

# **IPSACADEMY**

## **INSTITUTE OF ENGINEERING & SCIENCE**

**Indore (M.P.)**



An Autonomous Institute under UGC, New Delhi  
Affiliated to



Rajiv Gandhi Pradyogiki Vishwavidyalaya Bhopal

## **Research & Development Cell**

## **Annual Report**

### **2021-22**

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## A. About Research and Development (R & D) Cell



### **Vision**

To be the fountainhead of novel ideas & innovations in science & technology & persist to be a foundation of pride for all Indians.

### **Mission**

To develop and expand innovative research programs that align well with institutional mission and strategic plan, address important national and global needs, and through technology transfer and commercialization



### **Objectives**

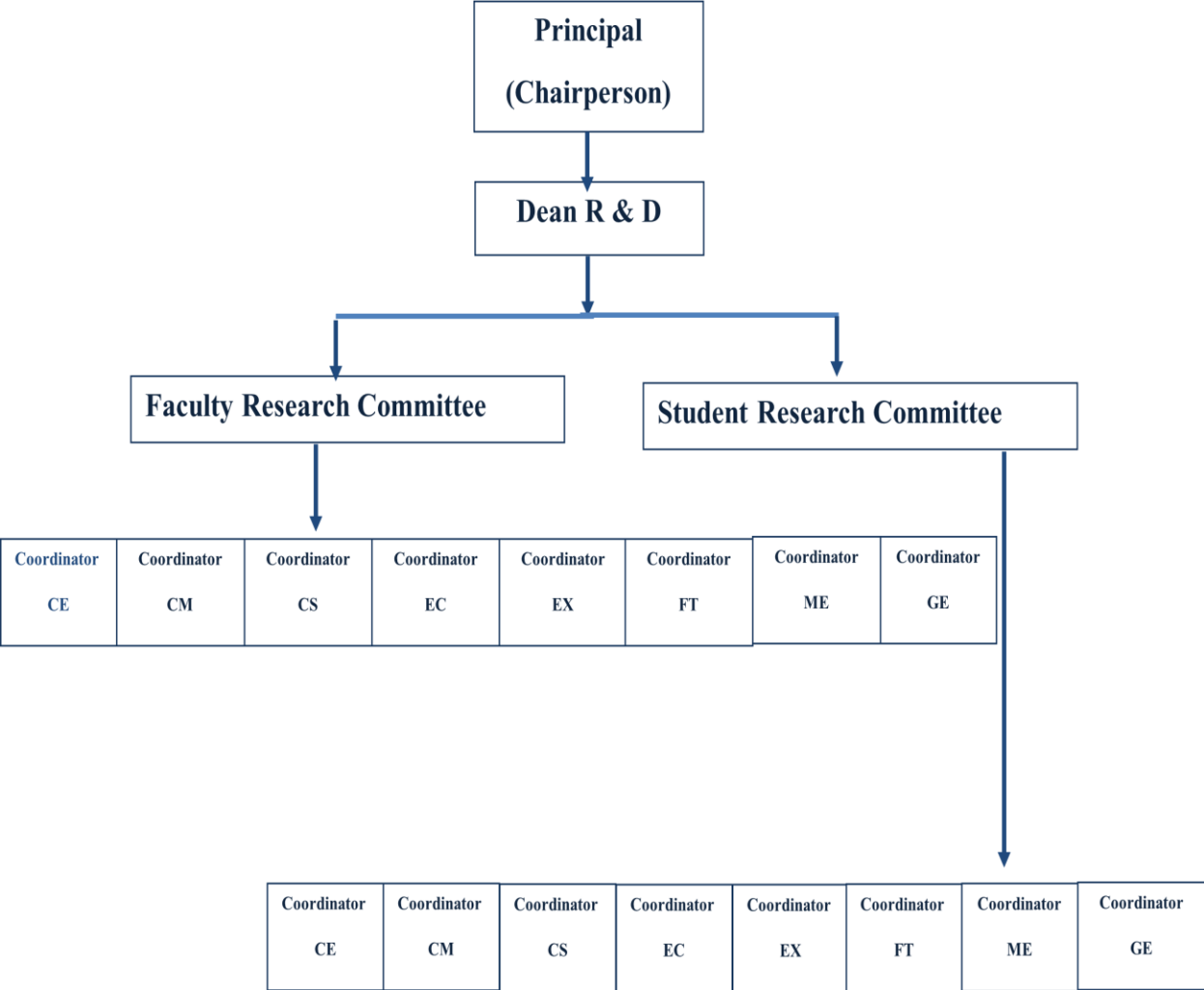
- R&D Cell aims to foster research culture in the College by promoting research in newly looming and challenging frontier areas of Engineering, Technology and Science.
- It encourages the students and faculty to undertake the research in in multidisciplinary fields.
- This fortifies the general research capability of budding technocrats by way of participating in conferences, seminars, workshops, project competition, etc
- To encourage young Engineers to take up challenging R&D activities.
- To encourage patenting facilities to Engineers in the country for Indian and foreign patents on a sustained basis.



