वैज्ञानिक डॉ. विश्वेश्वर द्विवेदी शामिल रहे.

"इस इनोवेशन से यूनिवर्सिटी का मान बढ़ेगा, यह काफी खुशी देने वाला है. भविष्य मे भी इस तरह के इनोवेशन का प्रयास जारी रहेगा.

प्रो. पूनम टंडन, वीसी, डीडीयूजी

विश्वविद्यालय ने फाइल किए एक महीने में पांच पेटेंट

छह महीने के भीतर 50 पेटेंट/कॉपीराइट प्राप्त करने का लक्ष्य

स्वतंत्र चेतना

गोरखपुर। नवाचार और अनुसंधान के क्षेत्र में कदम उठाते हुए दीनदयाल उपाध्याय गोरखपुर विश्वविद्यालय ने एक महीने के भीतर पांच पेटेंट दायर किए हैं।

कुलपति प्रो पूनम टंडन के निर्देशानुसार विश्वविद्यालय ने अपनी बौद्धिक संपदा अधिकार (आईपीआर) नीति को संशोधित किया और विश्वविद्यालय के अनुसंधान और विकास सेल तथा आईपीआर सेल ने सैनशैडो कंसल्टेंट्स प्राइवेट लिमिटेड के साथ एक समझौता ज्ञापन पर हस्ताक्षर किए। इस साझेदारी का उद्देश्य पेटेंट, कॉपीराइट, भौगोलिक संकेत, ट्रेडमार्क और व्यापार रहस्य सहित विभिन्न प्रकार के आईपीआर के निष्कर्षण, फाइलिंग और निष्पादन को सुव्यवस्थित करना है। संशोधित नीति यह सुनिश्चित करती है कि सभी वित्तीय देनदारियां विश्वविद्यालय द्वारा वहन की जायेंगी, और आविष्कारक के नाम को शामिल करने के साथ बौद्धिक संपदा अधिकार विशेष रूप से विश्वविद्यालय के नाम पर रखे जायेंगे।

इस प्रक्रिया में तेजी लाने के लिए, सैनशैडो कंसल्टेंट्स प्राइवेट लिमिटेड की विशेषज्ञ टीम ने 1-2 मार्च, 2024 को विश्वविद्यालय का दौरा किया।

उन्होंने शिक्षकों और छात्रों के साथ बड़े पैमाने पर बातचीत की, जिसके परिणामस्वरूप पेटेंट के लिए 30 से अधिक प्रारंभिक विचारों और कॉपीराइट के लिए लगभग 16 प्रारंभिक विचारों का संकलन हुआ। इस सार्थक चर्चा के कारण एक महीने के भीतर गोरखपुर विश्वविद्यालय के नाम पर भारतीय पेटेंट कार्यालय (आईपीओ) में पांच पेटेंट दाखिल किए गए।

दायर पेटेंट के आविष्कारकों में जैव प्रौद्योगिकी विभाग और निदेशक, अनुसंधान और विकास सेल के प्रोफेसर दिनेश यादव, उनकी टीम के सदस्यों डॉ. ऐमन तनवीर, सुप्रिया गुप्ता और श्रुति द्विवेदी शामिल हैं। प्रोफेसर सरद कुमार मिश्रा, जैव प्रौद्योगिकी विभाग और निदेशक, कृषि और प्राकृतिक विज्ञान संस्थान, प्रियंका

भारती शामिल हैं। इंस्टीट्यूट ऑफ इंजीनियरिंग एंड टेक्नोलॉजी के सूचना प्रौद्योगिकी विभाग के सहायक प्रोफेसर डॉ. सौरभ सिंह का भी एक पेटेंट दायर किया गया है।

आप को बता दें की कुलपति द्वार यह निर्देश दिया गया था कि 1और 2 मार्च को पेशेवर फर्म के साथ बातचीत के दौरान संकाय सदस्यों द्वारा साझा किए गए विचारों को छह महीने के भीतर 50 पेटेंट/कॉपीराइट प्राप्त करने के लक्ष्य के साथ तेजी से आगे बढ़ाया जाए।

डीडीयू : शोध और पेटेंट पर मिलेगा पुरस्कार, कार्य परिषद से मिली मंजूरी

पांच श्रेणियों में बांटकर दिया जाएगा पुरस्कार, अधिकतम 86 शोधार्थी होंगे सम्मानित

संवाद न्यूज एजेंसी

गोरखपुर। दीनदयाल उपाध्याय गोरखपुर विश्वविद्यालय के शिक्षकों और शोधार्थियों के लिए अच्छी खबर है। अब अच्छे रिसर्च और पेटेंट पर उन्हें विश्वविद्यालय के मंच से न सिर्फ मेडल और सर्टिफिकेट मिलेगा, बल्कि नगद पुरस्कार जीतने का भी मौका होगा। एक शोधार्थी को 'आउटस्टैंडिंग रिसर्च अवार्ड' के रूप में 21 हजार रुपये की राशि मिलेगी। तीन से 11 हजार रुपये तक के कुल 85 पुरस्कार रखे गए हैं। इसे कार्य परिषद ने भी अपनी मंजूरी दे दी है।

एनआईआरएफ जैसी राष्ट्रीय और क्यूएस वर्ल्ड जैसी प्रतिष्ठित अंतरराष्ट्रीय रैंकिंग में शामिल होने के लिए रिसर्च पब्लिकेशन और पेटेंट का सबसे बड़ा योगदान होता है। रिसर्च और पेटेंट को बढ़ावा देने के लिए डीडीयू प्रशासन ने 'क्वारटाइल रिसर्च अवॉर्ड' देने की योजना बनाई है। इसके लिए पिछले दिनों ही तीन सदस्यीय समिति गठित की गई थी। समिति की सिफारिशों पर कार्य परिषद ने मुहर लगा दी है।

