

Annual Report 2022-23 Manav Rachna University



A. About IIC Institute

- **Vision / Mission of IIC established at the Institute**

Ministry of Education (MoE), Govt. of India established **MoE's Innovation Cell (MIC)** to systematically nurture the Innovation culture among all Higher Education Institutions (HEIs). The prime mandate of MIC is to inspire, stimulate and nurture young students by providing them support to work with novel ideas and convert them into valuable products starting from the initial years. MIC has projected the creation of 'Institution's Innovation Council (IICs)' across the HEIs. A network of these IICs will be established to promote innovation in the Institution through multitudinous modes leading to an innovation and entrepreneurship (I&E) promotion eco-system in the campuses. It's our proud privilege to announce that MANAV RACHNA UNIVERSITY (MRU), FARIDABAD is selected as a member of IIC with a team of three members Dr. Susmita Ray, Ms. Yogita Khanna and Mr. Gianender Kajal way back in November, 2018.

- **Journey of IIC established at the Institute**

Over last five years IIC of MRU has grown in terms of faculty strength and students' strength as IIC moved through its journey of IIC 1.0, IIC 2.0, IIC 3.0, IIC 4.0 and then to IIC 5.0. IIC MRU started with three faculty members with IIC 1.0 with each faculty member from each Engineering department of MRU, namely Dr. Susmita Ray from Computer Science & Technology (CST) department, Ms. Yogita Khanna from Electronics & Communication Engineering (ECE) department and Mr. Gianender Kajal from Mechanical Engineering (ME) Department. In IIC 2.0 the faculty strength increased to 9 faculty members namely 5 from CST department, 2 from ECE department, and 2 from ME department. In IIC 3.0 the faculty strength was kept at 9 but with more diversified engagement of departments having 4 faculty members from CST, 1 from ME, 1 from ECE and 3 from Management department to promote entrepreneurship and startups (maturing innovative ideas from PoC to Prototype to market ready product for a startup). Strength of students in IIC of MRU has increased from 12 to 24 from 2019 to 2020. Students are from various disciplines : Engineering,

Management, Sciences, Law. In IIC 4.0 faculty strength further increased to 11 adding faculty coordinators for focussed roles e.g. Startup activities, Industry Interaction (MoU contracts management), NIRF, internships management, hackathons/competitions. In II 5.0 faculty strength was further increased to 14 adding faculty members from Law, Maths and CST department.

- **Diversified representation in the IIC established at the institute from industry, Interdisciplinary & Departments/ Units etc.**

From IIC 1.0, there was diversified representation of faculty members from different engineering department to develop ideas to PoC to Prototype which are multidisciplinary. MRU IIC had external members from industry as Mentors who are associated with CoEs. IIC also has external member from Banking sector. To make it more diversified, faculty members from Management department have been engaged to boost entrepreneurship and promote startup culture, facilitate involvement of investors to enable funding for startups. An E-Cell (Entrepreneurship Cell) was established in 2019 under the umbrella of IIC 2.0 with a set of students from engineering and management disciplines.

B. Brief mention of key functionaries at the IIC Institute

- Dr. Susmita Ray, President IIC
- Dr. Parneeta Dhaliwal, Vice President, IIC
- Dr. Yogita Khanna, Convener IIC & IPR Activity Co-ordinator
- Dr. Ruchi Gupta, Social Media Co-ordinator
- Dr. Subodh Saluja, Internship Activity Co-ordinator
- Dr. Yogita Sharma, E-Cell Activity Co-ordinator & Startup Activity Co-ordinator
- Dr. Pragati Chauhan, E-Cell Activity Co-ordinator
- Dr. J.P. Sharma, Member, IIC
- Ms. Simran Singh, Member IIC
- Dr. Ranjna Jain, Research Cluster of Computing (RCC) Coordinator
- Dr. Prashant Bhardwaj, Skill Development Coordinator
- Mr. Vijay Gill, Member IIC
- Ms. Anupriya Sharma, Member IIC
- Dr. Meena Kapahi, NIRF Co-ordinator

C. Portfolio/Tabular representation of Resource strength (human capital and Physical capital) of the IIC institution

Total No. of IIC Faculty Members	14
Total No. of IIC Student Members	16
Total No. of IAs	1-Basic Level, 3-Advanced Level
Total No. of Faculty Mentors	9
Pre-Incubation Unit	Yes. 1. Design Centre for Product Design & Development with industry partner Altair and Design Tech 2. Innovation Center-MRU-IIC
IP Facilitation Unit	Yes . MRU IPR Cell

D. Highlights of Facilities, Infrastructure of Pre-Incubation & Incubation kind and Student bodies/clubs engaged in promotion of Innovation and Entrepreneurship in the campus.

