

2021-22

Annual Research & Innovation Report

Institute of Advanced Research



The University for Innovation

**Koba Institutional Area, Gandhinagar, 382421,
Gujarat-India**

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Foreword

The Institute of Advanced Research has experienced a rapid growth in the research capability during the academic year 2021/22. We have expanded our areas of research into energy storage, industrial applications of plasma, environmental technology, sensors for diagnostics, ionic liquids for synthesis, nano-science and technology, entrepreneurship and MSMEs as we committed ourselves to conducting research for innovation, building on a decade of excellence in Biological Sciences and Biotechnology. New areas in Biological Sciences and Biotechnology include vaccines, environmental biotechnology, amyloid peptides, and Covid-19 inhibitors, among others.

We have been fortunate in attracting highly accomplished research faculty from leading IITs and universities in India and beyond, all of whom possess world-class qualifications and expertise. These research-active professors join the University's existing research leaders.

Research that is not put to use does not help us handle global concerns such as long-term health, climate change, or resource depletion. Our goal is to make a tangible contribution to the advancement of innovation by utilizing interfaces across disciplines.

Despite the fact that we are a young and small institution, the values of our research in selected areas continue to be recognized across the research community. The Institute of Advanced Research's research excellence is built on the intellectual leadership of thought leaders in their respective domains. While some academic activities were hindered as a result of the Covid-19 outbreak, research activities were conducted as permitted by government rules.

We invested significantly in upgrading the infrastructure. In plasma research and selected fields of engineering, new state-of-the-art facilities were built. As part of the new academic block, two new research laboratories have been built, and biology and chemistry facilities have been extended.

We continue to attract funding from the DST, DBT, SERB, GUJCOST, and GSBTM, ICMR as well as private research and development funding from companies like Tata. The number of research articles published in top journals, seminars, webinars, and workshops reflects the research's dissemination. Our research has also begun to yield patents.

I am pleased to present you this report, which highlights the research excellence of a small but quickly expanding research university.



(Professor Rao Bhamidimarri)

President, IAR

The University at a Glance

Institute of Advanced Research (IAR) is an innovative modern university which offers professionally focused undergraduate, postgraduate, and research degree programs. IAR was established in 2006 with the support of the then President of India Dr A P J Abdul Kalam, who inaugurated the Institute, and the Prime Minister, Shri Narendra Modi, who was then the Chief Minister of Gujarat. The University is financially supported by Puri Foundation for Education in India, established by Professor Nathu Ram Puri, who is a leading industrialist in the UK with manufacturing and other businesses world-wide. IAR, which was established initially as a research institute, was awarded the university status under the Gujarat Private Universities Amendment Act, 2011. The university commenced offering educational programs in 2014 and currently has around 500 students in several undergraduate, masters, and research degree programs.

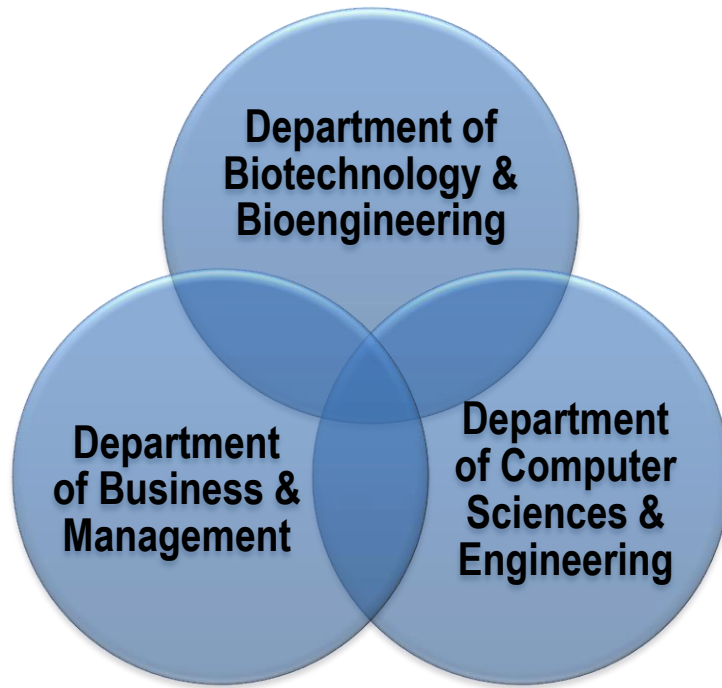
The university is a non-profit organisation and its sole mission is to promote world-class education, research, and innovation for young people in Gujarat and across the country. The campus is located on the banks of the Sabarmati River in Gandhinagar, Gujarat, in a beautiful setting. We have embarked on an ambitious campus extension project to ensure that our students have the best learning experience possible while also having access to a high-quality research environment.

The institute is well respected for its high quality of research nationally and internationally, with the research being published in top international journals. Our commitment is to make an impact on our economy, society, and the environment. To this end, our research is also being translated into patents.

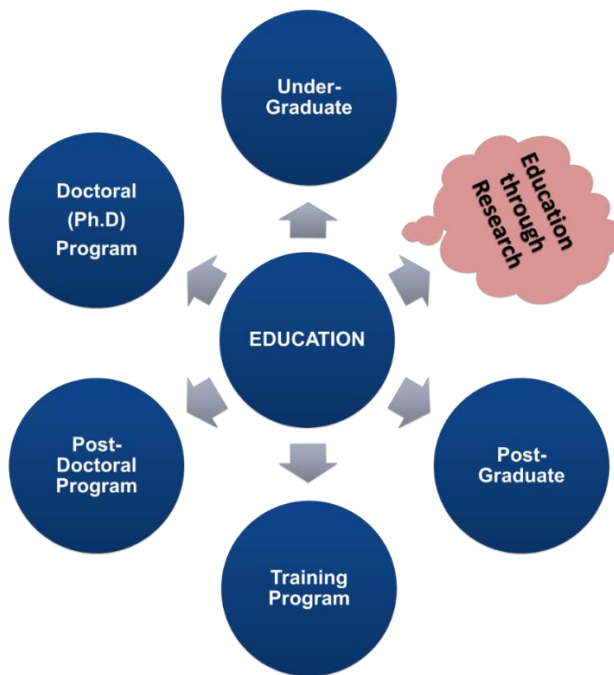
Research and innovation continue to be the university's *forte*. While our research in biotechnology continues to be recognised on a global scale, our research in a number of other fields is fast advancing. We built a strong research and development team in Plasma. In addition, impact of our research in environmental technology is reflected by the developmental research sponsored by blue chip companies such as Tata Group. Our study is starting to result in patents, which will have an impact on industrial innovation in the future.

The university aspires to be one of the premier private higher education institution in the country, with a strong international presence and a concentration on quality above scale.

Academic Departments



Education Informed by Research



1. Research Overview

IAR, strives to develop into a university of excellence in Research and Innovation keeping in mind the current and future requirements to match high standard in basic sciences, engineering, technology and humanities. The University encourages its faculty and other academic staff to undertake research projects to strengthen its research profile.

1.1 Key research areas at IAR:

a) Plasma and its Applications

Industrial applications of plasma include levitation of dust particles, rotating electrode process for the production of micron-size spherical particles of a range of materials comprising metals, de-binding and sintering process, plasma smelting and reduction of ferrous ores fines, and microwave plasma.

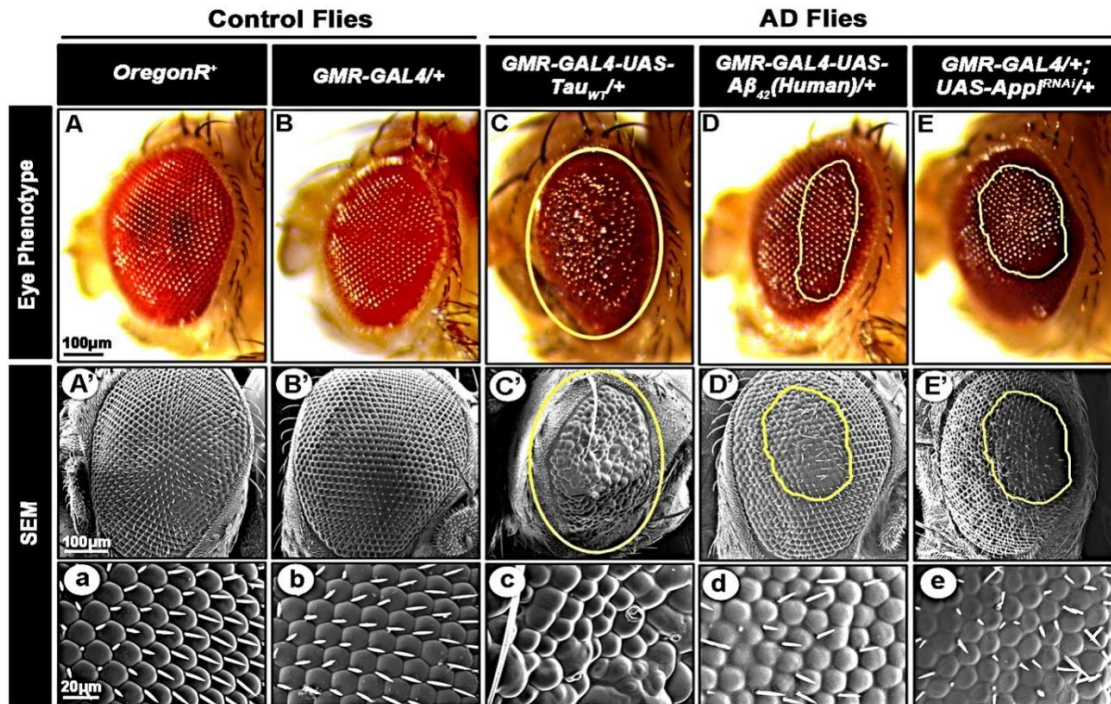
Research Lead: Prof. Ganesh Prasad



b) Understanding the molecular details of Neurodegenerative Diseases

Neuro-inflammatory and neurodegenerative disorders, pathophysiological processes, and possible intervention strategies are being led from a range of perspectives.