डीडीयू में कई शिक्षकों और विद्यार्थियों ने शोध और पेटेंट के क्षेत्र में उत्कृष्ट कार्य किया है, लेकिन विश्वविद्यालय के अंदर और बाहर उन्हें कम ही ख्याति मिली है। क्वारटाइल रिसर्च अवार्ड फरवरी में रिसर्च डे पर उत्कृष्ट शोधार्थियों को प्रदान किया जाएगा।

5.06

लाख पुरस्कार के लिए अनुमानित बजट पास, 21 हजार रुपये मिलेंगे आउटस्टैंडिंग रिसर्च अवार्ड

क्यू 1 जर्नल्स में प्रकाशन पर 11 हजार

क्यू 1 जर्नल्स में प्रकाशन पर प्लेटिनम पुरस्कार दिया जाएगा। इसके तहत 11 हजार रुपये की राशि दी जाएगी। क्यू 2 में डायमंड पुरस्कार के रूप में 7 हजार, क्यू 3 में गोल्ड के तहत 5 हजार, क्यू 4 में सिल्वर के रूप में 3 हजार रुपये मिलेंगे। क्यू 1 से क्यू 4 तक के जर्नल्स में सह लेखक को ब्रॉन्ज के रूप में प्रमाणपत्र प्रदान कर सम्मानित किया जाएगा। प्रकाशन, पेटेंट, परियोजनाओं और अंतरराष्ट्रीय स्तर पर प्राप्त सम्मान के लिए उत्कृष्टता पुरस्कार प्रदान किया जाएगा।

इम्पैक्ट फैक्टर होगा चयन का आधार

स्कोपस और वेब ऑफ साइंस में सूचीबद्ध प्रतिष्ठित अंतरराष्ट्रीय जर्नल्स में प्रकाशन पर पुरस्कार प्रदान किए जाएंगे। जर्नल्स को उनके इम्पैक्ट फैक्टर और उद्धरण मेट्रिक्स के आधार पर क्वारटाइल्स (क्यू1 से क्यू4) में वर्गीकृत किया गया है। इसमें क्यू1 शीर्ष 25 प्रतिशत जर्नल्स का प्रतिनिधित्व करता है और क्यू 4 निचले 25 प्रतिशत का।

इन पुरस्कारों का उद्देश्य शिक्षकों और छात्रों के अनुसंधान में योगदान को पहचानना और प्रोत्साहित करना है। इससे शोध-उन्मुख संस्कृति का विकास होगा। इसके लिए 5.06 लाख रुपये के बजट का प्रावधान किया गया है। विश्वविद्यालय में बड़े मंच से चयनित शोधार्थियों को पुरस्कृत किया जाएगा।

- प्रो. पूनम टंडन, कुलपति, डीडीयू

वायरस पहचान कर फसल नष्ट होने से बचाएगी बायोसेंसर किट

रिसर्च

- डीडीयू के बायोटेक्नोलॉजी के प्रो. राजर्षि गौर का शोध 'इंडियन पेटेंट' में प्रकाशित
- बायोसेंसर को पत्ते के नमूनों से संपर्क करने पर संकेत मिलेगा संक्रमण है या नहीं

प्रो. राजर्षि गौर।

गोरखपुर, निज संवाददाता। पर्यावरण असंतुलन के कारण सब्जियों समेत विभिन्न मौसमी फसलों में संक्रमण अब आम बात हो गई है। फसलों में कई बार वायरस की जानकारी नहीं हो पाती और आम इंसान उसका इस्तेमाल कर गंभीर रूप से बीमार पड़ जाता है। कई बार संक्रमण इतना तेजी से फैलता है कि पूरी की पूरी फसल नष्ट हो जाती है। लेकिन अब समय रहते वायरस का पता चल सकेगा। यह संभव होगा बायोसेंसर किट से।

गोरखपुर विश्वविद्यालय के बायोटेक्नोलॉजी विभाग के अध्यक्ष प्रो. राजर्षि गौर ने इसे लेकर शोध किया है। इंडियन पेटेंट में उनका शोध अगस्त 2024 में प्रकाशित हुआ है।

प्रो. राजर्षि गौर ने मोदी यूनिवर्सिटी, राजस्थान के डॉ. राकेश वर्मा के साथ मिलकर पौधों में लगने वाले वायरस पर शोध शुरू किया था। करीब चार वर्ष के शोध के बाद सब्जी और गन्ना आदि में लगने वाले वायरस का पता लगाने के लिए किट का इजाद किया है। बायोसेंसर को संक्रमित पत्ते के नमूनों के साथ संपर्क करने पर संकेत मिलेगा कि वे संक्रमित हैं या नहीं।

99.9 प्रतिशत है सटीकता : लीफकर्ल वायरस, मोजैक वायरस, येन फ्लोइंग वायरस फसल को नुकसान पहुंचाता है। वायरस के संपर्क में आते ही उत्पादन कम कर देता। संक्रमण बढ़ने पर 90 फीसदी फसल को खराब कर देता। किचन गार्डेन व फूलों को खराब कर देता है। इस प्रकार के वायरस के संक्रमण को पहचान कर सेंसर किसान को देगा, जिससे कि वह समय रहते कीटनाशकों का छिड़काव कर सके। इसकी सटीकता करीब 99.9 फीसदी है।

ऐसे काम करेगी बायोसेंसर किट

यह बायोसेंसर किट सेमी कंडक्टर की तरह काम करती है। इसके सिलकन वेफर पर गोल्ड नैनो पार्टिकल लगाया जाता है। इसको संक्रमित पौधे के नमूनों के साथ संपर्क करने पर किट से एक सिग्नल जनरेट होगा। इस सिग्नल का अध्ययन करने पर सम्बंधित वायरस का पता लग सकेगा। इससे समय रहते दवा का छिड़काव कर फसल बचाई जा सकेगी। यदि दवा छिड़काव से वायरस ठीक नहीं होता तो फसल को बाहर निकालकर अन्य फसलों को सुरक्षित किया जा सकेगा।