## Functions of R & D

- Identification of thrust areas of research in each department
- Advise and encourage the faculty to carry out research in-house and in collaboration with other organizations
- Visit various departments and meet the faculty to encourage and motivate them to undertake research projects and to scrutinize the proposals before submitting to funding agencies
- Identification of physical and human resources to carryout research
- Identify the budgetary requirements and resources for funding the research
- Review the progress of research and offer necessary guidance whenever required
- Monitor and propose the funding from college budget for promotion of research activities
- Identify different organizations/ industries to undertake collaborative research on current topics of mutual interest.
- To develop state of art laboratories such microfluidics lab and heavy structure lab.
- To develop earthquake research center in the institute.

# Proposed Structure of R & D



## **Constitution of Research Advisory Committee**

### **Chairperson**

Dr. Archana Keerti Chowdhary (Principal)

### **Dean R & D**

Dr. Amit Sharma

### **Coordinator**

Dr. Abhinesh Prajapati

### **Members**

- Dr. J Ponomozhi (ME)
- Dr. Kanti Kumar Athankar (CM)
- Dr. Dharmendra Singh Yadav (EC & EX)
- Dr. Sumit Bhatiya (FT)
- Dr. Neeraj Shrivastava (CS)
- Dr. Vaishali Gupta (CS)
- Dr. Nisha Agrawal (GE)
- Dr. V. G. Sadh (Humanities)
- Dr. Devaanshi Jagwani (CE)

The responsibility of the research advisory committee is to implement the framed policies which helps to the promotion of research activities for the benefit of all.

**B. Research Project (Ongoing)**

<b>Sr. No.</b>	<b>Title of Project</b>	<b>Name of the collaborating agency with contact details</b>	<b>Name of the participant from Institute</b>	<b>Financial Year</b>	<b>Amount</b>	<b>Duration</b>
1	Drug diffusion studies in skin on Chip Devices: Numerical Simulations and Experiments (DST)	IIT Indore & Pazmany Peter Catholic University Hungary	Dr. J. Ponmozi	2021-2022 (24-11-21)	17.22L	3 Years
2	Can Perio –Pathogenic bacteria and candida spp act as biomarkers of saliva in oral cancer? A non-invasive diagnosis of oral cancer in a microfluidics platform. (Indian National Science Academy) (Indo- Srilanka Fellowship Project)	University of Peradeniya, Srilanka	Dr. J. Ponmozi	2021-2022 (23-7-21)	3.1L	6 months
3	Development of a biocompatible vehicle for sustained delivery of lactobacillus spores as a treatment modalities for Bacterial Vaginosis (DST)	INDIA-JAPAN COOPERATIVE SCIENCE PROGRAMME. PROPOSAL FOR DST-JSPS JOINT RESEARCH PROJECT FOR PERIOD 2019-21	Dr. J. Ponmozi	2019-2020 (10-7-19)	5.88L	2 Years
4	Dynamic analysis of SDOF system	MODROBS (Modernization and Removal of Obsolesces) (AICTE, Lab Development Project)	Dr. Amit Shrama	2019-2020 (3-12-19)	14.5L	2 Years
5	Strengthening of RCC Column using GFRP and CFRP	MODROBS (Modernization and Removal of Obsolesces) (AICTE, Lab Development Project)	Dr. Archana Keerti Chowdhary	2018-2019 (4-1-19)	12.86L	2 Years