- MRU has Pre-Incubation Unit with coverage area of more than 600 sq ft comprising of the following sub-units:
 1. Design Centre for Product Design & Development with industry partner Altair and Design Tech, established in 2019
 2. Innovation Center-MRU-IIC, established in 2018
- MRU has Centre of Excellence (CoE) with more than 1000 sq. ft. coverage area named “Air Conditioning (DAIK-IN India Pvt. Ltd.)” established in 2017
- MRU has Centre of Excellence (CoE) with Advance Tools & Equipment named “Center for Smart Energy” managed by Electronics and Communication department
- MRU has Industry-Institute Interface with “FGSI and Kidzania Delhi NCR” for promoting innovation/entrepreneurship in all Science disciplines
- MRU has Industry-Institute Interface Unit with National Council for Cement and Building Materials (NCCBM), Faridabad for promoting innovation/entrepreneurship in all Science disciplines
- MRU has Industry-Institute Interface with “Vivek International Ballabgarh” for promoting innovation/entrepreneurship in all Science disciplines

- MRU has Industry-Institute Interface with “Infosys”, “Xebia”, “QuickHeal”, “Sofocle Innovation Labs”, “AIW Works Pvt. Ltd.”, “Coding Ninjas (Sunrise Mentors Pvt. Ltd.)”, AWS, GG Sports” for promoting innovation/entrepreneurship in Computer Science and Engineering discipline
- MRU has Industry-Institute Interface with “Reinste Nano Ventures Pvt. Ltd.” for promoting innovation/entrepreneurship in all Science and Engineering disciplines
- MRU has Industry-Institute Interface with “Smart Energy Center” for promoting innovation/entrepreneurship in Electronics & Communication Engineering discipline. It is a Center of Excellence with Advance Tools and Equipment
- MRU has an incubation unit with Atal Incubation Center, BIMTECH for promoting innovation/entrepreneurship in all Science and Engineering disciplines
- MRU has “Research and Computing Cluster” as a Research Unit/Park for promoting innovation/entrepreneurship in all Engineering disciplines
- MRU has “Materials for Environmental Sustainability” as a Research Unit/Park promoting innovation/entrepreneurship in all Science disciplines
- MRU has Centre of Excellence with Advance Tools & Equipment with industry partner Altair and Design Tech for promoting innovation/entrepreneurship in all Engineering disciplines
- MRU has signed off MoU with the following two IPR Law Firms namely IPLOEA and Centre for New Product Development Trade and Transfer to promote innovation culture, impart knowledge on IP to faculty, students and research community of MRU and facilitate patent/copyright filing
- MRU has Industry-Institute Interface with International Skill Development Corporation (ISDC) and NSIC to promote skill development and startups
- MRU has signed off MoUs with ICT Academy, BFSI Sector Skill Council of India to promote skill development towards product development
- MRU has Centre of Excellence with Advance Tools & Equipment with industry partner DAIKIN for promoting innovation/entrepreneurship in Mechanical Engineering discipline
- MRU has “Sahai Research Lab” as a Research Unit/Park for promoting innovation/entrepreneurship in Electronics & Communication Engineering discipline
- MRU has Industry-Institute Interface with “True Chip” for promoting innovation/entrepreneurship in Electronics & Communication Engineering discipline
- MRU has Industry-Institute interface with Transneuron Technologies and CYPE
- MRU has Industry-Institute Interface with “Srijan Sanchar” for promoting innovation/entrepreneurship in Electronics & Communication Engineering discipline