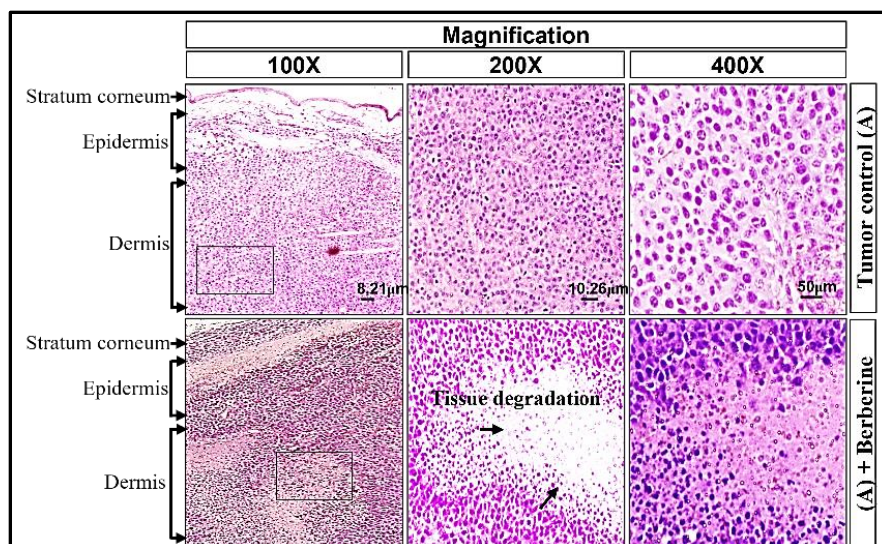
Research Lead: Prof. Anand K. Tiwari and Prof. Reena Rajput



c) Unlocking the secrets of Cancer

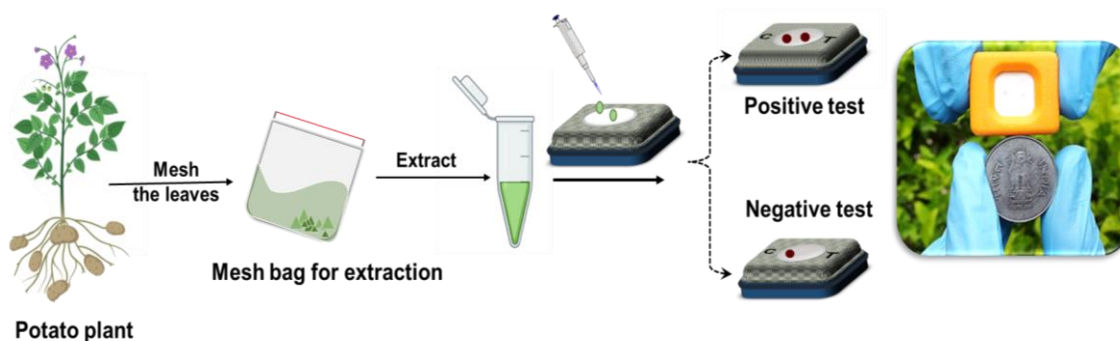
It includes cellular signaling pathways of apoptosis, inflammation as well as their cross-talk, and their implications on cancer. This group is trying to explore the mechanisms of signal integration between inflammasome and other immune pathways, epigenetic regulation of cellular oncogenic kinases by tumor virus in cancer progression; understanding the host-lumpy skin disease virus interaction through genomics and proteomics approach.

Research Lead: Prof. Reena Rajput, Dr. Neeru Singh and Dr. Shuvomoy Banerjee



d) Sensor Development

It involves design and development of paper based affordable nano-biosensors to sense the risk of cardiovascular disorders and plant viral diseases.



Research Lead: Dr. Alok Pandya

e) Computational Biology

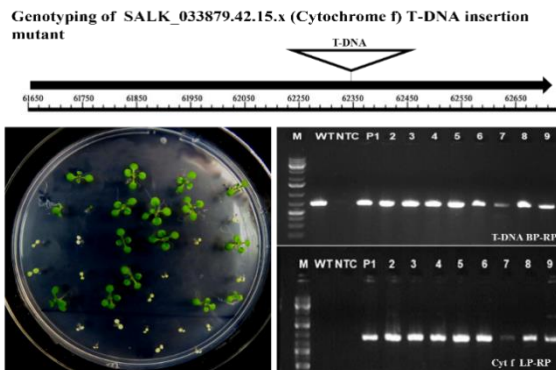
It comprises of distributed information at the sub-center by the Department of Biotechnology, Government of India, for research work in emerging areas of computational biology, structural biology, recombinant therapeutic proteins, and application of machine learning in addition to AI for protein structural analyses.

Research Lead: Dr. Dhaval Patel and Dr. Utpal Bakshi

f) Plant Biotechnology

The group is exploring the role of chloroplasts and plastid generated reactive oxygen species in abiotic stress-induced programmed cell death. It also involves chemical de-priming and quantitative genetics for disease resistance and yielding improvement in crops, Secondary metabolites Pathways and identification of plant transcription factors and their role for spatial-temporal developmental regulation of plants.

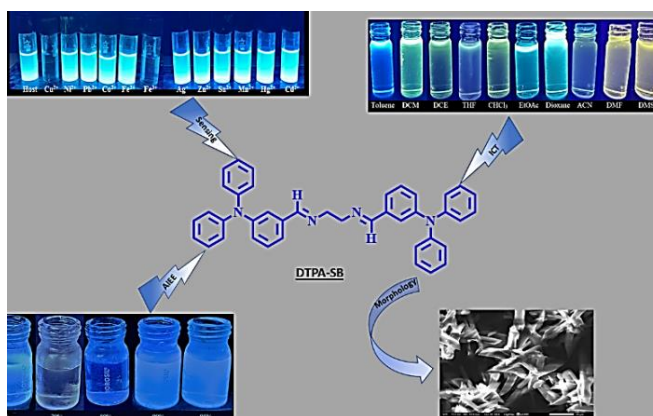
Resource Lead: Prof. Budhi Sagar Tiwari and Dr. Abhishek Sharma



g) Novel Synthesis

It takes into account the development of novel peptide synthesis methodologies, peptide based ionic liquids, peptidomimetics, and synthesis of squalamine such as antimicrobial agents.

Research Lead: Dr. Satyendra Mishra and Dr. Roli Mishra



h) AI and ML

It covers application of AI for litter detection, image analysis, and ML for Covid-19 diagnosis.

Research Lead: Dr. Sachin Sharma

i) Energy and Environmental Technologies

It includes thermal energy storage, energy from waste plastics, carbon dioxide sequestration, and development of novel technologies for industrial effluents, landfill leachate characterization, and treatment, wastewater treatment process modeling and analysis.

Research Lead: Dr. Abhay Dinker



j) Nanomaterials

It incorporates nanostructured materials and nanocomposites, nanofibers and applications, as well as light emitting materials.

Research Lead: Dr. Niranjana Patra

k) Enterprise Development

It takes into account the economics of education, growth and development, role of innovation in MSME and SME development, and science and entrepreneurship.

Research Lead: Dr. Sharad Kumar

l) Developmental Economics

The study is about operational aspects of MSMEs and their impact on financial viability as well as role of industry associations on the development of MSMEs.

Research Lead: Dr. Radha Tiwari

2. Thriving Research Environment

Research at IAR is supported by various government funding agencies, non-government agencies and IAR seed grant. The Government funding agencies include support from the Department of Biotechnology (DBT), Science and Engineering Research Board (SERB), Department of Science and Technology (DST), Indian Council of Medical Research (ICMR), Gujarat State Biotechnology Mission (GSBTM) and Gujarat Council of Science and Technology (GUJCOST), and non-government funding agencies include support from TRUSHANA EXIM Surat.





2.1 Ongoing Research Grants

The details of ongoing research support are as follows:

Sr. No.	Title of Grant	Faculty Name	Role (PI/Co-PI)	Grant (Lakh)	Award Year	Funding Agency
Department of Biotechnology & Bioengineering						
1	Characterization of generation of peroxy nitrite during cross reaction of reactive oxygen and nitrogen species within cell and its role in salinity induced Programmed Cell Death in Pea (<i>Pisum sativum</i>)	Prof. Budhi Sagar Tiwari	PI	40.0	2022	SERB, New Delhi, (Core Research Grant)
2	Assessing EPS-Thorium complexation by Thermotolerant bacteria	Dr. Arpit Shukla	PI	21.6	2022	SERB, New Delhi (Start-up Research Grant)
3	Digital signal processing based optimized approaches to identify replication origin regions in eukaryotic genomes	Dr. Ahsan Z Rizvi	PI	6.60	2019	SERB, New Delhi (Matrics Research Grant)
4	Characterization of a role of Mediator of DNA damage checkpoint 1 protein in drug resistance to oncogenic KRAS inhibition in NSCLC and its therapeutic relevance	Dr. Neeru Singh	PI	25.28	2022	ICMR, New Delhi
5	Repositioning Doxycycline as Anti-Cancer Therapy and Exploring its Synergy with extracellular ATP manipulation in Breast Cancer: Pre-Clinical and Early Clinical Exploration	Dr. Reena Agrawal-Rajput	PI	53.70	2021	GSBTM Gujarat

6	Identification and validation of potential phytochemicals against proteases (3CLpro/Mpro) of SARS-CoV-2 using combined computational and experimental tools.	Dr. Dhaval Patel	PI	11.23	2021	GSBTM Gujarat
7	cFMS kinase blockade for Macrophage subset-2 (M2) depletion as a potential immunotherapeutic strategy for antibiotic induced Immunosuppression.	Dr. Reena Agrawal-Rajput	PI	31.19	2020	SERB 2020
8	Characterization and assessment of solid waste, leachate and ground water quality at pirana (Project extended for 6 months)	Dr. GS Vishwakarma	PI	9.69	2019-2022	GSBTM Gujarat
9	Design and development of bio-inspired multi-layered membrane for Industrial wastewater treatment” (Inter-departmental Research Grant)	Dr Alok Pandya; Dr. GS Vishwakarma; Dr. Dhaval Patel	PI Co-PI Co-PI	38.41	2020	DST, New Delhi
10	FIST Grant (Department of Biotechnology & Bioengineering)	Dr. Reena Rajput (coordinator)	Infrast ructur e suppo se Grant	69*	2020	DST
	Total Ongoing Grant:8 (Externally Funded)	Total Sanctioned Amount: 306.7 Lakh (*Half of the sanctioned money will be contributed by IAR, Gandhinagar)				