**C. (i) Research Publication (July-Dec 2021)**

Sr. No	Name of the Author(s)	Department of the Author(s)	Title of the Paper	Name of the Journal	Month and Year of publication	ISSN
1	Dr. Devaanshi Jagwani	Civil Engineering	Theoretical Study of Photo-Luminescence Emission Using the Line Shape Function for Semiconductor Quantum Dots	J. Nano- Electron. Phys	Feb-21	2306-4277
2	Dr. Devaanshi Jagwani	Civil Engineering	Nature's nano-assets: Green synthesis, characterization techniques and applications – A graphical review,	Materials Today: Proceedings	May-21	2214-7853
3	Deepak Sharma	Chemical Engineering	Preparation and characterization of ceramic microfiltration membranes for removal of Cr (VI) and Pb from electroplating effluent	Indian Journal of Chemical Technology	Jul-20	0971-457X
4	Abhinesh K. Prajapati	Chemical Engineering	Preparation and characterization of ceramic microfiltration membranes for removal of Cr (VI) and Pb from electroplating effluent	Indian Journal of Chemical Technology	Jul-20	0971-457X
5	Shamal Sen	Chemical Engineering	Adsorption studies on the reduction of COD and color from textile dyeing effluent using wheat husk adsorbent	Journal of the Indian Chemical Society	Jul-20	0019-4522
6	Abhinesh K. Prajapati	Chemical Engineering	Adsorption studies on the reduction of COD and color from textile dyeing effluent using wheat husk adsorbent	Journal of the Indian Chemical Society	Jul-20	0019-4522
7	Savita Dubey	Chemical Engineering	Electro-peroxone treatment of rice grain based distillery biodigester effluent: COD and color removal	Water Resources and Industry	Mar-22	2212-3717
8	Abhinesh K. Prajapati	Chemical Engineering	Electro-peroxone treatment of rice grain based distillery biodigester effluent: COD and color removal	Water Resources and Industry	Mar-21	2212-3717



9	Abhinesh K. Prajapati	Chemical Engineering Department	Removal of fluoride from water by electrocoagulation using Mild Steel electrode	Journal of the Indian Chemical Society	Mar-21	0019-4522
10	Abhinesh K. Prajapati	Chemical Engineering	Sono-assisted electrocoagulation treatment of rice grain based distillery biodigester effluent: Performance and cost analysis	Process Safety and Environmental Protection	Apr-21	0957-5820
11	Abhinesh K. Prajapati	Chemical Engineering	Copper electrode for the removal of chromium from dyestuff industries effluent by electrocoagulation: kinetic study and operating cost	Journal of Dispersion Science and Technology	Feb-21	0193-2691
12	Savita Dubey	Chemical Engineering	Hydrogen peroxide assisted electrocoagulation treatment of rice gain based biodigester effluent: mechanism, performance and cost analysis	International Journal of Chemical Reactor Engineering	Aug-21	2194-5748
13	Abhinesh K. Prajapati	Chemical Engineering	Hydrogen peroxide assisted electrocoagulation treatment of rice gain based biodigester effluent: mechanism, performance and cost analysis	International Journal of Chemical Reactor Engineering	Aug-21	2194-5748
14	Abhinesh K. Prajapati	Chemical Engineering Department	Equilibrium & kinetic studies of reactive extraction of trans-aconitic acid using sunflower oil with tri-n-octylamine	International Journal of Chemical Reactor Engineering	Sep-21	2194-5748
15	Dr. Pratik Gite	Computer Science and Engineering	ML Based Intrusion Detection Scheme for various types of attacks in an WSN using C4.5 and Cart classifiers	Materials Todays - Proceedings	July-2021	2214-7853
16	Dr. Pratik Gite	Computer Science and Engineering	Underwater motion tracking and monitoring using wireless scencer network and machine learning	Materials Todays - Proceedings	July-2021	2214-7853
17	Dr. Neeraj Shrivastava	Computer Science and Engineering	Breast Tumor Detection and Classification Based on Density	Multimedia Tools And Application	July-2020	1573-7721
18	Dr. Neeraj Shrivastava	Computer Science and Engineering	Breast Tumor Detection in MR Images Based on Density	International Journal of Image and Graphics	Apr-21	0219-4678