E. Highlights of Achievements (Tabular representation)

- Number and Different types of I&E and IPR activities Conducted

SIno	Event Topic	Event Date	Event Type	Speaker	Role/Designation of Speaker
1	IPR Workshop	12-Jan-2023	IPR & Technology Transfer	Mr. Piyush Yadav	Patent Agent, IPQuad
2	IPR Workshop and IP Management for Startup-IPR and Youth: For a Better Future	21-July-2023	IPR & Technology Transfe	Ms. Latika Khanduja and Mr. Shekhar Khanduja	Founders of IPLOEA, New Delhi.
No of Activities in IPR Category - 2					
3	Workshop on Design Simulation for Prototype Development	12-Oct-2022	Innovation & Design Thinking	Dr.J. P. Sharma	Assistant Professor, Department of Mechanical Engineering, MRU, and IIC Faculty Member
4	Robotics Workshop	21-Nov-2022 to 25-Nov-2022	Innovation & Design Thinking	Dr.J. P. Sharma	Assistant Professor, Department of Mechanical Engineering, MRU, and IIC Faculty Member
5	Workshop by BIMTECH on Exposure and Field Visit for Problem Identification	30-Nov-2022 to 1-Dec-2022	Innovation & Design Thinking	Mr. Aditya Bose	CEO of Probano
6	Problem Solving & Ideation Workshop	13-Jan-2023	Innovation & Design Thinking	Dr. Subodh Saluja	Innovation Ambassador & Associate Professor, Department of Management & Commerce, MRU
7	Capacity Building for Innovation	11-Jan-2023 to 21-Jan-2023	Innovation & Design Thinking	Mr. Harshit Dawar	Data Scientist, Consultant, Xebia

8	Upgrading Skills for Sustainable Innovation and Entrepreneurship Using IoT	31-Jan-2023 to 1-Feb-2023	Innovation & Design Thinking	Mr. Shrey	Co-founder, SmarDen Technologies, New Delhi.
9	Translation of IP for an academic institution : Expert talk on Process of Innovation Development, Technology Readiness Level (TRL); Commercialization of Lab Technologies & Tech-Transfer	28-Dec-2022	Innovation & Design Thinking	Ms. Reema Sahni Mediratta, & Ms. Kriti	Ms. Reema Sahni Mediratta : In-charge & Senior Project Manager at Innovation Technology Transfer Office Ms. Kriti, :IIT, Delhi, Registered Patent Agent with Indian Patent Office and recognized as Innovation Ambassador by MHRD, Government of India
10	Workshop on Design Thinking, Critical Thinking and Innovation Design	21-Feb-2023 to 23-Feb-2023	Innovation & Design Thinking	Dr. Yogita Sharma	Associate Professor, School of Management and Commerce, MRU, IIC Faculty member, Coordinator for Pre-Incubation, Startup activity and E-Cell of IIC, Mentor with NIESBUD and Institute for Industrial Development (IID).
11	Toy Tinker : Innovation Challenge	23-Feb-2023 to 24-Feb-2023	Innovation & Design Thinking	Ms. Jasreen Kaur	Technical Expert, Smartivity Labs
12	Solve for Tomorrow 2023: Launch of Innovation Challenge (in Association with Samsung India)	12-May-2023	Innovation & Design Thinking	Mr. Manveen Singh Chadha, Mr. Anubhav Sen, Mr. Gaurav Chauhan, Mr. Shivansh Garg. Anurag Pandey and Ms. Kritika Kakkar	Mr. Manveen Singh Chadha & Mr. Anubhav Sen from FITT-IIT Delhi, Mr. Gaurav Chauhan from Lets Venture, Mr. Shivansh Garg- an entrepreneur, Mr. Anurag Pandey from SciComm India

					Ms. Kritika Kakkar from Samsung India,
13	Workshop on Idea Generation and Prototype Design and Development	26 June-30 June 2023	Innovation & Design Thinking	Dr. Lokesh Bhardwaj and Mr. Vijay Kumar Gill	Assistant Professors, Department of ECE, MRU, IIC Faculty Members
14	Workshop on Industry 4.0- Driving Innovation & Revolutionize Industry	9-Aug-2023	Innovation & Design Thinking	Mr. Manoj Yadav	Technical Expert, SVR Infotech Pvt. Ltd, Pune
15	Workshop on Robotics-Fostering Innovative Ideas in Robotics	26-Jul-23	Innovation & Design Thinking	Dr. J P Sharma and Mr. Vijay Gill,	Dr. J. P. Sharma: IIC Faculty member of Mechanical Engineering Mr. Vijay Gill: IIC Faculty member of Electronics and Communication Engineering, School of Engineering Manav Rachna University
16	Workshop on Innovation / Prototype Validation Converting Innovation into a Startup	24-Jul-2023 to 25-Jul-2023	Innovation & Design Thinking	Dr.J. P. Sharma	Assistant Professor, Department of Mechanical Engineering, MRU and IIC Faculty Member
17	Web Week – Workshop on Web Development Empowering Business Innovation	7-Aug-2023 to-12-Aug 2023	Innovation & Design Thinking	Peeyush Kumar, Amarjeet Singh	Senior IIC students of Research Cluster of Computing of IIC along with Alumni in industry
18	Workshop on App Development: Upskilling for Product Innovation	24-April-2023 to 28 April-2023	Innovation & Design Thinking	Mukul Sharma, Hudayat Bukhari	Senior IIC students of Research Cluster of Computing of IIC along with Alumni in industry
19	Youth Sustainathon: Leap Hubs Challenge of Global Peace Leadership Conference 2023	18-April-2023 to 19-April- 2023	Innovation & Design Thinking	Youth leaders, innovators, and visionaries from across the Indo-Pacific region	Youth leaders, innovators, and visionaries from across the Indo-Pacific region