2.2 IAR Seed Grant (2021-22)

Sr. No.	Faculty	Title of Grant	Department	Grant Sanctioned (Lakh)
1)	 Dr. Neeru Singh	Novel role of MDC1 in autophagy and its implications in cancer therapy	DBSB	1:00
2)	 Dr. Niranjana Patra	Self-Sanitizing plasma modulated nonwoven fabrics with a nanostructure for rapid killing of pathogenic virus	DEPS	1.0
3)	 Dr. Abhay Dinker	Development of packed bed thermal storage unit using encapsulated thermal storage materials	DEPS	1.0
4)	 Dr. Ganesh Bajad	Conducting polymer nanocomposite electrodes for the Electrosorption based wastewater treatment	DEPS	1.0

2.3 Funds Mobilized from Non-Government Funding Agencies

Sr. No.	Name of the Project/ Endowments, Chairs	PI	Department	Year of Award	Funds provided (lakhs)	Duration (Year)	Funding Agency
1)	Microwave plasma production using 2.45 GHz source and 915MHz source	Dr. K.S. Ganesh Prasad	Computers Scenes & Engineering	2021	35	2	TRUSHAN A EXIM Surat

2.4 Submission of New Research Proposals

The details are as follows

Sr. No.	Grant Title	Name of PI/CO-PI)	Role (PI/CO-PI)	Proposed Budget (Lakh)	Funding Agency	Department
(a) Department of Biotechnology & Bioengineering (DBBE)						
1	Design and Development of Nanozyme based Multiplexed Detection System for Food Adulterants	Dr. Ritesh Kumar Shukla, Ahmedabad University (PI) Dr. Alok Pandya	PI, Co-PI	10.73	SERB, New Delhi	DBBE
2	An approach towards "Mitotherapy": Characterizing the therapeutic role of Mitoquinone (Mito Q) and Mitochondria-targeted α -Tocopherol (Mito VitE) on mitochondrial health using Drosophila model of Alzheimer's disease	Prof. Anand K. Tiwari Prof. Budhi Sagar Tiwari	PI, Co-PI	54.30	DBT, New Delhi	DBBE
3	"A Study on Eco-toxicological Assessment, Mathematical Modeling and Remediation of Landfill Leachates by Using MoS ₂ Foam at Pirana Dump Site"	Dr. Anjali Mishra Dr. Prakash Chandra and Dr. Brijesh Triphathi (PDEU)	PI, CO-PI	26.67/- (IAR) 25.17/- (PDEU)	SERB, New Delhi, (CRG Scheme)	DBBE

4	RES-SAC-2022-017: Additive manufacturing (3D printing) using Carbon Allotropes	Dr. Ganesh Bajad Dr. Sachin Sharma	PI CO-PI	23.09	ISRO, New Delhi	DBBE
5	Phenothiazine based AIEE Schiff-Bases for detection of Explosive in Solution and Paper based Device for On-site rapid detection	Dr. Roli Mishra Dr. Vivek Anand (Co-PI) Chandigarh University	PI Co-PI	24.86 1.71	SERB, CRG Scheme	DBBE
6	Characterization of Gut microbiota and its linkage with AD pathologies using Drosophila model of Alzheimer's disease	Prof. Anand K. Tiwari	PI	33.50	SERB, New Delhi	DBBE
7	Bact-i-Sense: A paper disc integrated point of care smart nano biodevice for rapid diagnosis of bacterial infection status	Dr. Alok Pandya, Prof. Vaibhav Bhatt, Gujarat Technological University, Ahmedabad	PI Co-PI	43.07	SERB, New Delhi	DBBE
8	Optimization of regiospecific glycosylation process of colchicine and its derivatives through bacterial fermentation	Dr. Narendra Kumar Dr. Arpit Shukla	PI Co-PI	44.81	SERB, New Delhi	DBBE
9	Deciphering the effect of siderophore producing plant growth promoting microbes over anticancer vinblastine biosynthesis in Catharanthus roseus.	Dr. Abhishek Sharma	PI	22.00	GSBTM, Gujarat	DBBE
10	Metagenomic Signatures of Oral Microbiome in Diabetes Mellitus: A Cohort Study in Gujarat (Under DST-SRG Scheme)	Dr. Utpal Bakshi	PI	29.12	SERB, New Delhi	DBBE
11	Characterization of adaptive regulatory pathways of extremophile microalgae isolated from hot springs for its/their industrial applications Theme: Biology of Plants under extreme environments (under the DST SERB Special Call for Proposals)	Dr. Gajendra Singh Prof. Budhi Sagar Tiwari	PI Co-PI	40.77	SERB, New Delhi	DBBE
12	Design of conducting polymer nanocomposite electrodes for	Dr. Ganesh Bajad	PI Co-PI	21.28	GUJCO ST	DBBE

	wastewater treatment using capacitive deionization techniques.	Dr. Koshal Kishor, and Dr. Abhay Dinker				
13	Design and Development of Fluorination Strategies for Organic Molecules and Peptides: Prospects for Therapeutic Application	Dr. Satyendra Mishra	PI	20.35	SERB, New Delhi	DBBE
14	Imidazolium-Based Biocompatible Ionic liquids (BILs) as Catalyst/Media/Reagent for Organic Reactions. (Under SERB-CRG-Special call Scheme)	Dr. Roli Mishra	PI	21.45	SERB, New Delhi	DBBE
15	Wealth out of waste: Production of thermostable polyhydroxyalkoanates using agro waste	Dr. Dhara Patel Dr. Arpit Shukla	PI Co-PI	25.3	GUJCO ST	DBBE
16	Identification of alternate lead molecules targeting Isoprenoid pathway proteins and other metabolic proteins from AMR strains using computational drug repurposing approaches	Dr. Dhaval Patel	PI	20.0	GSBTM, Gujarat	DBBE
17	Development of High-Temperature High-Resilience SiOC/SiC-Transition Metal Carbide Ceramic Micro components via 3D Printing (Stereolithography)	Dr. Niranjana Patra	PI	28.85	SERB, New Delhi, Core Research Grant	DBBE
18.	Valorization of weed waste to produce polyhydroxyalkonates	Dr. Dhara Patel Dr. Arpit Shukla	PI Co-PI	22.96	GSBTM	DBBE
19	Synthesis strategy of cucurbitacin-lanosterol chimera and exploration of its anticancer and apoptotic potential	Dr. Satyendra Mishra Prof. Reena Rajput	PI Co-PI	30.13	SERB	DBBE
20	Development of recycling process for the end-of-life PV modules and solar panels and recovery of life-threatening and precious metals	Dr. Busupalli Balanagulu Dr. Raviprakash Chandra	PI CO-PI	26.40 22.00	CPRI	DBB
21	In-Situ controlled architecture of functionalized MWCNTs over transition metal ions modified	Dr. Ganesh Bajad Dr. Koshal Kishor (CO-PI)	PI Co-PI	26.40	SERB (FIRE)	DBBE

	Glass Fiber Epoxy composites					
22	Deciphering the role of transcription factors in developmental and spatial-temporal regulation of anticancer vinblastine and vincristine biosynthesizing monoterpene indole alkaloids pathway in <i>Catharanthus roseus</i> .	Dr. Abhishek Sharma	PI	40.12	SERB CRG	DBBE
23	Development of operational pilot plant from proof of concept bioinspired membrane filtration assembly for wastewater treatment	Dr Gajendra (PI) Dr Alok (PI) Dr Dhaval Patel (PI)	PI	45.29	DST TECHNOLOGY MISSION DIVISION	DBBE
24	Microneedle enabled smart nano-biodevice for isolation and rapid detection of multiplexed plant virus	Dr. Alok Pandya Prof. Budhi Sagar Tiwari Ms.Nidhi Verma	PI Co-PI	39.676	Scheme for Young Scientists and Technologists	DBBE
25	Understanding the host-lumpy skin disease virus Interaction through genomics and proteomic approach	Dr. Shuvomoy Banerjee (PI) Dr. Prabhakar A Tembhone	PI (Co-PI)	100.0	DBT	DBBE
26	Development of In-house novel diagnostic platforms for the lentivirus infections of small ruminants	Dr. Prabhakar A Tembhone Dr. Shuvomoy Banerjee	PI Co-PI	59.00 42.35 (IAR)	DBT	DBBE
Total				848.346		
(b) Department of Computer Sciences & Engineering (DCSE)						
27	Development of dielectric barrier discharge plasma device to treat the cattle urine (organic fertilizer) and use of it for a comparative study of the plant's growth.	Dr. Magilal Choudhary	PI	20.77	SERB, New Delhi	DCSE
28	Air Quality prediction of Ahmedabad Region: Through Machine Learning Approach using a Multi-Objective GA Optimization	Dr. Isha Talati	CO-PI	17.42	SERB, New Delhi, Core Research Grant	DCSE

29	Advanced methods and algorithms for automatic information extraction for (online/offline) processing and analysis of images/data from various multi-source data for Urban Planning & Development	Dr. Sachin Sharma	PI	24.14	ISRO, New Delhi	DCSE
30	Predictive Policing Using Big Data Analysis-AI for Predicting Places in Gujarat (Ahmedabad and Surat) at a High Risk of Violence and Crime Incidents	Dr. Sachin Sharma	PI	11.750	GUJCO ST	DCSE
Total				74.08		
				(a) + (b): 922.426		
				(Nine Hundred Twenty-Two lakh forty-two thousand six)		

3. Infrastructure Support Grant/Facilities

3.1 FIST Grant to Department of Biological Sciences & Biotechnology

Department of Biological Sciences & Biotechnology has received the “Fund (69 lakh*) for Improvement of S&T Infrastructure (FIST)” from the Department of Science & Technology (DST), Government of India.

The instruments sanctioned in the grant (Fluorescence Microscope and Flow cytometer) has been procured and installed at IAR.

*Half of the sanctioned money will be contributed by IAR

3.2 Supercomputer Facility

IAR has received a Param Shavak Supercomputer facility supported by the Gujarat Council of Science and Technology (GUJCOST), Gujarat.

3.3 Laser Scanning Confocal Microscope Facility at IAR

IAR has DBT sponsored “Laser Scanning Confocal Microscope facility” (Year 2009) that was non-functional due the problem with Argon laser. The facility has been repaired and the old laser has been replaced with new Argon Laser casting 21.48 lakh.

3.4 Proposal development for Technology Enabling Centre (TEC) scheme by Department of Science & Technology

IAR had submitted its proposal to DST under “*Technology Enabling Centre (TEC)*” scheme. The objective of TEC scheme to create an ecosystem for Technology Development in the Universities and to provide a platform to network researchers with other institutes, National laboratories and industry.