19	Dr. Vaishali Gupta	Computer Science and Engineering	Development of Urdu Stemmer in Natural Language Processing	VIGYAN PRAKASH	Dec -2020	1549-523-X
20	Dharmendra Singh Yadav	Electronics and Communications Engineering	RDRSA: A reactive defragmentation based on rerouting and spectrum assignment (RDRSA) for spectrum convertible elastic optical network	Optics Communications	May-21	0030-4018
21	Dharmendra Singh Yadav	Electronics and Communications Engineering	A traffic scheduling strategy based on cost function for differentiated class of service in multi-domain optical networks	Optical Fiber Technology	Aug-20	1068-5200
22	Nitin Kumar Jain	Electronics and Communications Engineering	Neuro-fuzzy and fuzzy schemes for cooperative communication in wireless sensor network: a military battlefield scenario	IET Communications	Jan-20	1751-8628
23	Dharmendra Singh Yadav	Electronics and Communications Engineering	Neuro-fuzzy and fuzzy schemes for cooperative communication in wireless sensor network: a military battlefield scenario	IET Communications	Jan-20	1751-8628
24	Kavita Thorat Upadhyay	Electronics and Communications Engineering	A Composition-Dependent Unified Analytical Model for Quaternary InAlGa <sub>N</sub> /Ga <sub>N</sub> HEMTs for pH Sensing	Journal of Electronics Materials	Aug-21	0361-5235
25	Kavita Thorat Upadhyay	Electronics and Communications Engineering	A new analytical model for the response of AlGa <sub>N</sub> /Ga <sub>N</sub> HEMT-based pH sensors	Journal of Computational Electronics	Mar-22	1572-8137
26	Kavita Thorat Upadhyay	Electronics and Communications Engineering	Sensor applications based on AlGa <sub>N</sub> /Ga <sub>N</sub> heterostructures	Materials Science & Engineering B	Jan-21	0921-5107
27	Nitin Kumar Jain	Electronics and Communications Engineering	An Adaptive Neuro Fuzzy Inference System (ANFIS) Based Relay Selection Scheme for Cooperative Wireless Sensor Network	Wireless Personal Communications	Aug-20	0929-6212
28	Dharmendra Singh Yadav	Electronics and Communications Engineering	An Adaptive Neuro Fuzzy Inference System (ANFIS) Based Relay Selection Scheme for Cooperative Wireless Sensor Network	Wireless Personal Communications	Dec-20	0929-6212
29	Dr Aditya Tiwary	Fire Technology and Safety Engineering	Application of Non-Parametric Bootstrap Technique for evaluating MTTF and Reliability of a Complex Network with Non-Identical Component Failure Laws	Reliability: Theory and Applications	Sep-20	1932-2321