No. of Activities in Innovation & Design Thinking Category- 17

20	Business Haat	18-10-2022	Entrepreneurship & Startup	Dr. Pragati Chauhan	HoD, Department of Management & Commerce, MRU, IIC Faculty Member, E-Cell Coordinator, Innovation Ambassador
21	Startup Conclave: Motivational Session by Successful Entrepreneurs/Start up Founders	10-Nov-22	Entrepreneurship & Startup	Dr. Munish Jindal, Dr. Nancy Juneja, Mr. Ambrish Ranjan, Ms. Manleen Kaur Mahajan, Mr. Nitin Pahuja, Mr. Rajnish Kapoor	Dr. Munish Jindal: Founder & CEO of HoverRobotix & Founding President of Mentor X global. Dr. Nancy Juneja: Founder – RevUp, Co-Founder – MENTORx Global Chairperson MENTORx Women, Mr. Ambrish Ranjan: Vice President, Asort, Ms. Manleen Kaur Mahajan: Public Relations & Brand Communications, Consultant, Everest Fleet North, Young Volunteer Organization, Mr. Nitin Pahuja: Co-Founder, Push Sports, Step1 Advertising, Mr. Rajnish Kapoor: Managing Partner, IAN Fund.

22	Expert Talk by Successful Entrepreneur : Motivational Session by Successful Entrepreneur/Start up Founder :	16-Nov-2022	Entrepreneurship & Startup	Ms. Debjani Roy	Chief HR Advisor of Mind Your Fleet (a reputed software start-up in the transportation space), She runs her own boutique HR Solutions & Advisory firm called Wind Beneath the Wings Venture LLP, Certified L&D professional, Prolific Soft Skills Trainer.
23	E-Week-Sangrachna :Week of Entrepreneurship Activities competitions across institutions of Delhi-NCR among young aspiring entrepreneur students, Expert Talks, Seminars, Webinars organized in association with E-cell of Maitreyi College- Delhi University, IEEE	19-Nov to 24-Nov 2022	Entrepreneurship & Startup	Prof Dr. Ravinder Kaur, Dr. Subodh Saluja, Dr. Pragati Chauhan	<p>Prof Dr. Ravinder Kaur, faculty at the Department of Electronics at Deen Dayal Upadhyaya College, University of Delhi, President institution of DDUC Delhi University, Committed leader in conducting sessions on Design Thinking, Entrepreneurship, Start-up eco system</p> <p>Dr. Subodh Saluja: Innovation Ambassador & Associate Professor, Department of Management & Commerce, MRU</p> <p>Dr. Pragati Chauhan: HoD, Department of Management & Commerce, MRU, IIC Faculty Member, E-Cell Founder & Coordinator, Innovation Ambassador</p>

24	Business Simulation Workshop	21-Nov to 23-Nov-22	Entrepreneurship & Startup	Dr. Bindu Agarwal & Dr. Pragati Chauhan	<p>Dr. Bindu Agarwal: Faculty, Sri Sri University, Bhubneswar. With vast experience in creating culture for startup in various universities. Providing mentoring and training support to startups. Under her guidance more than 10 startups incubated which got seed funding also.</p> <p>Dr. Pragati Chauhan: HoD, Department of Management & Commerce, MRU, IIC Faculty Member, E-Cell Founder & Coordinator, Innovation Ambassador</p>