डीडीयू ने पेटेंट के लिए किया आवेदन : प्रो. राजर्षि गौर द्वारा डिजाइन किए गए इस बायोसेंसर किट से सब्जियों और अन्य फसलों पर किए गए शोध को लेकर विस्तृत शोध प्रकाशित हुआ है। अब इसके पेटेंट के लिए डीडीयू प्रशासन ने आवेदन किया है।

वैज्ञानिक अनुसंधान में दुनिया देख रही देश की प्रगति

अविवि में स्वदेशी तकनीक की आवश्यकता एवं विकसित भारत विषय पर हुई संगोष्ठी

संवाद न्यूज एजेंसी

अवध विश्वविद्यालय में आयोजित संगोष्ठी में मौजूद शिक्षक व विद्यार्थी। -संवाद

अयोध्या। डॉ. राममनोहर लोहिया अवध विश्वविद्यालय के सूक्ष्मजीव विज्ञान विभाग में बुधवार को माइक्रोबायोलॉजिस्ट सोसाइटी ऑफ इंडिया और विज्ञान भारती अवध प्रांत लखनऊ की ओर से राष्ट्रीय विज्ञान दिवस पर संगोष्ठी का आयोजन किया गया।

'स्वदेशी तकनीक की आवश्यकता एवं विकसित भारत' विषय पर आयोजित संगोष्ठी के मुख्य वक्ता गोरखपुर विश्वविद्यालय में बायोटेक्नोलॉजी विभाग के प्रो. दिनेश यादव ने कहा कि देश में खगोल विज्ञान, नवीकरणीय ऊर्जा, जैव प्रौद्योगिकी और अंतरिक्ष अनुसंधान के क्षेत्र में उल्लेखनीय वृद्धि देखी गई है। विज्ञान के क्षेत्र में आनंद मोहन चक्रवर्ती, डॉ. अशोक पांडेय व वार्ष्णेय का महत्वपूर्ण योगदान रहा है। उन्होंने अपने सूक्ष्मजीवों के जीनोम व उसके उपयोगी महत्वपूर्ण जीन की संरचना के अध्ययन पर भी विस्तार से छात्र-छात्राओं को जानकारी दी।

संगोष्ठी की अध्यक्षता करते हुए विज्ञान संकायाध्यक्ष प्रो. राजीव गौड़ ने बताया कि वैज्ञानिक अनुसंधान में देश की प्रगति को विश्व स्तर पर स्वीकार्यता मिली है। ग्लोबल इनोवेशन इंडेक्स (जीआईआई) में देश पर्याप्त प्रगति कर रहा है। विज्ञान के क्षेत्र में नित नए प्रयोग में हम किसी से पीछे नहीं है। कार्यक्रम में सूक्ष्म जीव विज्ञान विभागाध्यक्ष प्रो. तुहिना वर्मा ने बताया कि आज मेक इंडिया कार्यक्रम भारत को विकसित बनाने के लिए बहुत उपयोगी साबित हो रहा है। प्रो. शैलेंद्र कुमार ने बताया कि सर सीवी के ''रमन प्रभाव'' की खोज की स्मृति में राष्ट्रीय विज्ञान दिवस प्रतिवर्ष 28 फरवरी को मनाया जाता है। राष्ट्रीय विज्ञान दिवस का उद्देश्य विज्ञान संचार गतिविधियों को बढ़ावा देने के साथ वैज्ञानिक जांच और सहयोग को प्रोत्साहित करना है। इस मौके पर इंजीनियर परिमल तिवारी, डॉ. विनीत कुमार सिंह, डॉ. रंजन सिंह मौजूद रहे।

बौद्धिक संपदा अधिकार प्रेरित अनुसंधान को मिलेगा प्रोत्साहन : प्रो. पूनम टंडन

संवाद न्यूज एजेंसी

गोरखपुर। दीनदयाल उपाध्याय गोरखपुर विश्वविद्यालय में अनुसंधान की गुणवत्ता बढ़ाने और शिक्षकों और शोधकर्ताओं को बौद्धिक संपदा अधिकारों (आईपीआर) के लिए प्रोत्साहित करने के प्रयास किए जा रहे हैं। अनुसंधान को बौद्धिक संपदा अधिकार बनाने के लिए शिक्षकों को विश्वविद्यालय प्रेरित करेगा।

कुलपति प्रो. पूनम टंडन ने बताया कि पेटेंट, कॉपीराइट, भौगोलिक संकेत, ट्रेडमार्क, ट्रेड सीक्रेट और कई अन्य के रूप में बौद्धिक संपदा अधिकार गुणवत्तापूर्ण शिक्षा के प्रमुख संकेतक हैं, तथा अनुसंधान का अभिन्न अंग बन गए हैं। शिक्षकों और शोधकर्ताओं को शोध से आईपीआर अवसरों का लाभ उठाने के लिए प्रोत्साहित करने के लिए प्रयास किए गए हैं। इसी क्रम में विश्वविद्यालय की आईपीआर नीति को संशोधित किया गया है।

आईपीआर दाखिल करने और निष्पादन के लिए वित्तीय सहायता डीडीयू वहन करेगा

अब आईपीआर दाखिल करने और निष्पादन के लिए संपूर्ण वित्तीय सहायता विश्वविद्यालय द्वारा वहन की जाएगी।