30	Dr Aditya Tiwary	Fire Technology and Safety Engineering	Evaluation of Customer Orientated Indices and Reliability Study of Electrical Feeder System	Reliability: Theory and Applications	Sep-20	1932-2321
31	Manish Dubey	Fire Technology and Safety Engineering	EXPLOSION HAZARD AND THEIR CONTROL USING ACCIDENT MODEL IN PROCESS INDUSTRY	Zeichen Journal	Jul-21	0932-4747
32	Dr. Amit Chandak	Mechanical Engineering	Evaluation of Impact of Success Factors of Supply Chain Strategy and Flexibility on Supply Chain Performance"	Pakistan Journal of Statistics and Operation Research	Mar-21	2220-5810
33	J.Ponmozhi	Mechanical Engineering	Cell adhesion in microchannel multiple constrictions – Evidence of mass transport limitations	COLLOIDS AND SURFACES B-BIOINTERFACES	Feb-21	0927-7765
34	J Ponmozhi	Mechanical Engineering	Development of Skin-On-A-Chip Platforms for Different Utilizations: Factors to Be Considered	Micromachines	Mar-21	2072-666X
35	Varsha Sharma	Mathematics	Common Fixed Point Theorem In Menger Space Using (CLR <sub>g</sub> ) Property	Electronic Journal of Mathematical Analysis and Applications	Jan-21	2090-729X
36	Rina Tiwari	Mathematics	Stability of Cubic Mappings in Fuzzy Normed Spaces: A Fixed Point Approach	Bharata Ganita Parisad	Jul-20	0046-5402
37	Varsha Sharma	Mathematics	Common Fixed Point Theorems for Compatible Mappings of Type (A-1) Satisfying a Contractive Condition of Integral Type	Advances and Applications in Mathematical Sciences	Oct-21	0974-6803
38	Dr Manoj Dubey	Mathematics	<i>Advanced Results with Nth Order Square Matrices</i>	<i>International Journal of Advanced Science and Technology</i>	Jul-21	2207-6360
39	Dr.V.G.Sadh	Humanities	The Genesis of Management and Leadership Traits through Ancient Indian Scriptures	Mukt Shabd Journal	Dec-2020	2347-3150
40	Dr.V.G.Sadh	Humanities	Treatment of Lingual Transposition in the Literary Work of Khushwant Singh.	Sahityasetu Journal	Apr-21	2249-2372
41	Dr. Rupali Chaturvedi	Humanities	Individualism in Manju Kapur's <i>Virmati</i> and Bharti Mukharjee's <i>Jasmine</i>	Sahityasetu Journal	Apr-21	2249-2372

42	Dr. Rupali Chaturvedi	Humanities	Pandemic in Indian Literature: The Calcutta Chromosome and A Ballad of Remittent Fever	Sahityasetu Journal	Oct-20	2249-2372
43	Dr. Rupali Chaturvedi	Humanities	The Quandary of Modern Indian-An Analysis of Anita Desai's Fiction	Sahityasetu Journal	Aug-20	2249-2372
44	Dr. Meenakshi Joshi	Humanities	The Reverse Portrayal of Character of Thomas Cromwell- the Protagonist of the Booker Prize Winning Novel Wolf Hall Written by Hilary Mental	Sahityasetu Journal	Jun-21	2249-2372
45	Ms. Rachna Bairagi	Humanities	Feminism in the Novel The Namsake and its Cinematic Adaptation	Sahityasetu Journal	Oct-21	2249-2372

**(ii) Research publication (Jan-Aug 2022)**

S. No	Name of the Author(s)	Department of the Author(s)	Title of the Paper	Name of the Journal	Month and Year of publication	ISSN
1	Dr. Ashish Nim	Civil Engg Department	Assessment of sustainable concrete using carbon black dust as an additive admixture	Architecture, Civil Engineering, Environment (ACEE Journal)	Mar-22	1899-0142
2	Dr. Abhinesh K. Prajapati	Chemical Engg Department	Treatment of rice grain based distillery biodigester effluent using iron metal and salt: Chemical oxidation and electro-oxidation combined study in batch mode	Environmental Nanotechnology, Monitoring & Management	Dec-21	2215-1532
3	Dr. Abhinesh K. Prajapati	Chemical Engg Department	Optimization of electrocoagulation process for treatment of rice grain-based biodigester distillery effluent using surface response methodology approach	International Journal of Chemical Reactor Engineering	May-22	2194-5748
4	Dr. Deepak Sharma	Chemical Engg Department	Treatment of rice grain based distillery biodigester effluent using iron metal and salt: Chemical oxidation and electro-oxidation combined study in batch mode	Environmental Nanotechnology, Monitoring & Management	Dec-21	2215-1532