25	Encouraging entrepreneurial mindset in the youth: Innovation & Entrepreneurship Outreach Program in Schools/Community-Program organized in collaboration with Bhartiya Yuva Shakti Trust (BYST)	02-Feb-23	Entrepreneurship & Startup	Dr. Pragati Chauhan	HoD, Department of Management & Commerce, MRU, IIC Faculty Member, E-Cell Founder & Coordinator, Innovation Ambassador
26	Field visit to manufacturing unit of Vihaan Networks Limited(VNL)	17-02-2023	Entrepreneurship & Startup	Mr. Alok Sharma, Mr. Manish Kumar Goyal	Mr. Alok Sharma: Vice President of VNL Mr. Manish Kumar Goyal: GM-Manufacturing and SCM, VNL.
27	Global Entrepreneurship & Startup Conclave. Event organized in association with Entrepreneurs Media	24-02-2023	Entrepreneurship & Startup	Prof. (Dr.) Devi Singh, Mr. Markandey Rai	Prof. (Dr.) Devi Singh, Professor Devi Singh, Former Vice Chancellor, FLAME University, Pune, Director, IIM Lucknow and MDI Gurgaon, Mr. Markandey Rai: President of Global Peace and Development Service Alliance, Director, Youth Rural Entrepreneurial Foundation
28	International Conference on Business Innovation Transformation, and Sustainability: Changing Global Paradigm (BITS 2023)	28-April-2023 to 29-April-2023	Entrepreneurship & Startup	Prof (Dr.) Sunil Rai, Mr. Arpit Sharma, Mr. Harbhajan Singh, Dr Punita Duhan, Ms Elena, Dr. B Shadrach	Prof (Dr.) Sunil Rai: Chancellor UPES Dehradun, Mr. Arpit Sharma: COO, Skill Council for Green Jobs, Mr. Harbhajan Singh: Chief of Strategy and HR XLRI, Delhi- NCR & Chairman - Taskforce of Ease of

					Doing Business, CII Haryana, Dr Punita Duhan: Director Delhi Skill & Entrepreneurship University NCT Delhi, Ms Elena: Program Director M.Sc. Sustainable Management from ESSCA Paris, Dr. B Shadrach: Director, Commonwealth Research.
29	Inter Institutional Business Plan Competition and Reward of Best Innovation -Managed through YUKTI-NIR	11-May-2023 to 12-May-2023	Entrepreneurship & Startup	Mr. Vijay Gill, Dr. Prashant Bhardwaj	Mr, Vijay Gill: IIC Faculty Member, Assistant Professor, Department of ECE, MRU Dr. Prashant Bhardwaj, IIC Faculty Member, Assistant Professor, Department of Mechanical Engineering, MRU
30	How to plan for Start-up and Legal & Ethical Steps	16-May-23	Entrepreneurship & Startup	Dr. Subodh Saluja	Innovation Ambassador & Associate Professor, Department of Management & Commerce, MRU
31	Session with Innovation and Startup Ecosystem Enablers from the region	20-July-2023	Entrepreneurship & Startup	Mr Shakeel Ahmed Khan, Dr Nancy, Juneja	Mr Shakeel Ahmed Khan: Mentor, National Small Industries Corporation (NSIC), under Ministry of MSME, Government of India, Dr Nancy Juneja: Co-Founder, MENTORx
32	Session on Accelerators/Incubation Opportunities for Students & Faculties Early Stage	27-Jul-23	Entrepreneurship & Startup	Mr. Rahul Khurana	Startup Entrepreneur

	Entrepreneurs				
33	Session on FIKA - An Entrepreneurial Style/ Network is Networth	25-July-2023 to 26-July-2023	Entrepreneurship & Startup	Ms Saifyly Sangal	Ms Saifyly Sangal, Founder of Yung Minds.
34	Pitchdeck- A sustainable Idea Generation Competition of Startups- Intra Institutional Start up Competition and Reward of Best Start ups Managed through YUKTI NIR	23-Aug-2023 to 25-Aug-2023	Entrepreneurship & Startup	Evaluators: Mr. Mohit Mahajan, NPDTT (External) & IIC Faculty Members, Innovation Ambassadors of MRU	Evaluators: Mr. Mohit Mahajan, NPDTT (External) & IIC Faculty Members, Innovation Ambassadors of MRU
No of Activities in Entrepreneurship & Startup Category - 15					
35	National Youth Day Celebration	12-Jan-23	Innovation & Design Thinking	Dr. Shobha Srivastava, Dr. J.P. Sharma, Dr. Prashant Bhardwaj	Dr. Shobha Srivastava: Deputy Registrar Administration and Chief Warden Hostels Dr. J.P. Sharma: Assistant Professor, Department of Mechanical Engineering, MRU, and IIC Faculty Member Dr. Prashant Bhardwaj: Assistant Professor, Department of Mechanical Engineering, MRU, and IIC Faculty Member
36	National Startup Day Celebration	16-Jan-2023	Entrepreneurship & Startup	Sunil Kant Munjal, Mr. Rajiv Chawla, Mr. Vipin Sondhi, Ms Anna Shotbolt, Mr. Ram Jass Yadav, Mr. Pankaj Pachouria, Laxmi V. Venkatesan	Sunil Kant Munjal: Chairman- Hero Enterprise, Sunil Kant Munjal, Chairman- Hero Enterprise, Mr. Rajiv Chawla: Chairman IamSMEof India, Mr. Vipin Sondhi: Ashok leyland, Ms Anna Shotbolt : British High