शोधकर्ताओं के लिए आज व कल आयोजित होगा कार्यक्रम

शिक्षकों और शोधकर्ताओं के शोध कार्य से पेटेंट और कॉपीराइट प्राप्त करने के लिए पेशेवरों को नियुक्त कर रहा है। इस उद्देश्य से, विश्वविद्यालय शुक्रवार और शनिवार को एक विशेष कार्यक्रम का आयोजन कर रहा है। शुक्रवार को पेशेवर विशेषज्ञों के साथ शिक्षकों और शोधकर्ताओं के लिए एक कार्यक्रम आयोजित किया जा रहा है। शनिवार को विज्ञान और प्रौद्योगिकी परिषद (सीएसटी), उत्तर प्रदेश द्वारा प्रायोजित बौद्धिक संपदा अधिकार (आईपीआर) पर जागरूकता कार्यशाला अनुसंधान और विकास सेल और आईपीआर सेल, गोरखपुर विश्वविद्यालय द्वारा संयुक्त रूप से की जा रही है।

धूप और पानी जरूरत से कम मिले तो भी न करें चिंता, नहीं मुरझाएंगे पौधे

कृषि विज्ञानी की 10 वर्षों की मेहनत ने जगाई उम्मीद, मक्का सहित मोटे अनाज के पौधों पर प्रयोग सफल, पर्यावरण संरक्षण में भी मिलेगी मदद

जागरण विशेष

डा. राकेश राय ● जागरण

गोरखपुर: खेती किसानी में मौसम कैसा है यह बेहद महत्वपूर्ण होता है। अच्छी फसल के लिए पर्याप्त धूप और पानी की आवश्यकता होती है, परन्तु परिस्थितियां सदैव अनुकूल नहीं होती हैं। इससे फसल की गुणवत्ता और उत्पादकता दोनों प्रभावित होती है। इसका असर किसानों की आमदनी पर सीधे तौर पड़ता है, लेकिन अब चाहें तापमान कम हो या ज्यादा, सूरज की रोशनी और पर्याप्त पानी न भी मिले, ऐसी विपरीत परिस्थिति में भी पौधे संश्लेषण कर समान मात्रा में आक्सीजन बनाते रहेंगे। इस कारण फसल की उत्पादकता और गुणवत्ता अच्छी रहेगी। 10 वर्षों तक दीन दयाल उपाध्याय गोरखपुर विश्वविद्यालय के सह आचार्य डा.रामवंत गुप्ता ने इस पर शोध किया। अब शोध का सकारात्मक प्रभाव खेती में सूरज की रोशनी और पानी की कमी से होने वाली समस्या को समाप्त करने में मदद करेगा। भारत सरकार के पेटेंट कार्यालय ने भी उनके शोध को स्वीकृति प्रदान कर दी है। इस शोध का प्रभाव सिर्फ कृषि क्षेत्र पर ही नहीं पड़ेगा। बल्कि पर्यावरण संरक्षण की दृष्टि से भी इसका उपयोग पौधों के विकास के लिए किया जा सकता है।

गेहूं,मक्का और मोटे अनाज पर प्रयोग सफल रहा: डा. रामवंत के अनुसार मैगनीज सल्फेट ऐसा रसायन है, जो विपरीत परिस्थितियों में भी प्रकाश संश्लेषण प्रक्रिया को प्रभावित नहीं होने देता। यह पौधों का एबायोटिक स्ट्रेस (अजैविक तनाव) दूर कर उन्हें निरंतर क्रियाशील रहने के लिए प्रेरित करता है। डा रामवंत ने अपने शोध को गेहूं, मक्का सहित मोटे अनाजों के पौधों पर प्रयोग के दौरान सफल पाया है। स्प्रिंगर नेचर और टेलर एंड फ्रांसिस जैसे प्रतिष्ठित जर्नल ने शोध से जुड़े छह शोधपत्रों का प्रकाशन किया है। वहीं अब पेटेंट प्रमाण पत्र प्राप्त हो जाने के बाद डा. रामवंत अपने शोध के संबंध में कृषि उत्पाद निर्माण कंपनियों से संपर्क कर रहे हैं। ताकि किसानों तक इस शोध से हुए फायदों को पहुंचाया जा सके।

प्रकाश संश्लेषण की प्रक्रिया में ऐसे मदद करता है मैगनीज सल्फेट

डा. रामवंत गुप्ता के अनुसार प्रकाश संश्लेषण की प्रक्रिया पौधे रासायनिक ऊर्जा पैदा करते है। इस दौरान बाई प्रोडक्ट के रूप में आक्सीजन का निर्माण होता है। यह प्रक्रिया पानी की केमिकल बांडिंग टूटने पर पूरी होती है। इसे वाटर इवाल्विंग काम्प्लेक्स या वाटर स्प्लीटिंग काम्प्लेक्स कहते है, ऐसा तभी होता है जब पौधों को पानी, तापमान और रोशनी एक निश्चित मात्रा में मिले। इनकी कमी और अधिकता से प्रकाश संश्लेषण की प्रक्रिया प्रभावित होती है और पौधे एबायोटिक स्ट्रेस में चले जाते है। इससे आक्सीजन का निर्माण या तो कम या फिर बंद हो जाता है और सुपर आक्साइड रेडिकल्स या टाक्सिक कंपाउंड (जहर) बनाने लगते है। इसका कारण प्रोटीन से बने उस क्लस्टर का टूटना होता है, जिसकी वजह से पौधे में आक्सीजन बनती है। डा. रामवंत के अनुसार मैगनीज सल्फेट का घोल बनाकर पौधों की जड़ों में भी डाला जा सकता है और पत्तों पर छिड़काव भी किया जा सकता है। दोनों ही माध्यम से पौधों पर इसका समान रूप से प्रभाव पड़ेगा।

पौधे पर मैगनीज सल्फेट का प्रयोग करने के दौरान आक्सीजन उत्सर्जन की मात्रा को माप करते डा. रामवंत गुप्ता ● जागरण