5	Dr. Shamal Sen	Chemical Engg Department	Treatment of rice grain based distillery biodigester effluent using iron metal and salt: Chemical oxidation and electro-oxidation combined study in batch mode	Environmental Nanotechnology, Monitoring & Management	Dec-21	2215-1532
6	Dr. Savita Dubey	Chemical Engg Department	Treatment of rice grain based distillery biodigester effluent using iron metal and salt: Chemical oxidation and electro-oxidation combined study in batch mode	Environmental Nanotechnology, Monitoring & Management	Dec-21	2215-1532
7	Dr. Savita Dubey	Chemical Engg Department	Optimization of electrocoagulation process for treatment of rice grain-based biodigester distillery effluent using surface response methodology approach	International Journal of Chemical Reactor Engineering	May-22	2194-5748
8	Dr. Rajesh Kumar Kaushal	Chemical Engg Department	Treatment of rice grain based distillery biodigester effluent using iron metal and salt: Chemical oxidation and electro-oxidation combined study in batch mode	Environmental Nanotechnology, Monitoring & Management	Dec-21	2215-1532
9	Mr. Nitesh Parmar	Chemical Engg Department	Treatment of rice grain based distillery biodigester effluent using iron metal and salt: Chemical oxidation and electro-oxidation combined study in batch mode	Environmental Nanotechnology, Monitoring & Management	Dec-21	2215-1532
10	Mr. Nitesh Parmar	Chemical Engg Department	Optimization of electrocoagulation process for treatment of rice grain-based biodigester distillery effluent using surface response methodology approach	International Journal of Chemical Reactor Engineering	May-22	2194-5748
11	Mrs. Swati Mehara	Chemical Engg Department	Treatment of rice grain based distillery biodigester effluent using iron metal and salt: Chemical oxidation and electro-oxidation combined study in batch mode	Environmental Nanotechnology, Monitoring & Management	Dec-21	2215-1532

12	Mrs. Chhaya Rekhate	Chemical Engg Department	Optimization of electrocoagulation process for treatment of rice grain-based biodigester distillery effluent using surface response methodology approach	International Journal of Chemical Reactor Engineering	May-22	2194-5748
13	Dr. Neeraj Shrivastava	Computer Science and Engg.	Breast Tumor Detection in MR Images Based on Density	International Journal of Image and Graphics	Jan-22	0219-4678
14	Dr. Neeraj Shrivastava	Computer Science and Engg.	Secure Data De-duplication for Cloud Data Storage	Indian Journal of Natural Sciences	Jun-22	0976-0997
15	Dr. Vaishali Gupta	Computer Science and Engg.	Identification and extraction of multiword expressions from hindi & urdu language in natural language processing	International Journal of Advanced Technology and Engineering Exploration (IJATEE)	Jun-22	2394-7454
16	Dr. Vaishali Gupta	Computer Science and Engg.	Secure Data De-duplication for Cloud Data Storage	Indian Journal of Natural Sciences	Jun-22	0976-0997
17	Dr. Vaishali Gupta	Computer Science and Engg.	A Stemmer for Malayalam Language in Context of Agricultural Domain	Indian Journal of Natural Sciences	Jun-22	0976-0997
18	Mr. Ashish Sharma	Computer Science and Engg.	Nature inspired algorithms with randomized hypercomputational	Information Sciences	August-2022	0020-0255
19	Mr. Indra Kumar Shah	Computer Science and Engg.	ICIC: A Dual Mode Intra-Cluster and Inter-Cluster Energy Minimization Approach for Multihop WSN	IEEE ACCESS	Jul-22	2169-3536

20	Dr. Dharmendra Yadav	Electronics and Communication Engg.	ICIC: A Dual Mode Intra-Cluster and Inter-Cluster Energy Minimization Approach for Multihop WSN	IEEE ACCESS	Jul-22	2169-3536
21	Mrs. Kavita Thorat Upadhyay	Electronics and Communication Engg.	Temperature dependent analytical model for transfer characteristics of GaN HEMTs with AlxInyGaN barrier layer	Materials Today: Proceedings	Jun-22	2214-7853
22	Dr. Yogendra Dohare	Electrical and Electronics Engg.	ICIC: A Dual Mode Intra-Cluster and Inter-Cluster Energy Minimization Approach for Multihop WSN	IEEE ACCESS	Jul-22	2169-3536
23	Dr. Varsha Sharma	Mathematics	Common fixed point theorem for compatible mappings of type (A-1) in intuitionistic menger space	Jnanabha	May-22	0304-9892
24	Dr. V.G.Sadh	Humanities	Mukt Shabd Journal	Mukt Shabd Journal	March 22	2347-3150