Coordinator: Dr. Alok Pandya (DBSB); Co-coordinator: Dr. Ahsan Rizvi (DCSE)

4. Publications (2021-22)

Publication summary:

Sr. No	Publication Type	2021	2022	Total
1)	Research Article	22	5	27
2)	Review Article	14	11	25
3)	Book Chapter	10	1	11
4)	Book	1	2	3
5)	Conference Proceeding	01	0	1
	Total (2021)	48	19	67

2021

- 1) **Shukla, A.**, Parmar, P., Patel, B., Goswami, D., & Saraf, M. (2021). Exemplifying the next generation of antibiotic susceptibility intensifiers of phytochemicals by LasR-mediated quorum sensing inhibition. *Scientific Reports*, 11:22421, 1-23. ISSN:2045-2322 (Impact factor: 5.133) <https://doi.org/10.1038/s41598-021-01845-8> (**Research article**)
- 2) **Shukla, A.**, Parmar, P., Patel, B., Goswami, D., & Saraf, M. (2021). Breaking Bad: Better call gingerol for improving antibiotic susceptibility of *Pseudomonas*

aeruginosa by inhibiting multiple quorum sensing pathways. Microbiological Research, 238, 1-14. ISSN:0944-5013 (Impact factor: 5.415) <https://doi.org/10.1016/j.micres.2021.126863> **(Research article)**

- 3) **Shukla, A.**, Jani, N., Polra, M., Kamath, A., & Patel, D. (2021). CRISPR: The Multidrug Resistance Endgame? Molecular biotechnology, 1-10. **(Review article)**.
- 4) Parashar, A., **Shukla, A.**, Sharma, A., Behl, T., Goswami, D., & Mehta, V. (2021). Reckoning γ -Glutamyl-S-allylcysteine as a potential Main protease (Mpro) inhibitor of novel SARS-CoV-2 virus identified using docking and molecular dynamics simulation. Drug Development and Industrial Pharmacy, **(Research article)**
- 5) Jha, C. K., Sharma, P., **Shukla, A.**, Parmar, P., Patel, R., Goswami, D., & Saraf, M. (2021). Microbial enzyme, 1-aminocyclopropane-1-carboxylic acid (ACC) deaminase: An elixir for plant under stress. Physiological and molecular plant pathology. **(Research article)**
- 6) Parmar, P., Rao, P., Sharma, A., **Shukla, A.**, Rawal, R. M., Saraf, M., Patel, B., & Goswami, D. (2021). Meticulous assessment of natural compounds from NPASS database for identifying analogue of GRL0617, the only known inhibitor for SARS-CoV2 papain-like protease (PLpro) using rigorous computational workflow. Molecular diversity. **(Research article)**
- 7) Rao, P., Patel, R., **Shukla, A.**, Parmar, P., Rawal, R.M., Saraf, M., & Goswami, D. (2021). Identifying structural-functional analogue of GRL0617, the only well-established inhibitor for papain-like protease (PLpro) of SARS-CoV2 from the pool of fungal metabolites using docking and molecular dynamics simulation. Molecular diversity, 1-21. **(Research article)**
- 8) **Shukla, A.**, Parmar, P., Goswami, D., Patel, B., & Saraf, M. (2021). Exemplifying an archetypal Thorium-EPS complexation by novel thoriotolerant Providencia thoriotolerans AM3. Scientific Reports, 11:3189, 1-15. **(Research article)**
- 9) **Shukla, A.**, Parmar, P., Kapoor, G., Goswami, D., Jha, C. K., Patel, B., & Saraf, M. (2021). Curse of La Corona: unravelling the scientific and psychological conundrums of the 21st century pandemic. Molecular diversity, 1-14. **(Review article)**

- 10) Prajapati, K., Nayak, R., **Shukla, A.**, Parmar, P., Goswami, D., & Saraf, M. (2021). Polyhydroxyalkanoates: An Exotic Gleam in the Gloomy Tale of Plastics. *Journal of Polymers and the Environment*, 1-20. **(Review article)**
- 11) Mehta, K., **Shukla, A.**, & Saraf, M. (2021). Articulating the exuberant intricacies of bacterial exopolysaccharides to purge environmental pollutants. *Heliyon*, 7(11), 1-11. ISSN:2405-8440. **(Review article)**
- 12) Challagundla N, Rajput RA. (2021). microRNAs (miR 9, 124, 155 and 224) transdifferentiate mouse macrophages to neurons. *Experimental Cell Research*, Volume 402, Issue 1, 112563. **(Research Article)**
- 13) Bhatt M, Pandey SS, Tiwari AK, Tiwari BS. (2021). Plastid mediated Singlet Oxygen in Regulated Cell Death. *Plant Biology*. (German Society for Plant Sciences and The Royal Botanical Society of the Netherlands). **(Review Article)**
- 14) Tomar V, Guriqbal Singh Dhillon GS, Singh D, Singh RP, Poland J, Joshi AK, Tiwari BS, Kumar U (2021). Elucidating SNP-based genetic diversity and population structure of advanced breeding lines of bread wheat (*Triticum aestivum* L.). *Peer J* 9, e11593. **(Research Article)**
- 15) Waghela B, Vaidya F, Chhipa AS, Ranjan K, Tiwari BS, Pathak CM. (2021). Age-rage synergy influences programmed cell death signaling to promote cancer. *Molecular & Cellular Biochemistry*, 476 (2), 585-598. **(Review Article)**
- 16) Tomar V, Singh D, Singh RP, Poland J, Joshi AK, Singh G D, Singh PK, Kumar S, Rahman MM, Tiwari BS, Kumar U (2021). New QTLs for spot blotch disease resistance in wheat (*Triticum aestivum* L.) using genome-wide association mapping. *Frontiers in Genetics*. 11, PMID: PMC7841440. **(Research Article)**
- 17) Padh H, Desai P, Sharma D and Yagnik B. (2021). EpiMix Based Novel Vaccine Candidate for Shigella: Evidence of Prophylactic immunity in Balb/c Mice. *International Journal of Peptide Research and Therapeutics*- (Accepted). DOI10.1007/s10989-020-10153-0. **(Research Article)**
- 18) Manuka R, Ashok Saddhe Ankush, Srivastava AK, Kumar Kundan Penna S. (2021). Overexpression of rice OsWNK9 promotes Arsenite tolerance in

- transgenic Arabidopsis plants. *Journal of Biotechnology*, 332, 114-125. **(Research Article)**
- 19) Ayele A., Suresh A., Benor S. (2021). Phycoremediation of Heavy Metals, Factors Involved and Mechanisms Related to Functional Groups in the Algae Cell Surface – A Review. In: Aravind J., Kamaraj M., Prashanthi Devi M., Rajakumar S. (eds) *Strategies and Tools for Pollutant Mitigation*. Springer, Cham. https://doi.org/10.1007/978-3-030-63575-6_13 **(Book Chapter)**
- 20) Pandya A, Shah K, Prajapati H and Vishwakarma G S, (2021). GQD embedded bacterial cellulose nanopaper based multi-layered filtration membrane assembly for industrial dye and heavy metal removal in wastewater, *Cellulose*. **(Research Article)** (In press)
- 21) Panchal K, Tiwari AK. (2021). Miro (mitochondrial Rho GTPase), a key player of mitochondrial axonal transport and mitochondrial dynamics in neurodegenerative diseases. *Mitochondrion*.56:118-135. doi: 10.1016/j.mito.2020.10.005. **(Review Article)**
- 22) Challagundla N, Rokkam P, Zala D, Rakesh R, Rajput RA (2021). Chlamydia trachomatis alters p53 in epithelial cells and manipulates host cell lipid metabolism and CD40 signalling polarizing anti-inflammatory macrophages. *Molecular Biology of the Cell*, 31, No.26; doi: 10.1091/mbc. E20-10-0665 **(Conference proceeding)**
- 23) Pradhan A, Mishra S, Basu SM, Surolia A, Giri J, Srivastava R, Panda D. (2021) Targeted nanoformulation of C1 inhibits the growth of KB spheroids and cancer stem cell-enriched MCF-7 mammospheres. *Colloids Surf B Biointerfaces*, 2021, 202:111702. **(Research Article)**
- 24) Pradhan A, Mishra S, Surolia A, Panda D. (2021) C1 inhibits liquid-liquid phase separation and oligomerization of tau and protects neuroblastoma cells against toxic tau oligomers. *ACS Chem. Neurosci.*2021, 12, 11, 1989–2002. **(Research Article)**
- 25) Bariya A, Anand V, Mishra S. (2021), Recent Advances In the Bile Acid Based Conjugates/Derivatives towards Their Gelation Applications, *Steroid*, 108769 **(Review Article)**

- 26)Goswami, R. C., Joshi, H., Gautam, S., Om, H. (2021). Applications of Big Data and Internet of Things in Power System. In Architectural Wireless Networks Solutions and Security Issues (pp. 209-225). Springer, Singapore. **(Book Chapter)**
- 27)Misra, N., Bhatt, S., Arefi Khonsaric,F., Kumar,V.(2021). State of the Art in Plasma Processing for Healthcare Applications: Can it Help Fight Viral Pandemics Like COVID-19. Plasma Processes Polym. 18:e2000215, 1-23). **(Review Article)**
- 28)Anand V, Mishra R, Barot Y. (2021). Recent advances in the development of pure organic white light emitters. Dyes and Pigments. 191, 109390. **(Review Article)**
- 29)Mishra R, Mishra S, Chaubey SA, Barot YB. (2021). Ionic liquids as alternative greener solvents and catalysts in organic transformations in Book title: Handbook of Greener Synthesis of Nanomaterials and Compounds: Volume 1: Fundamental Principles and Methods. Elsevier Editors: Boris Kharisov, Oxana Kharissova Pages 359-404 ISBN: 978-0-12-821938-6. **(Book Chapter)**
- 30)Mishra R, Mishra S, Barot YB. (2021).Greener synthesis and stabilization of metallic nanoparticles in ionic liquids” in Book title: Handbook of Greener Synthesis of Nanomaterials and Compounds: Volume 2: Synthesis At the Macroscale and Nanoscale. Elsevier Editors: Boris Kharisov, Oxana Kharissova Pages 245-276 ISBN: 978-0-12-822446-5 **(Book Chapter)**
- 31)Barot YB, Mishra R* (2021). EMIM Ionic Liquids: Applications In Organic Synthesis And Catalysis, IAR , Natural Science, IAR. **(Review Article)**
- 32)Kumar S. (2021). Classical and Bayesian Estimation of the Process Capability Index Cpy Based on Lomax Distributed. In Yadav D.K. (Eds.), Advance Research Trends in Statistics and Data Science (pp. 115-131). MKSES Publication (ISBN-978-81-949305-4-9). **(Book Chapter)**
- 33)Kumar S., Yadav, A. S., Dey, S., and Saha, M. (2021). Parametric inference of generalized process capability index Cpyk for the power Lindley distribution Quality Technology and Quantitative Management. **(Research Article)**