डा. रामवंत का शोध पौधों और मनुष्यों दोनों के लिए उपयोगी है। किसी भी शोध का मल्टी टास्किंग लक्ष्य होना चाहिए, जोकि इस शोध से पूरा हो रहा है। पेटेंट प्राप्त होने के बाद शोध को किसानों तक पहुंचाने में विश्वविद्यालय प्रशासन डा. रामवंत की हर संभव मदद करेगा।

प्रो. पूनम टंडन, कुलपति, दीन दयाल उपाध्याय गोरखपुर विश्वविद्यालय

अतिरिक्त सामग्री पढ़ने के लिए स्कैन करें।

डीडीयू ने दो महीने में दाखिल किए 10 पेटेंट

गोरखपुर, निज संवाददाता। दीनदयाल उपाध्याय गोरखपुर विश्वविद्यालय प्रशासन द्वारा आईपीआर नीति में किए गए बदलाव का नतीजा दिखने लगा है। डीडीयू ने करीब दो महीने में 10 पेटेंट के लिए आवेदन किया है। छह महीने में 50 पेटेंट के लिए आवेदन करने का लक्ष्य रखने वाले डीडीयू के लिए यह इसलिए संभव हो पा रहा है, क्योंकि अब वित्तीय और तकनीकी मदद खुद दे रहा है।

अंतरराष्ट्रीय और राष्ट्रीय स्तर की विभिन्न रैंकिंग में स्थान पाने के लिए पेटेंट अहम रोल निभाता है। दो महीने पहले तक डीडीयू के शिक्षक व शोधार्थी कुछ नवाचार करते थे तो उन्हें खुद ही पेटेंट कराना पड़ता था। पेटेंट कराने की पेचीदगी, लंबा समय और मोटे खर्च को देखते हुए विद्यार्थी-शिक्षक पेटेंट की तरफ ध्यान नहीं दे पाते थे। जैव प्रौद्योगिकी विभाग से प्रो. दिनेश यादव और प्रो. राजर्षि गौड़ व उनकी टीम की तरफ से तीन, वनस्पति विज्ञान विभाग से प्रो. पूजा सिंह की टीम से एक, भौतिकी के डॉ. मनिंद्र कुमार व डॉ. प्रशांत शाही की टीम द्वारा एक पेटेंट के लिए आवेदन किया गया है।

एमओयू का भी मिल रहा फायदा

डीडीयू के आरडीसी और आईपीआर सेल ने सैनशैडो कंसल्टेंट्स के साथ एमओयू किया था। इसके तहत उनकटीम द्वारा आईपीआर, पेटेंट और कॉपीराइट के बारे में विचार सामने आए थे।

विश्वविद्यालय का पेटेंट, कृषि क्षेत्र के लिए एक बड़ी उपलब्धिः कुलपति

☐ क्रूसिफेरोस फसलों को कीटों से बचाने के लिए नया कीट पालन/अंडे देने का कक्ष पेटेंट प्रकाशित

कुलपति ने दी बधाई

स्वतंत्र चेतना गोरखपुर। दीनदयाल उपाध्याय गोरखपुर विश्वविद्यालय के प्राणी विज्ञान विभाग के सहायक आचार्य डॉ. सुशील कुमार और उनकी शोध छात्रा ताहिरा अंसारी ने क्रूसिफेरोस फसलों जैसे गोभी और पत्ता गोभी को नुकसान पहुंचाने वाले डायमंड बैक मोथ जैसे कीटों के प्रभावी प्रबंधन के लिए एक अभिनव, टिकाऊ और लागत-प्रभावी कीट संवर्धन चैंबर कीट पालन/अंडे देने का कक्ष विकसित किया है। यह पेटेंट भारत सरकार के पेटेंट कार्यालय में पंजीकृत और प्रकाशित किया गया है। यह नया उपकरण कीटों के उभरने, संभोग करने और अंडे देने के लिए अनुकूल प्रजनन और पालन-पोषण का वातावरण प्रदान करता है। इसकी संरचना में लकड़ी का आधार, पतली लकड़ी की छड़ें, हल्का प्लास्टिक जाल और मलमल का कपड़ा उपयोग किया गया है। यह चैंबर उपयोग में सरल, टिकाऊ और पर्यावरण-अनुकूल है, जो अनुसंधान और औद्योगिक प्रयोगों ...

इस उपलब्धि पर विश्वविद्यालय की कुलपति प्रो. पूनम टंडन ने खुशी व्यक्त करते हुए शोधकर्ताओं को बधाई देते हुए कहा, यह पेटेंट न केवल दीनदयाल उपाध्याय गोरखपुर विश्वविद्यालय के लिए गर्व की बात है, बल्कि यह कृषि क्षेत्र के लिए एक बड़ी उपलब्धि है। कीट प्रबंधन और जैविक नियंत्रण के क्षेत्र में यह नवाचार न केवल पर्यावरण-अनुकूल है, बल्कि लागत-प्रभावी भी है। मुझे विश्वास है कि यह आविष्कार वैज्ञानिक अनुसंधान और औद्योगिक प्रयोगों में एक नई दिशा ...