					commission, Mr. Ram Jass Yadav: Bank of Baroda, Mr. Pankaj Pachouria: TV Anchor and journalist, Laxmi V. Venkatesan: Founding and managing trustee of BYST
37	National Science Day Celebration	28-Feb- 2023	Innovation & Design Thinking	Prof. Pramod K. Bhatnagar, Dr. Jitendra Pal Singh, Ms. Sonam Bhatia	Prof. Pramod K. Bhatnagar (Emeritus Professor, Delhi University), Dr. Jitendra Pal Singh (Ramanujan Fellow; under the DST-SERB scheme, MRU), Ms. Sonam Bhatia (from Sun- pharmaceuticalsPvt. Ltd) were the keynote speakers on this event

No of Activities in Celebration Category - 3

- MRU IIC participated in all MIC Driven Activities
- MRU IIC will participate in SIH 2023

- **No. of student's & faculty ideas generated & Prototypes developed: 0**

- No. of IPs generated, published and granted**

Sr. No.	Title/Name of IP (Patents Only)	IP Registration Number of Patent	Date of Patent IP Filed (Month, Year)	Patent Status (Filed, Published, Granted)
1	A Method for Mitigating Corrosion Properties of Electrodes in Secondary Energy Storage Batteries	202211060626	23.10.2022	Filed
2	AI Based Vehicle Theft Prevention System	202211051354	08.09.2022	Filed
3	The Composition for Increasing Flame Longevity and Reducing Camphor Volatility	202111061475	30.06.2023	Published
4	TEATEST	202111061579	30.06.2023	Published
5	Lead-Acid Battery Cell Reconfigurable Arrangement for Enhanced Battery Life	202111061504	30.06.2023	Published
6	Refrigeration Automation System	202111061566	30.06.2023	Published
7		202321026411 A	12.05.2023	Published
8	The Impact of using Automation is Transforming the Supply Chain Industry	202311016337 A	12.05.2023	Published
9	Machine Learning and Wireless Sensor Networks Based Approaches for Analysis Environment Pollution on Smart Cities	202311013974 A	17.03.2023	Published
10	Driver Less Vehicle Controlled By Using Voice	202311008208	17.02.2023	Published

11	Blockchain-Based Finance Tracking System and Method Thereof	202311003702 A	27.01.2023	Published
12	A Kind of Multi-Dimensional Data Analytical System Based on Business Object	374692-001	20.01.2023	Published
13	Solar Powered Sea Water Desalination Apparatus	202311000807	13.01.2023	Published
14	DIY Power Bank with Plasma Lighter	202311000810	13.01.2023	Published
15	Voice-Based Water Dispensing System and Method Thereof	202311000809	13.01.2023	Published
16	Anti-Theft System for Vehicle and Method Thereof	202311000806	13.01.2023	Published
17	Internet of Things (IOT) Based intravenous (IV) Fluid Monitoring and Alerting System and Method	202311000812	13.01.2023	Published
18	Student College Smart Card	202311000811	13.01.2023	Published
19	Mobile Phone & Cash UV Disinfector for COVI	202311000808	13.01.2023	Published
20	Image Forgery Detection System and Method Thereof	202311000813	13.01.2023	Published
21	Radio Frequency Identification (RFID) Based Travel Ticket Booking System and Method Thereof	202211075717	06.01.2023	Published
22	Automated System for Governing Traffic Lights	202211075718	06.01.2023	Published

23	IR Based Obstacle Detection For Load Switching Project	202211075723	06.01.2023	Published
24	Plant Soil Moisture Monitoring System and Method Thereof	202211075714	06.01.2023	Published
25	Smart Burglar Alarm - Complete Patent Application	202211075722	06.01.2023	Published
26	System for Monitoring a Health and a Fuel Usage of a Vehicle and Method Thereof	202211075715	06.01.2023	Published
27	Energy Monitoring System	202211075721	06.01.2023	Published
28	Smart Shopping Cart	202211075724	06.01.2023	Published
29	Sustainable Rotating Biological Contactor (SRBC)	202211075716	06.01.2023	Published
30	Distance Pruning	202211075725	06.01.2023	Published
31	Home Automation System using MQTT Protocol and ESP32	202211075719	06.01.2023	Published
32	Water Heater Bottle	202211075726	06.01.2023	Published
33	Water Health Monitoring System and Method Thereof	202211076379	06.01.2023	Published
34	First Information Report (FIR) Lodge and Assistance System and Method Thereof	202211076376	06.01.2023	Published
35	A novel motor vehicle window pane closure detector	202211076380	06.01.2023	Published