- 34)Yadav, A. S., Saha M., Tripathi H., and Kumar S. (2021). The exponentiated xgamma distribution: Estimation and its application. Statistica. **(Research Article)**
- 35)Mishra P., Aloka S., Rajak D., Javed M., Begc I., Bahugunab M., Talati I. (2021). Investigating optimum ship route in the Antarctic in presence of sea ice and wind resistances - A case study between Bharati and Maitri, Polar Science, 100696. **(Research Article)**
- 36)Talati I., Mishra P., Shaikh A. (2021). An Integrated and Collaborated Supply Chain Model Using Quantity Discount Policy with Back Order for Time-Dependent Deteriorating Items Decision Making in Inventory Management Springer, Singapore, 2021, 133-148. **(Book Chapter)**
- 37)Talati I., Mishra P., Shaikh A. (2021). An Analytic and Genetic Algorithm Approach to Optimize Integrated Production-Inventory Model Under Time-Varying Demand. Soft Computing in Inventory Management, Springer, Singapore, 2021, 149-162. **(Book Chapter)**
- 38)Pattani, K., & Gautam, S. (2021). SonicEvasion: a stealthy ultrasound-based invasion using covert communication in smart phones and its security. International Journal of Information Technology, Springer 1-11. **(Research article)**
- 39)Saxena A K, Singh R K and Joshi H C (2021). "Time-of-flight mass spectrometry of aluminium plasma: Investigation of multiply charged ions and clusters". Plasma Sources Science and Technology, 2021,30, 035016. **(Research article)**
- 40)Dinker, A., Agarwal, M. and Agarwal, G 100696D, (2021). Modelling and simulation of helical coil embedded heat storage unit using beeswax/expanded graphite composite as phase change material. Mathematical Modelling, computational intelligence techniques and renewable energy, Springer, pp 411-423. **(Book Chapter)**
- 41)Jayaraj P, Limna D, Akondi S and Sharma S. (2021). Early Detection of Covid-19 on CT Scans Using Deep Learning Techniques.Lecture Notes in Electrical Engineering book series , Springer LNEE, volume 736. **(Book Chapter)**

- 42) Thakkar, H., Tiwari, R., and Chandegara, V., (2021). Intertemporal study of CETP: Is it a far cry to ecological sustainability? In S.Shome & Saurabh (Eds.) Unlocking Management Research, A Roadmap to Future Research. (pp. 53-65) BOOMERANG, Ahmedabad. **(Book Chapter)**
- 43) Saha M., Dey S., and Kumar S. (2021). Parametric confidence intervals of Spmk for generalized exponential distribution. American Journal of Mathematical and Management Sciences, 40(2), 1-22. **(Research Article)**
- 44) Verma, N., Tiwari, B. S., & Pandya, A. (2021). Field Deployable Vertical Flow Based Immunodevice for Detection of Potato Virus Y in Potato Leaves. ACS Agricultural Science & Technology, 1(5), 558-565. **(Research Article)**
- 45) Verma, N., Kulkarni, R., & Pandya, A. (2021). Microfluidic tools for veterinary and zoonotic disease diagnostics. Progress in Molecular Biology and Translational Science, 187(1), 281-293. **(Review Article)**
- 46) Verma, N., Sharma, S., Vishwakarma, G. S., & Pandya, A. (2021). Plant Stimulant to Nanotoxicity: Recent Advancements and Opportunities. Journal: Current Nanotoxicity and Prevention, (1), 67-77. **(Review Article)**
- 47) Bariya D, Mishra S (2021). Recent Development in Antibacterial Activities of Chalcones. Natural Sciences, The Journal of the Institute of Advanced Research. 2(1), 4-20. **(Review Article)**
- 48) Pandya A, Singh V. (2022). Micro/nanofluidics and lab-on-chip based emerging technologies for biomedical and translational research applications. Part A, Volume 185, Elsevier publications, Netherland, ISBN: 9780323988995 **(Book)**

2022

- 1) Pandya A, Singh V, Bhosle R. (2022). Design, Principle and Application of Self-Assembled Nanobiomaterials in Biology and Medicine. Elsevier publications, Netherland, ISBN: 9780323909853. **(Book)**
- 2) Pandya A, Singh V. (2022). Micro/ nanofluidics and lab-on-chip based emerging technologies for biomedical and translational research applications. Part B,

Volume 186, Elsevier publications, Netherland, ISBN: 9780323988995 (**Book**)

- 3) Srivastava K, Verma N, Singh V, Pandya A. (2022). An introduction of self-assembled nanobiomaterials and their applications, Book Name: Design, Principle and Application of Self-Assembled Nanobiomaterials in Biology and Medicine, Elsevier publication, 149-171 (**Book chapter**)
- 4) Kulkarni R, Pandya A. (2022). 3D bioprinting: overview and recent developments, Book Name: Design, Principle and Application of Self-Assembled Nanobiomaterials in Biology and Medicine, Elsevier publication, 149-171 (**Book chapter**)
- 5) Bariya D, Mishra S (2022). Lewis Acid Catalyzed Nitrile Synthesis from Aldehyde, Tetrahedron Letter, 92, 153711. (**Research Article**)
- 6) Barot YB, Anand V, Mishra R. (2022) Di-Triphenylamine-based AIE Active Schiff Base for Highly Sensitive and Selective Fluorescence Sensing of Cu²⁺ and Fe³⁺. Journal of Photochemistry and Photobiology A: Chemistry, 113785. (**Research Article**)
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- 8) Verma, N., Walia, S., & Pandya, A. (2022). Micro/nanofluidic devices for DNA/RNA detection and separation. Micro/Nanofluidics and Lab-on-Chip Based Emerging Technologies for Biomedical and Translational Research Applications-Part A, 85. (**Review Article**).
- 9) Verma, N., Prajapati, P., Singh, V., & Pandya, A. (2022). An introduction to microfluidics and their applications. Micro/Nanofluidics and Lab-on-Chip Based Emerging Technologies for Biomedical and Translational Research Applications-Part A, 1. (**Review Article**).

- 10) Bhatt V, Tiwari AK (2022). Sirtuins, a key regulator of ageing and age-related neurodegenerative diseases. *International Journal of Neuroscience*, 1-26 (**Review Article**).
- 11) Vaidh S, Parekh D, Patel D, Vishwakarma GS. (2022). Leachate treatment potential of nanomaterial-based assemblies: a systematic review on recent development. *Water Sci Technol*, wst2022168. 26 (**Review Article**).
- 12) Banerjee S, Wang X, Du S, Zhu C, Jia Y, Wang Y, Cai Q. Comprehensive Role of SARS-CoV-2 Spike Glycoprotein in Regulating Host Signaling Pathway. *J Med Virol*. 2022. doi: 10.1002/jmv.27820. (**Review Article**).
- 13) Chandegara, V., & Tiwari, R. (2022). Disassociating relation between life expectancy and per capita income - India. *SSRN Electronic Journal-Development Economics: Macroeconomic Issues in Developing Economies Ejournal*. (Elsevier Publication) <https://ssrn.com/abstract=4075892>. (**Review Article**).
- 14) Keyur Bhatt, Mohd Athar, Anita Kongor, Dhaval Patel, Irfan Ahmad. (2022) cancer therapeutic and diagnostic implications, A mini-review. *Biointerface Research in Applied Chemistry*. (**Review Article**).
- 15) Kumar, Rupesh, Kumar, Sharad, and Rao, Bhamidimarri (2022). A Review On Cost Competitiveness Of National Waterway 1 Of India, Manager – *The British Journal Of Administrative Management*, 58 (146), 111-123. (ABDC indexed, Category: C), Edition: January 2022, ISSN: 1746 – 1278. (**Review Article**).
- 16) Mistry, V., Darji, S., Tiwari, P., Sharma A, (2022). Engineering Catharanthus roseus monoterpene indole alkaloid pathway in yeast. *Appl Microbiol Biotechnol*. <https://doi.org/10.1007/s00253-022-11883-5>. (Accepted). IF: 4.81. **Review Article**.
- 17) Dhara Patel, Dhruv Mamtara, Anushree Kamath and Arpit Shukla. (2022). *Rogue One: A Plastic Story*". *Marine Pollution Bulletin* (IF: 5.5). (**Review Article**)
- 18) Dalal V., Biswal A., Patel D., Subramanyam R., Raghavendra A. (2022). In vitro stability of various enzymes by proline from H₂O₂ mediated oxidative damage. *Indian Journal of Biochemistry & Biophysics*, 59; 111-125. (**Research Article**)

- 19) Ray P, Sharma S, Rawal R. (2022). Role of AI in Mortality Prediction of Intensive Care Unit Patients. **(Book Chapter)**. Wiley (In Press) (Book Name: Modelling and Optimization of Signals using Machine Learning Techniques).
- 20) Shaikh A, Mishra Poonam, Talati I. (2022). Seller's replenishment decision for material following quadratic demand with different payment structures, Materials Today: Proceedings; <https://doi.org/10.1016/j.matpr.2021.12.547>. **(Research Article)**

5. Patents

5.1 Patents Filed: The following patents were submitted during the year 2021-22

Sr. No.	Author's Name	Title	Application No.	Year
1)	Oza Ankit et al.	The aminoquinoline calix[4]arene derivative having the selectivity for Lithium or Phosphate ion	202221007 206	2022
2)	Oza Ankit et al.	lot Based Self Sustainable Optimised Flushing Mechanism For Micromachining System (South African Patent)	2022/04849	2022
3)	Oza Ankit et al.	IOT based vaccine box for COVID 19	345888-001	2022
4)	Oza Ankit et al.	IOT based agricultural security drone	345915-001	2022
5)	Oza Ankit et al.	IOT based intelligent hydroponic plant box,	345955-001	2022
6)	Oza Ankit et al.	Low cost ambu bag ventilator for COVID 19"	347318-001	2022
7)	Oza Ankit et al.	A novel solar assisted neonatal caddy"	355118- 001; CBR Number- 211011	2022
8)	Oza Ankit et al.	An AI based model to determine the water quality index and automatic detection of garbage floating in river (African Patent)	2022/00582	2022