शोध पत्र स्कोपस इंडेक्स जर्नल में हो प्रकाशित : कुलपति

☐ प्रोजेक्ट्स एवं ग्रांट लेकर आए विभाग सभी विभागों में होगी प्लेसमेंट सेल की स्थापनाः कुलपति

स्वतंत्र चेतना

गोरखपुर। दीनदयाल उपाध्याय गोरखपुर विश्वविद्यालय की कुलपति प्रो पूनम टंडन ने शुक्रवार को कला संकाय के 12 विभागों द्वारा उपलब्ध कराई गई एकेडमिक ऑडिट रिपोर्ट की विभागवार समीक्षा की। बैठक में कुलपति ने कहा कि सभी विभाग प्रयास करें कि उनके शोध पत्र स्कोपस इंडेक्स जर्नल में प्रकाशित हों। कुलपति ने जोर देकर कहा की विभाग प्रोजेक्ट्स एवं ग्रांट लेकर आए। **विश्वविद्यालय के नाम से हो पेटेंट**

कुलपति ने कहा कि सभी शिक्षक तथा शोधकर्ताओं के पेटेंट तथा कॉपीराइट विश्वविद्यालय के नाम पर हो। विश्वविद्यालय ने आईपीआर सेल के जरिए पेटेंट और कॉपीराइट फाइल करने में सहायता तथा उस पर पर होने वाले खर्च को वहन करने की व्यवस्था की है। बैठक में दौरान कुलपति ने फाइन आर्ट्स विभाग से कंसल्टेंसी शुरू करने के लिए कहा।

सभी विभागों में स्थापित होगा प्लेसमेंट सेल

कुलपति ने कहा कि सभी विभागों में प्लेसमेंट सेल स्थापित किया जाए। प्लेसमेंट सेल के साथ विद्यार्थियों को भी जोड़ा जाए तथा यह सेल विद्यार्थियों की आवश्यकता अनुसार तथा रोजगारपरक उद्योग एवं अन्य क्षेत्रों में कार्य कर रही संस्थाओं को मेल भेज कर उनसे संपर्क स्थापित करें।

बैठक में संकायाध्यक्ष, विभागाध्यक्ष, कुलसचिव शिक्षक तथा आईक्यूएसी के प्रतिनिधि शामिल हुए।

Gkp univ approves guidelines for research excellence awards

Step undertaken to incentivise the research contributions of faculty members and students

HT Correspondent

Letters@htlive.com

GORAKHPUR: To recognize and incentivize the research contributions of faculty members and students, and to promote a research-driven culture, Deen Dayal Upadhyaya Gorakhpur University (DDUGU) has taken a few initiatives. The university has announced a number of financial remunerations for faculty and students if their work gets published in national and international journals in the country.

Purpose of the awards

The Research Excellence Awards are designed to acknowledge and reward faculty members and students who publish research papers in reputed international journals indexed in Scopus and Web of Science. These tiles (Q1 to Q4) based on their impact factor and citation metrics, with Q1 representing the top 25% of journals globally and Q4 the bottom 25%.

Award structure and categories

The awards have been categorized into Platinum, Diamond, Gold, Silver, and Bronze tiers, reflecting the varying levels of journal impact. The proposed cash prizes for each category are as follows: Platinum Award (Q1 Journals - Top 25%): ₹11,000 per publication, Diamond Award (Q2 Journals - Next 25%): ₹7,000 per publication, Gold Award (Q3 Journals - Next 25%): ₹5,000 per publication, Silver Award (Q4 Journals - Bottom 25%): ₹3,000 per publication, and Bronze Award (Q1-Q4 Journals - Co-authored papers): Certificate of merit.

What is Quartile Classification?

Quartile classification is a metric system used to rank academic journals based on their citation nized as the top-tier journals, representing the top 25% globally in their respective fields. Q2 to Q4 rank progressively lower, with Q4 representing journals that fall in the bottom 25%. This classification helps researchers assess the influence and reach of their published work.

There are several additional incentives too.

Outstanding Researcher Award: An annual award that recognizes the most exceptional researchers based on multiple criteria, including publications, patents, projects, and international recognition. The award includes a cash prize of ₹21,000.

Patent Filing Support: Faculty members and students involved in the patent process will receive full financial support from the University. This financial assistance, referred to as "seed money," will promote innovation and intellectual property development.

Budget and Implementation

the Research Excellence Awards for the academic year 2024-25 is ₹5,06,000. The awards will be conferred annually during the University's Research Day celebration in February.

These awards, approved by University's Executive Council, aim to recognize and incentivize the research contributions of faculty members and students, fostering a research-driven culture on the campus.

Vice chancellor of the university Prof Poonam Tandon said, "A university is not just a center for learning but also for the creation of new knowledge. These awards aim to motivate our scholars to contribute high-quality research that meets global standards, aligning DDUGU with cutting-edge innovation."

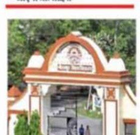
She said, "DDUGU is committed to building a robust academic and research ecosystem. With the introduction of these awards, the University aims to elevate its research profile and encourage scholars to contribute groundbreaking knowledge that addresses bot...

एआइ और मशीन लर्निंग से होगी पौधों की पहचान, जानेंगे फायदा-नुकसान

डा. राकेश राय • जागरण

- गोवि के वनस्पति विज्ञान विभाग में एआइ और मशीन लर्निंग पर शोध के लिए बनी योजना
- नए सत्र से शोधार्थियों को इस नए विषय पर शोध के लिए किया जाएगा प्रोत्साहित

गोरखपुर : पौधों की पहचान और उसके गुण-दोष की जानकारी के लिए एआइ (आर्टिफिशियल इंटेलिजेंस) और मशीन लर्निंग के प्रयोग करने का रास्ता खुलेगा। पौधों की नस्ल सुधारने का तरीका भी पता चलेगा। दीनदयाल उपाध्याय गोरखपुर विश्वविद्यालय के वनस्पति विज्ञान विभाग ने इसे लेकर शोध से जुड़ी व्यापक योजना तैयार की है, जिसे नए सत्र से लागू किया जाएगा। इस विषय पर शोध के लिए शोधार्थियों को प्रोत्साहित किया जाएगा। विभाग ने इस विषय को अपनी शोध योजना में प्रमुख रूप से स्थान दिया है। इसके लिए विभाग में अलग विंग बनाने का निर्णय भी लिया है। विंग को संचालित करने की जिम्मेदारी विभाग के शिक्षक डा. रामवंत गुप्ता को सौंपी है।