36	System for Generating Alert Against Infectious Diseases and Method Thereof	202211076374	06.01.2023	Published
37	Intelligent Security System for Bank Lockers	202211076378	06.01.2023	Published
38	Video Calling/Recording Smartphone Stand	202211076381	06.01.2023	Published
39	Home Air Quality Monitoring System Project	202211069264	30.12.2022	Published
40	Rain Sensing Automatic Car Wiper	202211069265	30.12.2022	Published
41	Electronic Voting System using Blockchain	202211069266	30.12.2022	Published
42	Eye ball Sensor for automatic Wheel Chair for paralyzed patients	202211069261	30.12.2022	Published
43	Android Smart Ticketing Using RFID	202211069263	30.12.2022	Published
44	Ultrasonic Blind Walking Stick	202211069262	30.12.2022	Published
45	Cancer Prediction System using Data Mining Techniques and Method Thereof	202211072396	30.12.2022	Published
46	Solar Energy Based Multipurpose Agricultural Robotic Vehicle	202211072397	30.12.2022	Published
47	Solar Panel Power Generation using ESP32	202211072393	30.12.2022	Published
48	Sound Enabled Polling Machine for Visually Challenged Voters and Method Thereof	202211072398	30.12.2022	Published
49	Biometric Student Attendance System App	202211072394	30.12.2022	Published

50	Brain Tumor and Alzheimer's Detection Flutter App	202211072395	30.12.2022	Published
51	Smart Solar Grass Cutter With Lawn Coverage	202211075713	30.12.2022	Published
52	Smart Mosquito Repellant Device	202211075720	30.12.2022	Published
53	Remote Assisted Refrigerator Door Monitoring with IoT	202211073374 A	30.12.2022	Published
54	Intelligent and Portable Rain Water Harvesting Kit for Smart Gardens Based on Biconvlstm	317375-001	23.12.2022	Published
55	Horizontzl Aerobic & Biodegradable Composting	202211068867	02.12.2022	Published
56	System and Method For Product Identification For Visually Impaired Users	202211068868	02.12.2022	Published
57	Orange Fruit Recognition System using Image Segmentation and Method Thereof	202211068869	02.12.2022	Published
58	Brain Tumor Detection Using Image Segmentation	202211068870	02.12.2022	Published
59	Blockchain-Based Cloud File-Sharing System and Method Thereof	202211068871	02.12.2022	Published
60	Position Based Attendance System (CN)	202211068865	02.12.2022	Published
61	Medical Assistance System and Method of Generating Reminders Using the Same	202211068866	02.12.2022	Published

62	Voice Based Notice Board Using Android	202211057825 A	28.10.2022	Published
63	Fruit Harvesting Inchworm Robot	202211058422 A	21.10.2022	Published
64	Autonomous Blockchain based System for Generation and Delivery of Photographic Aadhaar linked Birth Certificates	202241047440 A	26.08.2022	Published
65	An IOT Based Swirling Bath Shower System	2022/03855	26.08.2022	Granted
66	A Novel Cost Effective Home Gardening System	2022/04878	27.07.2022	Granted
67	Microcontroller Based Hydroponic System and Ultrasound Pump Control Apparatus	348854-001	08.07.2022	Granted
68	Wearable Health Monitoring Jacket	UK Design Patent-6287661	14.06.2023	Registration of Design
69	Exhaust Fan with Air Filter	365421-001	12.05.2023	Registration of Design
70	A IoT Based Coagulation Analyzer	356093-001	25.01.2023	Registration of Design
71	Artificial Intelligence Based Skin Cancer Inspection Device	348302-001	09.12.2022	Registration of Design

- **List of Registered Start-ups/Ventures Established**
- **Highlights of selected start-ups established by students/faculties with mention of founder/cofounder name**