9)	Oza Ankit et al.	Indian Industrial Design Patent "IOT based organic compost machine" under IP Design, Intellectual Property Right, Govt of India.	345652-001	2021
10)	Oza Ankit et al.	IOT based vaccine box for COVID 19	345888-001	2021
11)	Oza Ankit et al.	IOT based agricultural security drone	345915-001	2021
12)	Oza Ankit et al.	IOT based intelligent hydroponic plant box	345955-001	2021
13)	Oza Ankit et al.	IOT based oxygen concentrator" under IP Design, Intellectual Property Right, Govt of India (Accepted)	347198-001	2021
14)	Oza Ankit et al.	low cost ambu bag ventilator for COVID 19" under IP Design, Intellectual Property Right, Govt of India	347318-001	2021
15)	Oza Ankit et al.	A novel solar assisted neonatal caddy" under IP Design, Intellectual Property Right, Govt of India	355118-001; CBR Number-211011	2021

5. 2 Patents Granted

Sr. No.	Author's Name	Title of Patent filed	Patent No.	Grant Year	Department
1)	Dr. Ankit Oza et al.	An assembly of abrasive jet machining (South African Patent)	Application No: 2022/02026	2022 (28/4/2022)	DCSE
2)	Dr. Ankit Oza et al.	An Albased model to determine the water quality index and automatic detection of garbage floating in river (South African Patent)	Application No. 2022/00582	2022 (28/4/2022)	DCSE
3)	Dr. Ankit Oza et al.	IoT Based Oxygen Concentrator For Covid Management	Application no. 347198-001	2022	DCSE
4)	Pandya Alok, Prajapati Anjani	Immuno-kit for the early detection of heart fatty acid-binding protein (h-FABP) on myocardial infraction	PTIN/0020444	2021	DBBE

6. Copyright Submission

Sr. No.	Faculty	Copyright detail	Diary No	Date of submission
1	Oza Ankit	IOT Based Mobile Operated Solar Ball Mil" under IP Design, Intellectual Property Right, Govt of India.	26451/2021-CO/L	01/11/2021

7. Ph.D. Students

Department of Biotechnology & Bioengineering			
Sr. No.	Nam of Ph.D. Scholar	Reg. No.	Supervisor
1	Ms. Bhatt Vidhiben Dhavalkumar	UIAR/11080	Dr. Anand K. Tiwari
2	Ms. Pooja Prashant Doshi	UIAR/11106	Dr. Dhaval Patel
3	Ms. Bhatt Manasi Ashokbhai	UIAR/10811	Dr. Budhi Sagar Tiwari
4	Ms. Rohi Tusharkumar Bhatt	UAIR/11073	Dr. Budhi Sagar Tiwari
5	Ms. Shah Dhruvi Urmilbhai	UIAR/10812	Dr. Reena Rajput
6	Mr. Naveen C R	UAIR/10839	Dr. Reena Rajput
7	Mr. Parameswar Dalai	UIAR/11356	Dr. Reena Rajput
8	Mr. Shivani Yadav	UIAR/11368	Dr. Reena Rajput
9	Ms. Hima Vatsal Vora	IAR/11590	Dr. Reena Rajput
10	Mr. Sachinkumar Amrutlal Vaidh	IAR/11591	Dr. Gajendra Singh
11	Ms. Anushree Ashok Kamath	IAR/11603	Dr. Dhara Patel
12	Mr. Bhargav Prakashchandra Pandya	IAR/11605	Dr. Dhaval Patel
13	Mr. Rajkishansinh Raghuvirsinh Thakor	IAR/11581	Dr. Dhaval Patel
14	Ms. Pandya Kavya Ajit	IAR/11999	Dr. Neeru Singh
15	Ms. Dharni Mukesh kumar Parekh	IAR/12000	Dr. Gajendra Singh

16	Ms. Sagarika Saha	IAR/11988	Dr. Anand K. Tiwari, Dr. Laxmidhar Das (Co-supervisor)
17	Ms. Purvaben Gohil	22853	Dr. Narendra Kumar
18	Mr. Sachin Kumar Verma	21858	Dr. Narendra Kumar
19	Ms. Meghna Goswami	20907	Dr. Budhi Sagar Tiwari
20	Ms. Surbhi Dineshbhai Mistry	20867	Dr. Dhaval Patel, Dr. Alok Pandya (Co-supervisor)
21	Ms. Vani Rajnish Patel	19562	Dr. Neeru Singh, Dr. Reena Rajput (Co-supervisor)
22	Ms. Raval Mahima Shaileshkumar	18921	Dr. Anand K. Tiwari, Dr. Laxmidhar Das (Co-supervisor)
23	Ms. Chandani Halpani	UIAR/11382	Dr. Satyendra Mishra
24	Ms. Sejal Patel	UIAR/11807	Dr. Satyendra Mishra
25	Mr. Dipakkumar Amrutbhai Bariya	IAR/11571	Dr. Satyendra Mishra
26	Mr. Yash Bhagawatprasad Barot	IAR/11572	Dr. Roli Mishra
27	Ms. Shubhangi Rajendrarao Deshmukh	IAR/11601	Prof. Rao Bhamidimarri
28	Ms. Nidhi Vijay Verma	IAR/11606	Dr. Alok Pandya
29	Ms. Rani Vinod Gupta	IAR/11653	Dr. Ganesh Bajad
30	Mr. Saurabh Vyas	UIAR/12062	Dr. Roli Mishra
31	Ms. Rathod Nehaben Vinubhai	23347	Dr. Satyendra Mishra
32	Mr. Maiya Dhruveshkumar	23341	Dr. Niranjana Patra

Department of Business & Management

Sr. No.	Nam of PhD Scholar	Reg. No.	Supervisor
1	Mr. Mithileshkumar Hiteswar Singh	IAR/11588	Prof. Rao Bhamidimarri
2	Mr. Priteshkumar Satishbhai Patil	IAR/11589	Dr. Sharad Kumar
3	Mr. Rupesh Maheshprasad Kumar	IAR/11602	Prof. Rao Bhamidimarri,

			Prof. Simon P Philbin (Co-Supervisor)
4	Mr. Aarsheykumar Pankajkumar Shah	IAR/11604	Prof. Rao Bhamidimarri
5	Mrs. Madhubanti Joydutta Dutta	IAR/11617	Prof. Rao Bhamidimarri Prof. Simon P Philbin Co-Supervisor)
6	Mr. Kalpesh Vithlani	IAR/12001	Dr. Sharad Kumar
7	Mr. Jay Pandya	IAR/11970	Prof. Rao Bhamidimarri
8	Mr. Amit Rupela	IAR/11971	Dr. Radha Tiwari
9	Mr. Dipakkumar Shankarlal Panchal	23183	Dr. Sharad Kumar, Dr. Meena Sharma (Co-supervisor)
10	Ms. Nanda Rita Vijaykumar	22674	Dr. Radha Tiwari
11	Mr. Kshitij Kishorchandra Trivedi	21203	Dr. Radha Tiwari
Department of Computer Sciences & Engineering			
	Nam of Ph.D. Scholar	Reg. No.	Supervisor
1	Mr. Verma Chetan	UIAR/10817	Dr. Sachin Sharma
2	Ms. Patel Nidhi Miteshbhai	UIAR/11381	Prof. Ganesh Prasad
3	Mr. Azriel Anthony Henry	IAR/11593	Prof. Samrat Khanna
4	Mrs. Divya Dileep	IAR/11599	Prof. Suresh Doravari & Dr. Sudhir Bhatt (Co-Supervisor)
5	Ms. Sushmita Anilkumar Mishra	IAR/11573	Prof. Ganesh Prasad
6	Mr. Mukesh Choubisa	UIAR/17190	Prof. Samrat Khanna
7	Ms. Nidhi Dubey	UIAR/11981	Dr. Sachin Sharma
8	Ms. Ketaki Anandkumar Pattani	UIAR/16283	Dr. Sachin Sharma, Dr. Sunil Gautam (Co-supervisor)
9	Mr. Prabhudutta Ray	UIAR/11973	Dr. Sachin Sharma

10	Ms. Shivani Saxena	19189	Dr. Ahsan Rizvi, Dr. Keyur Patel (Co-supervisor)
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8. PhD Completions

Sr. No.	Name of Student	Registration No.	Supervisor	Title of Thesis
1)	Mr. Vipin Tomar	UIAR/11078	Prof. Budhi Sagar Tiwari	Identification of novel SNPs (allele) associated with resistance to spot blotch in Wheat (<i>T. aestivum</i> L)
Placement: Post-doc at Aarhus University, Denmark				
2)	Ms. Kushwaha Manisha	UIAR/10813	Dr. Radha Tiwari	Public Expenditure on Education: A Macroeconomics Analysis of Fund Allocation and Policy Implementation in Gujarat
Placement: Research Associate at Gujarat Maritime Board Government of Gujarat				
3)	Mr. Thakkar Himanshu Dahyabhai	UIAR/10814	Dr. Radha Tiwari	An Empirical Assessment on the role of Federation of Industries and Associations in the sustainable development of Micro Small and Medium Enterprises in Gujarat
Placement: Assistant Professor at Raksha Shakti University, Gujarat				
4)	Mr. Snehkrishn Aniruddha Chaubey	UIAR/10809	Dr. Roli Mishra	Design, synthesis and application of amino acid based ionic liquids in organic synthesis
Placement: Mac Chem India Pvt Ltd., Executive Group leader in R&D API, Boisar, Maharashtra				

9. Thesis submission

Sr. No.	Name of Student	Registration No.	Department	Supervisor	Title of Thesis
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1)	Ms. Bhatt Vidhiben Dhavalkumar	UIAR/11080	DBBE	Prof. Anand K. Tiwari	Study of the role of <i>Sirtuin 1 (dsir2)</i> gene in Alzheimer's disease model of <i>Drosophila melanogaster</i>
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10. List of Students received financial Assistance from Government Funding Agency