वनस्पति विज्ञान विभाग में वर्तमान में ज्यादातर शोध परंपरागत विषयों पर ही होते हैं। यहां होने वाले शोध के विषय अभी भी आधुनिक तकनीक से दूर हैं। इसे ध्यान में रखकर ही विभाग ने एआइ और मशीन लर्निंग को शोध का विषय बनाने का निर्णय लिया है। इस तकनीक से पौधों की पहचान तो आसान होगी ही, उसके चरित्र की जानकारी भी आसानी से मिल जाएगी।

पौधों की कार्बन डाई आक्साइड ग्रहण करने की क्षमता पर होगा शोध

विभाग ने यह भी निर्णय लिया है कि पर्यावरण संतुलन में विश्वविद्यालय की भूमिका सुनिश्चित करने के लिए पौधों की कार्बन डाई आक्साइड ग्रहण करने की क्षमता बढ़ाने पर भी शोध किया जाएगा। इसके लिए ऐसे पौधों को चुना जाएगा तो बड़ी संख्या में पृथ्वी पर मौजूद है पर कार्बन डाई आक्साइड ग्रहण करने में सापेक्षिक रूप से अक्षम है। इसके लिए विश्वविद्यालय को प्रोजेक्ट भी प्राप्त हो चुका है। ऐसे में इस विषय में शोध कार्य करने की राह आसान हो चुकी है।

वनस्पति विज्ञान विभाग के शिक्षकों ने अपने शोध को आधुनिक तकनीक से जोड़ने की उत्साहित करने वाली योजना बनाई है। इससे विभाग में शोध का स्तर उठेगा और शोध की दृष्टि से विश्वविद्यालय देश-दुनिया के विश्वविद्यालयों की कतार में खड़ा दिखेगा। पर्यावरण संतुलन बनाने में भी अपना योगदान सुनिश्चित कर सकेगा।

प्रो. पूनम टंडन, कुलपति, दीदउ गोरखपुर विश्वविद्यालय

यदि पौधे वातावरण के लिए नुकसानदेह हैं तो उन्हें नष्ट करना की योजना बनाई जा सकेगी और यदि फायदेमंद है तो उन्हें बढ़ावा देने को लेकर योजना बनाने का रास्ता खुलेगा। अभी तक इसके लिए परंपरागत तरीके का इस्तेमाल पर ही विभाग में शोध होता रहा है। नई तकनीक के इस्तेमाल में विभाग के शोध का स्तर दायरा बढ़ेगा और उसके विश्वव्यापी होने की संभावना भी बढ़ जाएगी। विभाग का यह भी मानना है कि शोध में आधुनिक तकनीक को बढ़ावा देने से उसे देशभर के बेहतर शोधार्थी मिलेंगे, जिससे शोध की गुणवत्ता में तो बढ़ोतरी होगी ही, विश्वविद्यालय का उच्च शिक्षा के क्षेत्र में नाम भी ऊंचा होगा।

मेडल से सम्मानित होंगे गोवि के शोधार्थी

फरवरी के दूसरे सप्ताह में शोध दिवस पर होगा शोधार्थियों का सम्मान कार्यक्रम

जागरण संवाददाता, गोरखपुर : शोधार्थियों को बेहतर शोध के लिए सम्मान से प्रोत्साहित करने की योजना दीनदयाल उपाध्याय गोरखपुर विश्वविद्यालय प्रशासन ने बनाई है। जिसे क्वार्टाइल रिसर्च अवार्ड नाम दिया है।

इस सम्मान के लिए शोधार्थी के चयन का आधार प्रतिष्ठित जर्नल्स में शोधपत्रों का प्रकाशन होगा। जर्नल्स की निर्धारित प्रतिष्ठा के आधार पर शोधार्थियों को प्लेटिनम, डायमंड, गोल्ड, सिल्वर और ब्रांच मेडल से सम्मानित किया जाएगा। इस योजना का प्रारूप तैयार करने के लिए विश्वविद्यालय प्रशासन ने समिति का गठन कर दिया है। अगले वर्ष फरवरी ...

को उनकी प्रतिष्ठा के अनुसार चार भाग में विभाजित किया गया है। क्वार्टाइल-1, 2, 3 व 4। क्वार्टाइल-1 के दायरे में आने वाले शोधपत्रों में जिन शोधार्थियों का शोधपत्र प्रकाशित होगा, उन्हें प्लेटिनम मेडल दिया ...

शोध पर हमारा विशेष फोकस है। इसे ध्यान में रखकर ही शोधार्थियों को तरह-तरह के मेडल के जरिये सम्मानित करने की योजना बनाई गई है। योजना का प्रारूप तैयार करने के लिए कमेटी का गठन कर दिया गया है। अधिक से अधिक शोध हो, इसके लिए सत्र 2023-24 के लिए शोध पंजीकरण की प्रक्रिया आगे बढ़ाई गई है। जल्द 2024-25 के लिए शोध पात्रता परीक्षा आयोजित करने की योजना है। सभी विभागों में शिक्षकों की नियुक्ति की प्रक्रिया भी तेजी से चल रही है। स्व-वित्तपोषित पाठ्यक्रम के लिए अनुबंध आधारित शिक्षक नियुक्त किए जा रहे हैं।

प्रो. पूनम टंडन, कुलपति, दीदउ गोरखपुर विश्वविद्यालय

दृष्टि यह मेडल सहयोगी शोधार्थी को देने की योजना है। यह सम्मान पाने के हकदार केवल शोधछात्र ही नहीं शिक्षक भी होंगे। सम्मान में मेडल के साथ टोकन के तौर पर और क्या दिया जाएगा, इसका निर्धारण भी कमेटी ...