**D. Book Published**

<b>Sl. No.</b>	<b>Name of the Teacher</b>	<b>Title of the Book published</b>	<b>Title of the Chapter published</b>	<b>Title of the proceedings of the conference</b>	<b>Name of the conference</b>	<b>National / International</b>	<b>Year and month of publication</b>	<b>ISBN of the Book/Conference Proceeding</b>	<b>Name of the Publisher</b>
1	Miss Vandana Dubey	High Performance Computing for Intelligent Medical Systems	Analysis of AI based PID Controller for Health care System			International	Jul-21	ISBN: 978-0-7503-3813-4 (hbk), 978-0-7503-3815-8 (ebk),	IOP Publishing Ltd.



### E. Book Chapters Published

Sl. No.	Name of the teacher	Title of the book chapters published	Title of the paper	Year of publication	ISBN/ISSN number of the proceeding	Name of the publisher
1	Dr. Meenakshi Joshi	Conflicted Territories	Religious Snobishness-A New threat to the modern world	2022	978-93-5621-073-8	Orange Book Publication
2	Dr.V.G.Sadh	Women's Voices	The Study of Feminism in Selected Works of Khushwant Singh	2022	978-93-5529-2384	Author Press
3	Dr.V.G.Sadh	Conflicted Territories	Tracing the Trail of Humanity in the partition Literature of Indian Subcontinent: As tudy of Khushwant Singh's Train to Pakistan	2022	978-93-5621-073-8	Orange Book Publication
4	Dr.Rekha Dhoot	Women Discourse in 21 st Century	Voice for the Oppressed & Underprivileged Dalit'sin Sudha Murthy's Three Thousand Stiches & Arjun Dangle's Poisoned Bread	2022	ISBN978-93-5529-191	Author Press(In India Thompson Press)

**F. MoU(s)**

<b>Organization with which MoU is signed</b>	<b>Name of the institution/ industry/ corporate house</b>	<b>Year of signing MoU</b>	<b>Duration</b>	<b>List the actual activities under each MOU year-wise</b>
Moscow Institute of Physics and Tech. (MIPT), Russia	Moscow Institute of Physics and Tech. (MIPT), Russia	2021-22	1 Year	Lecture Series
Inspark Technology, Indore (MP)	Inspark Technology, Indore (MP)	2021-22	24-Aug-22	Expert Lecture
Thakur College of Engineering & Technology, Mumbai (MH)	Thakur College of Engineering & Technology, Mumbai (MH)	2021	3 Year	04 Students Participated in Webinar
Microbia Biotechnology Unit (MBU), National Institute of Fundamental Studies, Kandy, Sri Lanka	Department of Oral Medicine and Periodontology, Faculty of Dental Sciences, University of Peradeniya, Peradeniya, Sri Lanka Telephone - Office - +94812397455 Mobile - +94771643080	2020	until the objectives are achieved (3 years)	A student is hired and we are working towards the objectives of the proposed work.
APS University Rewa (MP)	APS University Rewa (MP)	2022		