Sr. No.	Name of Student	Supervisor	Fellowship (JRF/SRF)	Funding Agency
1)	Ms. Hima Vatsal Vora (IAR/11590)	Dr. Reena Rajput	Senior Research Fellowship (SRF)	ICMR, New Delhi
2)	Mr. Parameswar Dalai (UIAR/11356)	Dr. Reena Rajput	Senior Research Fellowship (SRF)	ICMR, New Delhi
3)	Ms. Nidhi Vijay Verma (IAR/11606)	Dr. Alok Pandya	Senior Research Fellowship (SRF)	ICMR, New Delhi

11. Applications for SHODH Fellowship (2022)

Sr. No.	Name of Ph.D. students	Reg. No.	Ph.D. Supervisor	Department
1)	Yash Bhagawatprasad Barot	IAR/11572	Dr. Roli Mishra	DBBE
2)	Saha Sagarika	IAR/11988	Prof. Anand K. Tiwari	DBBE
3)	Mahima Shaileshkumar Raval	IAR/12485	Prof. Anand K. Tiwari	DBBE
4)	Meghna Goswami	IAR/12482	Prof. Budhi Sagar Tiwari	DBBE
5)	Maiya Dhruveshkumar	IAR/12475	Dr. Niranjana Patra	DBBE
6)	Rathod Nehaben Vinubhai	IAR/12474	Dr. Satyendra Mishra	DBBE

12. Newly Accredited Ph.D. Supervisor

The following faculties have been recognized as a Ph.D. supervisor during 2022

Sr. No.	Name of Faculty	Designation	Department
1)	Prof. Samrat Khanna	Professor	Computer Sciences & Engineering
2)	Dr. Isha Talati	Assistant Professor	Computer Sciences & Engineering
3)	Dr. Tvarit Patel	Assistant Professor	Computer Sciences & Engineering
4)	Dr. Mangilal Choudhary	Assistant Professor	Computer Sciences & Engineering
5)	Dr. Laxmidhar Das	Assistant Professor	Biotechnology & Bioengineering
6)	Dr. Utpal Bakshi	Assistant Professor	Biotechnology & Bioengineering

13. Impact Lecture Series

IAR, Gandhinagar have been selected for **Impact Lecture Series 2022-23** by **IIC, MHRD Govt of India**. IAR Gandhinagar organizes 2 impact sessions (2 lecture each session).



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Assessment & Accreditation

Institute of Advanced Research, Gandhinagar, Gujarat
In collaboration with Minister of Education's Innovation Cell, AICTE, New Delhi
Organizes

21st
JUNE
2022

Impact Lecture Series-2022, Session 1

Talk 01 :
Climate Change As A Trigger Of Evolution Of Life

Register on : <https://tinyurl.com/IARForm15>
Zoom Link : <https://tinyurl.com/ImpactLect>
Meeting ID : 834 3703 5716

Speaker
Prof. Baishnab Charan Tripathy
FNA, FNAsc, FNAAS J C Bose National Fellow Formerly Dean,
School of Life Sciences Jawaharlal Nehru University,
New Delhi 110067, India



TIME 11:00 AM

Talk 02 :
Frequency Modulated Continuous Waves (FMCW) – A New Paradigm For Radar-sensors

Register on : <https://tinyurl.com/IARForm14>
Zoom Link : <https://tinyurl.com/ImpactLect2>
Meeting ID : 886 1076 0955

Speaker
Dr. Chinmoy Bhattacharya
Scientist G (Rtd)
Armament Research and Development
Establishment (ARDE), DRDO, Pune



TIME 2:30 PM

:: Contact Us For More Info ::

Prof. Anand K. Tiwari | **Dr. Ahsan Rizvi**
annadk.tiwari@iar.ac.in | ahsan.rizvi@iar.ac.in

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INSTITUTE OF ADVANCED RESEARCH
The University For Innovation



MoE's
INNOVATION CELL
(GOVERNMENT OF INDIA)



Institute of Advanced Research, Gandhinagar, Gujarat In collaboration
with Minister of Education's Innovation Cell, AICTE, New Delhi

Organizes

Impact Lecture Series-2022, Session 2

DATE 15TH JULY, 2022

Talk 01 :

TIME 11:00 TO 12:30



**Innovation & Entrepreneurship :
Role Of Edupreneurs And Opportunities**

Register on : <https://tinyurl.com/IARForm16>

Zoom Link : <https://tinyurl.com/ImpactLect1507>

Meeting ID : 884 5217 3190



Dr. Neelam Panchal

Head of the Department of Public Policy and
Governance, B.K School, Gujarat University, Ahmedabad



Talk 02 :

TIME 03:00 TO 04:30

Drivers and Dimensions of Innovation

Register on : <https://tinyurl.com/IARForm17>

Zoom Link : <https://tinyurl.com/ImpactLect21507>

Meeting ID : 897 4365 1411



Prof. Raksh Vir Jasra,
FNA, FNAE

Senior Vice President & Head, Reliance Technology Group,
Reliance Industries Ltd. Vadodara, India

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E-certificate will be Provided To registered Participants

14. Celebration of National Sciences Day

IAR celebrated “National Science Day” on 28th February 2022. To celebrate the day and motivate to students and faculties, IAR had organized the following talks on national science day.

Talk 1: *Apoptosis Induced Proliferation in Drosophila.*

Speaker: Dr. Komal Suthar, Department of Molecular, Cell and Cancer Biology, University of Massachusetts Medical School (UMMS), Worcester, USA

Talk 2: *Structural characterization and Therapeutic properties of Cyanobacterial phycobiliproteins.*

Speaker: Prof. Datta Madamwar, Advisor, Charotar University, Gujarat

Talk 3: *Post translational modifications in the regulation of chronic human diseases.*

Speaker: Dr. Kishu Ranjan, Department of Pathology, Yale University School of Medicine, New Haven -06519, CT, USA

INSTITUTE OF ADVANCED RESEARCH
The University For Innovation

Celebration Of
National Science Day

28th FEBRUARY
2022

TIME 10:00 TO 01:00

Apoptosis Induced Proliferation in Drosophila.
TIME 10:15 TO 11:00

Dr. Komal Suthar
University of Massachusetts, USA
IAR Alumni

Structural Characterisation And Therapeutic Properties Of Cyanobacterial Phycobiliproteins
TIME 11:00 TO 11:45

Prof. Datta Madamwar
Advisor to Charotar University Gujarat

Post Translational Modifications In The Regulation Of Chronic Human Diseases
TIME 12:00 TO 12:45

Dr. Kishu Ranjan
Yale University, USA
IAR Alumni

Zoom Link : tinyurl.com/28FebScienceDay | Meeting ID : 895 1741 1954

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15. Seminar/Webinar/Invited Talk/Workshops /FDP attendance: The details are as follows:

15.1 Webinar Series-2021-22

IAR had organized webinar series 2021-22. In the webinar series, faculty at IAR presented webinars on a range of topics. Total 24 webinars were conducted during the webinar series 2021-22.

INSTITUTE OF ADVANCED RESEARCH
The University For Innovation

Webinar on Rogue One : An Insulin Story

DATE: 7th January, 2022 TIME: 4-5 PM

Join on Zoom : tinyurl.com/7JanWebinar
Meeting ID : 833 2549 0941
Register on : tinyurl.com/Register7Jan

079 6180 4300
72777 70758
www.iar.ac.in
arpit.shukla@iar.ac.in

Dr. Arpit Shukla

INSTITUTE OF ADVANCED RESEARCH
The University For Innovation

03rd DECEMBER 2021

TIME: 04:00 PM

Register on : tinyurl.com/Register3Dec
Zoom Link : tinyurl.com/3DecWebinar
Meeting ID : 813 9011 9654

Dr. Budhi Sagar Tiwari

Webinar On Understanding Anhydrobiology : A step forward in Highland Agriculture

For More Details Contact Us On 079 6180 4300 72777 70758
bstiwari@iar.ac.in www.iar.ac.in

INSTITUTE OF ADVANCED RESEARCH
The University For Innovation

Webinar On Indian Economy and Inflation: A Pragmatic Scenario as Money Illusion

25th FEBRUARY 2022

TIME: 04:00 PM

Register on : tinyurl.com/Register25Feb
Zoom Link : tinyurl.com/25FebWebinar
Meeting ID : 868 8927 3855

079 6180 4300 72777 70758 radha.tiwari@iar.ac.in www.iar.ac.in

Dr. Radha Tiwari

INSTITUTE OF ADVANCED RESEARCH
The University For Innovation

Webinar On Research Funding Opportunities From Government / Non - Government Agencies

Speaker : - **Prof. Ganesh Prasad**
Department Of Engineering And Physical Sciences

Date : 8th OCTOBER, 2021
Time : 04.00 PM

For More Details Contact Us On 7277 7707 57 / 58
admissions@iar.ac.in
www.iar.ac.in

REGISTER NOW

Google Meet Link : <https://bit.ly/3IdWTFy>

INSTITUTE OF ADVANCED RESEARCH
The University For Innovation

Webinar On Challenges Faced By Early Stage Entrepreneurs in India

21st January 2022

TIME: 04:00 PM

Dr. Sharad Kumar

For More Details Contact Us On 079 6180 4300 72777 70758
sharad.kumar@iar.ac.in
www.iar.ac.in

Register on : tinyurl.com/Register21stJan
Zoom Link : tinyurl.com/21stJanWebinar

INSTITUTE OF ADVANCED RESEARCH
The University for Innovation

Webinar On " Gammaherpesvirus Mediated Regulation Of Host Signaling Pathways : Implications In Cancer "

13th MAY 2022

TIME: 4 TO 5 P.M.