विश्वविद्यालय में मानविकी के विषयों पर शोध तो बहुत हो रहा पर पटल पर नहीं आ पा रहा।

दो प्रतिशत विज्ञानियों में बढ़ेगी गोवि की भागीदारी : विश्वविद्यालय प्रशासन का मानना है कि शोधपत्रों के प्रकाशन ...

अनाज और सब्जियों के लिए प्रमुख शोध केंद्र पर उभर रहा डीडीयू का कृषि संकाय

राष्ट्रीय हिन्दी दैनिक सुपर फास्ट टाइम्स (कुशीनगर/गोरखपुर/बाराबंकी)

विभागों में स्वस्थ प्रतिस्पर्धा हमारी ताकत- प्रो.पूनम टंडन

- नेचर इंडेक्स रैंकिंग में कंट्रीब्यूट करने वालों को सम्मानित करेगा विश्वविद्यालय
- शोध क्षेत्र में विशेष योगदान करने वाले शिक्षक और छात्रों को मिलेगा आउटस्टैंडिंग रिसर्च अवार्ड

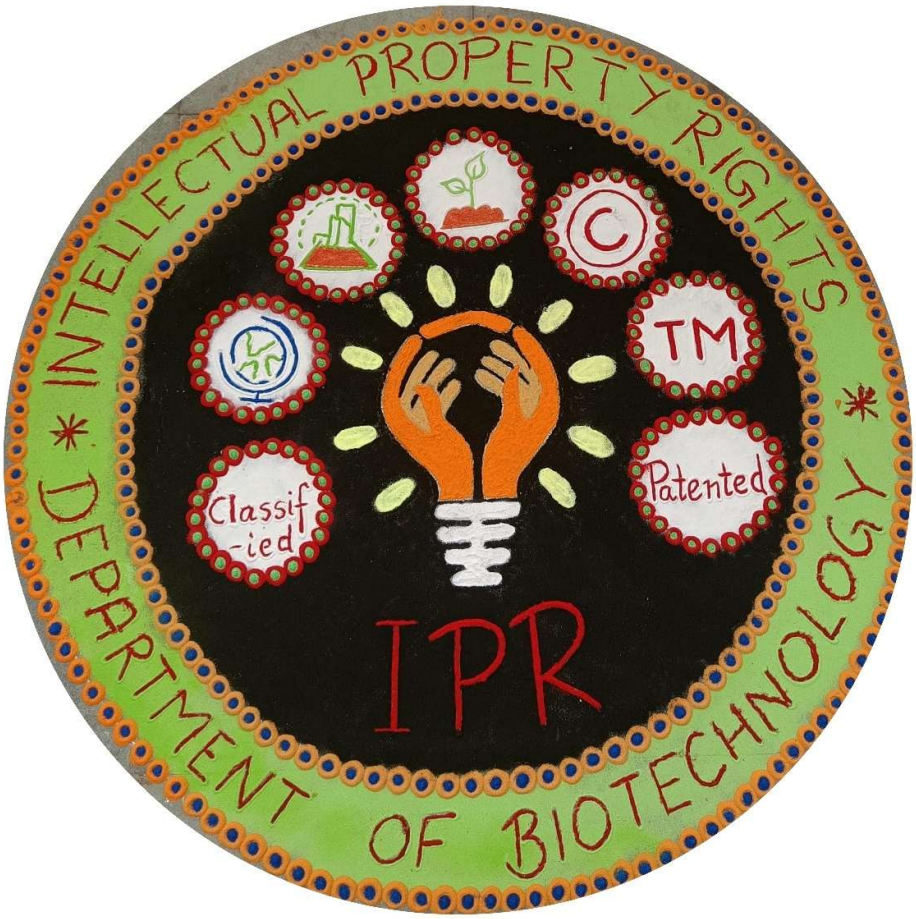
गोरखपुर। सुपर फास्ट टाइम्स

दीनदयाल उपाध्याय गोरखपुर विश्वविद्यालय की कुलपति प्रोफेसर पूनम टंडन ने आज विज्ञान संकाय के विभागों द्वारा उपलब्ध ... आउटस्टैंडिंग रिसर्च अवार्ड की शुरूआत करेगा। शोध के क्षेत्र में विशेष योगदान तथा गुणवत्ता पर शोध करने वाले शिक्षकों तथा शोध छात्रों को इस अवार्ड से सम्मानित किया जाएगा। इसके लिए कुलपति ... तैयार करें। इसके साथ ही कुलपति ने कहा कि विज्ञान संकाय के जो भी शिक्षक तथा शोध छात्र नेचर इंडेक्स रैंकिंग में कंट्रीब्यूट करेंगे विश्वविद्यालय प्रशासन उन्हें प्रशस्ति पत्र से ... संकाय के सभी विभागाध्यक्षों से एक-एक कर विभाग के शोध के क्षेत्र में योगदान पर चर्चा करते हुए कहा कि सभी विभाग कोशिश करें कि स्कोपस में ज्यादा से ज्यादा शोध पत्र प्रकाशित हो। इसके साथ ही दिया। कुलपति ने कहा कि विभाग के अंदर तथा विज्ञान संकाय के विभागों में बेहतर समन्वय स्थापित करने की आवश्यकता है। उन्होंने कहा कि स्वस्थ प्रतिस्पर्धा हमारी ताकत है। ...

PHOTO GALLERY

(CST UttarPradesh Sponsered Awareness IPR Workshop on 2nd March 2024)


IPR
IPR
IPR



Deen Dayal Upadhyaya Gorakhpur University
Gorakhpur - 273009, Uttar Pradesh (INDIA)
https://ddugu.ac.in/