## G. Collaboration (s)

Sl. No.	Title of the collaborative activity	Name of the collaborating agency with contact details	Name of the participant	Year of collaboration	Duration	Nature of the activity
1	Visiting faculty from Sri Lanka was awarded fellowship for 6 months to work in "Can Perio-Pathogenic bacteria and candida spp act as biomarkers of aliva in oral cancer?"	Dr. P. V. Kalani S. Hettiarachchi BDS, MD Consultant Oral and Maxillofacial Surgeon, Head, Division of Oral Medicine and Radiology, Department of Oral Medicine and Periodontology, Faculty of Dental Sciences, University of Peradeniya, Peradeniya, Sri Lanka Telephone - Office - +94812397455 Mobile - +94771643080	Dr. P. V. Kalani S.	March, 2022	3-3-2022 to 3-6-2022	Research and development
2	Participation of Students in Webinar	Thakur College of Engineering & Technology, Mumbai (MH)		March, 2022		04 Students Participated in Webinar
3	Lecture Series on "The Grid Characteristics Numerical Method and its Application to Seismic Wave Problems"	Moscow Institute of Physics and Technology, Russia, Dr. Vasily Golubev, w.golubev@mail.ru		Feb. 2022	1st Feb 2022 to 28th Feb 2022	Lecture Series

## H. Patent (s)

<b>S. No.</b>	<b>Patents / Copyright Approved</b>	<b>Name</b>	<b>Year</b>	<b>Status</b>
1	LGP gas leakage detection device (Voice alert to the house wife) (202131047261)	Dr.Amit Chandak	2021	Patent Published (12-11-21)
2	Probabilistic method in applied mathematics for restructuring power system. (202111053834A)	Dr. Manoj Dubey	2021	Patent Published (3-12-21)
3	Digital education portal for academic activity “Campus Active.” (L-104736/2021)	Dr. Namrata Tapaswi Dr. Pratik Nahar	2021	Copyright Granted (24-6-21)
4	Location specific irrigation management and decision support system for agro farm using IOT network (202221013473)	Mr. Vishal Chhabara Mr. Yagyapal Yadav Mr. Anshul Ojha	2022	Patent Published (25-03-2022)
5	Lead toxicity detector and water cleaning machine (362825-001)	Mr. Nitesh parmar	2022	Copyright published (08-07-2022)

## I. Visits

Dr. P. V. Kalani, Professor of Dental Sciences, University of Peradeniya, Sri Lanka visited the IPS Academy, Institute of Engineering and Science for working in microfluidics lab with Dr. J Ponmozhi (Faculty IPS Academy, Institute of Engineering & Science) under the research project entitled **“Peradeniya Can perio-pathogenic bacteria and Candida spp. act as biomarkers of saliva in Oral cancer? - Non-invasive diagnosis of oral cancer in a microfluidic platform”**. The project was sponsored by Indian National Science Academy under the program Indian Science and Research Fellowship.



**J. Special lecture(s)**

<b>Sr. NO.</b>	<b>Title</b>	<b>Details of Experts</b>	<b>Date of lecture Delivered</b>
1	“Numerical Method Introduction”	Dr. Vasily Golubev Head & Senior Research Scientist, Moscow Institute of Physics & Technology, Russia	01/02/2022
2	“Rheology and Linear Transport Equation”	Dr. Vasily Golubev Head & Senior Research Scientist, Moscow Institute of Physics & Technology, Russia	08/02/2022
3	“Compact Scheme for One-Dimensional Transfer Equation”	Dr. Vasily Golubev Head & Senior Research Scientist, Moscow Institute of Physics & Technology, Russia	15/02/2022
4	“Continuous and Discontinuous One-Dimensional Acoustic”	Aleksei Shevchenko Research Scholar, Moscow Institute of Physics & Technology, Russia	22/02/2022



## **K. Ph.D Awarded**

(1) Dr. Manish Sahajwani

(2) Dr. Neeraj Shrivastava

(3) Dr. Shamal Sen

(4) Dr. Vaishali Gupta

(5) Dr. Ashish Nim

(6) Dr. Prateek Nahar

(7) Dr. Nitin Jain



## **Acknowledgement**

- The R & D Cell acknowledges the support provided by the following funding agencies, industries and research collaborators:
- Department of Science and Technology, India
- University of Peradeniya, Sri Lanka
- Moscow Institute of Physics & Technology, Russia
- Indian National Science Academy, India
- All India Council of Technical Education , India
- Inspark Technology, Indore (M. P.), India
- Thakur College of Engineering & Technology, Mumbai (Maharashtra), India
- APS University Rewa (M. P.), India