S.No.	Name of the start up	Nature of start up	Type of Innovation	Year of commencement	Contact information of promoters	Mentors Name	Funding Provided to Start-ups (Rs.)
1	Geodence	Attendance App	Technology	2023	Diya Sharma-9582749009	Dr. Abhishek Saxena Dr. Ranjna Jain	250000
2	Ratiram Limbs	Nearly 190 million individuals worldwide have some form of physical disability , and we believe that if we could make a difference, why not. We are attempting to create a wearable robotic arm that is controlled by brain waves for people with special needs in order to assist them with their everyday activities and foster a sense of independence.	Product Innovation	2022	Drishti Uppal-8800584658	Dr. Parneeta Dhaliwal Ms. Priyanka Gupta	250000

3	Modular Batteries	Modular Batteries are scrapped now a day if only one cell is damaged and there is no method through which a user can find which cell is not working properly. Modular batteries are used in various sectors such as household, automotive sector, etc. For this, we propose a solution that each cell in a battery pack should be used in a modular manner. A circuit was also developed through which we can monitor the health of each cell and its usage. In such a way we can minimize the wastage of the whole battery when scrapped and also end user can identify the weak cell and replace it on its own. Through this, we also for increasing the shelf life of a battery pack.	Product Innovation	2022	Rudra Nand Sahu-8368483932	Dr. Pradeep K. Varshney Mr. J.P. Sharma Dr. Yogita Gupta (Outside Mentor)	250000
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Startups Mentored/Mentoring by Faculty Members of MRU

S.No.	Name of the start up	Nature of the Startup	Year	Name of Students	Name of Mentors	Grant Issued, if any	Granted by	Status
1	Geodence	Attendance App	2023	Diya Sharma (2K22CSUN01229) Ashish (2K21CSUN01013) Rohit Upreti (2K21CSUN01039) Ujjawal	Dr. Abhishek Saxena Dr. Ranjna Jain	250000	NewGen IEDC, MRIIC	Ongoing

				(22301018NN002) Mayur (22301018NN001)				
2	Ratiram Limbs	Nearly 190 million individuals worldwide have some form of physical disability , and we believe that if we could make a difference, why not. We are attempting to create a wearable robotic arm that is controlled by brain waves for people with special needs in order to assist them with their everyday activities and foster a sense of independence.	2022	Drishti Uppal-CST 2nd year AIML Lakshay:CST 1st year Hardware Shivam Minz: CST 4th year Hardware Joy Khaneja: CST 1st year AIML	Dr. Parneeta Dhaliwal Ms. Priyanka Gupta	250000	NewGen IEDC, MRIIC	Ongoing

3	Modular Batteries	<p>Modular Batteries are scrapped now a day if only one cell is damaged and there is no method through which a user can find which cell is not working properly. Modular batteries are used in various sectors such as household, automotive sector, etc. For this, we propose a solution that each cell in a battery pack should be used in a modular manner. A circuit was also developed through which we can monitor the health of each cell and its usage. In such a way we can minimize the wastage of the whole battery when scrapped and also end user can identify the weak cell and replace it on its own. Through this, we also for increasing the shelf life of a battery pack.</p>	2022	Rudra Nand Sahu-ECE 5th Sem. (2K20ECUN03001)	Dr. Pradeep K. Varshney Dr. J.P. Sharma Dr. Yogita Gupta (Outside Mentor)	250000	NewGen IEDC, MRIIC	Ongoing
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F. Participation of IIC-institute in various programs of Central and Stage Govt. Highlighting specially for the schemes or programs

- ARIIA – Participation in ARIIA 2018-2019, 2019-2020, 2020-2021, 2021-2022, 2022-2023
- NISP Adoption status - Trained Faculty members and students of all departments through a series of training sessions. Policy Formulation done for MRU, Policy Implementation in progress. Already one startup has been established by student which got funding from University and student got credit transfer under NISP policy. Two more students availed benefit of Additional Internship scheme under NISP policy with Credit Transfer/Mapping.
- Smart India Hackathon (SIH) etc.- Participation and winning prize in SIH 2019 , SIH 2020 and SIH 2022.
- PoC Competition & National Innovation Contest : 3 Teams participated in PoC Competition in August 2019 and 5 teams participated in National Innovation Contest 2020 and reached up to Business Plan Preparation level. 4 Teams Participated in Toyathon 2021
- Through Idea Competitions/Internal Hackathons around 20 ideas were generated. Students are in the process of entering ideas in Yukti Portal.

G. Detail of Social Media & Connections of IIC institute

MRU Facebook: <https://www.facebook.com/MRUFaridabad/>

MRU Twitter: https://twitter.com/manav_rachna

MRU Instagram: https://www.instagram.com/manav_rachna

H. Images of MRU-IIC & CoE





I. Contact

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