Register on : tinyurl.com/Register13May
Zoom Link : tinyurl.com/13thMayWebinar
Meeting ID : 852 3954 4978

079 6180 4300 72777 70758 www.iar.ac.in

Dr. Shuvomoy Banerjee

INSTITUTE OF ADVANCED RESEARCH
The University For Innovation

10th DECEMBER 2021

TIME: 4-5 PM

Webinar On Intrusion Detection in RFID System Using Computational Intelligence Approach For Underground Mines

Register on : tinyurl.com/Register10Dec
Zoom Link : tinyurl.com/10DecWebinar
Meeting ID : 883 9052 7403

Speaker : **Dr. Sunil Gautam**

For More Details Contact Us On 079 6180 4300 72777 70758
sunil.gautam@iar.ac.in www.iar.ac.in

INSTITUTE OF ADVANCED RESEARCH
The University For Innovation

Webinar On " Ionic Liquids : Recent Advances And Future Prospects In The Pharmaceutical Industry "

11th February 2022

TIME: 04:00 PM

Register on : tinyurl.com/Register11Feb
Zoom Link : tinyurl.com/11FebWebinar
Meeting ID : 849 4332 2299

079 6180 4300 72777 70758
roli.mishra@iar.ac.in www.iar.ac.in

Dr. Roli Mishra

INSTITUTE OF ADVANCED RESEARCH
The University For Innovation

Webinar On Genome Signal Processing

26th NOVEMBER 2021

TIME: 04:00 PM

Register on : tinyurl.com/Register26thNov
Zoom Link : tinyurl.com/26NovWebinar
Meeting ID : 836 3109 3412

079 6180 4300 72777 70758
ahsan.rizvi@iar.ac.in www.iar.ac.in

Dr. Ahsan Rizvi

INSTITUTE OF ADVANCED RESEARCH
The University For Innovation

Webinar on
Wave function of the Universe:
Quantum Cosmology

04TH FEBRUARY
2022

TIME: 04:00 PM



Dr. Sachin Pandey

Register on : tinyurl.com/Register4Feb
Zoom Link : tinyurl.com/4FebWebinar
Meeting ID : 891 4565 3443

☎ 079 6180 4300 ☎ 72777 70758
✉ sachin.pandey@iar.ac.in



INSTITUTE OF ADVANCED RESEARCH
The University For Innovation

Webinar On
Therapeutic Applications of
Curcumin and its Derivatives

Speaker : -
Dr. Satyendra Mishra

DATE : 29th OCTOBER, 2021
TIME : 04.00 PM

For More Details Contact Us On
☎ 079 6180 4300, 72777 70758
✉ satyendra.mishra@iar.ac.in
🌐 www.iar.ac.in

REGISTER NOW

Form Link : <https://tinyurl.com/Register29thOct>
Zoom Link : <https://tinyurl.com/Webinar29thOct>




INSTITUTE OF ADVANCED RESEARCH
The University For Innovation

18TH FEBRUARY
2022

Webinar On
Fuel Oil, Carbon
Nanotubes And
Hydrogen From Waste
Plastic Pyrolysis

TIME: 04:00 PM



Dr. Ganesh S. Bajad

Register on : tinyurl.com/Register18Feb
Zoom Link : tinyurl.com/18FebWebinar
Meeting ID : 846 5560 1509

☎ 079 6180 4300 ☎ 72777 70758 ✉ ganesh.bajad@iar.ac.in 🌐 www.iar.ac.in



INSTITUTE OF ADVANCED RESEARCH
The University For Innovation

Webinar On
Research Funding: How To Attract
The Research Grant: Keys For
Writing A Good Proposal

Register : tinyurl.com/Register12Nov
Zoom Link : tinyurl.com/12NovWebinar
Meeting ID : 822 0276 7318



Dr Reena Rajput

DATE: 12th NOVEMBER
TIME: 4-5 PM



7277 7707 57 / 58 ✉ reena.rajput@iar.ac.in 🌐 www.iar.ac.in



15.2 Invited Talks: Details are as follows:

- i. **Tiwari AK (2022).** Mitochondrial dysfunction and Alzheimer's disease: Role of Miro protein. International Conference on Neurology, CNS and Dementia Care organized by Pulses Group, USA ON 27th April 2022.
- ii. **Tiwari AK (2022).** Mitochondrial dysfunction and Alzheimer's disease: Role of Miro protein in UGC Networking Resource Centre training course organized University Institute of Pharmeceuticals Sciences (UIPS), Panjab University, Chandigarh during 14th-19th February 2022.
- iii. **Sharma S, Zanje S, Shah D (2022).** Early Identification of Diabetic Retinopathy Using Deep Learning Techniques in 7th International Conference on Information System Design and Intelligent Applications (INDIA - 2022) organized by BVRIT-H

College of Engineering for Women, Hyderabad, Telangana, India with Springer LNNS Series (Scopus Indexed) as publication partner on 26th February 2022.

- iv. **Tiwari BS (2021)**. Nobel Prize 2021 in Physiology & Medicine, organized by GUJCOST, Gandhinagar, Gujarat on 10th December 2021 on Special Outreach Program on Nobel Prize.

NOBEL PRIZE 2021
 Special Outreach program on
Nobel Prize 2021
 10th December, 2021 | 11:00 am to 2:00 pm | Science City | Hybrid
 on the occasion of
Nobel Prize Investiture Ceremony @Stockholm on

INVITED SPEAKERS

 Dr. Budhi Sagar Tiwari Institute of Advanced Research (IAR)	 Dr. Vimal Mishra Indian Institute of Technology (IIT)	 Dr. Hemant Prajapati, Indian Institute of Teacher Education (IITE)
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Live streaming of Nobel Prize Investiture ceremony program on
GUJCOST YouTube Channel (20:00 hrs to 22:00 hrs - IST)
 YouTube link : <https://youtu.be/pKf4kLesbA>
 Registration link : <https://forms.gle/3C4kppFcwAUcXizW9>

GUJARAT COUNCIL ON SCIENCE & TECHNOLOGY Dept of Science & Technology, Govt of Gujarat Block B, 7th Floor, M S Building, Gandhinagar 382011 Phone : (079) 23259362-65, Fax : (079) 23259362	GUJARAT COUNCIL OF SCIENCE CITY Dept of Science & Technology, Govt of Gujarat Science City Rd, Ahmedabad - 380 060 Phone : (079) 29703122 Fax : +91 7929703121
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- v. **Mishra Roli (2021)**. Ionic Liquids: A Smart Platform for Organic Reactions in a program on "Recent Advances of Chemical Sciences" organized by the 27th International Conference of International Academy of Physical Sciences (CONIAPS XXVII) jointly organized by SPS JNU and Dept. of Chemistry BHU during October 26-28, 2021.
- vi. Vyomesh R. Buch and **Oza A D (2021)**. Machining Parameter Comparison on hss cutting tool coated with multi-walled carbon nano tubes using green coating technique in the "1st International Conference on Additive Manufacturing and Advanced Materials (AM2)" organized by the Pandit Deendayal Energy University (PDEU), Gandhinagar, Gujarat, India during 4-6 October 2021.

- vii. **Rizvi A (2021)**. How to convert B Tech project into a successful startup at AISSMS college (NAAC A+), University of Pune, Pune on 10th Oct 2021 on the occasion of: Startup week, AISSMS college, Pune.

15.3 Workshop Organized

- a) **“Two days national workshop on Molecular Biology Techniques”** on 27th -28th May 2022.

Coordinator: Dr. Abhisek Sharma, DBBE

- b) IAR received financial support of Rs.80000/- from **GSBTM, Gujarat** to conduct National workshop on **“Animal Cell Culture techniques and apoptosis detection assays”**.

Coordinator: Dr. Shuvomoy Banerjee & Dr. Neeru Singh, DBBE

- c) **“Hands-on workshop on Biosensor Technology”** on June 2nd and 3rd, 2022 in association with **Reckon Diagnostics Ltd.**

Coordinator: Dr. Alok Pandya

- d) Workshop on **“Entrepreneurship and Innovation as a Career Opportunity”** for the UG, PG Students on 3rd January 2022.

Resource Person: Mr. Chiranjivi Patel, MD, PC Snehal Group of companies had delivered the talk.

- e) **"Hands-on Training Program on Molecular Docking and Molecular Dynamics** at GBRC during 17th -21st January 2022.

The workshop was jointly organized by Gujarat Biotechnology Research Centre (GBRC), DST and Institute of Advanced Research (IAR, Gandhinagar) and was sponsored by Gujarat State Biotechnology Mission (GSBTM).

Coordinator from IAR: Dr. Dhaval Patel, DBSB

- f) **"Hands-on Training Program on Molecular Docking and Molecular Dynamics** at GBRC during 13th -17th September 2021.

The workshop was jointly organized by Gujarat Biotechnology Research Centre (GBRC), DST and Institute of Advanced Research (IAR, Gandhinagar) and was sponsored by Gujarat State Biotechnology Mission (GSBTM).

Coordinator from IAR: Dr. Dhaval Patel, DBSB

15.4 FDP Participation

- i. Dr. Rajesh Honda, Assistant Professor, DBM had attended One Week FDP on "Academic Administration" organized by Teaching Learning Centre Ramanujan College, University of Delhi during 7th – 13th May 2022.
- ii. Dr. Ankit Oza, Assistant Professor, DCSE attended a 7 days *online faculty development program* on “*Digital Pedagogy for 21st Century Teachers*”, organized by School of commerce and Management, G H Rasoni University, Saikheda, M.P., India, during 1st – 8th March 2022.
- iii. Dr. Ankit Oza, Assistant Professor, DCSE attended 6 days online faculty development program on “Modern Trends in Manufacturing and Thermal Science (MTMTS-2022)”, organized by the Department of Mechanical Engineering, National Institute of Technology Delhi (NIT-Delhi), India. From 5th – 10th April 2022.
- iv. Dr. Abhay Dinker, Assistant Professor, DBBE attend a FDP on Smart Use of Renewable Energy Resources for Sustainable Future organized by Swami Keshvanand Institute of Technology, Management and Gramothan, Jaipur Rajasthan during 21st -25th February 2022.

15.5 Industry Expert Talks

INSTITUTE OF ADVANCED RESEARCH
The University For Innovation

Industry Expert Talk Organised By
Department Of Biotechnology And Bioengineering
Biotherapeutics From Bench To Bedside

Dr. Shailendra Gaur
PhD (Biotechnology), The M.S. University of Baroda
Deputy General Manager With Mylan Pharmaceuticals, Hyderabad

DATE 25th FEB, 2022 TIME 01:00 TO 02:00

Zoom Link : tinyurl.com/25FebTalk | Meeting ID : 846 9549 7546

079 6180 4300 72777 70758 www.iar.ac.in

16. Memoranduma of Understanding

IAR had signed the following Memorandum of Understanding:

- 1) **MoU with Atal Incubation Center**, Gujarat Technological University, Ahmedabad for support in viable enterprise/Startup with a specific focus on Healthcare, Medical Devices and Biotechnology and allied areas.
- 2) **MoU with TRUSHANA EXIM Surat**. IAR signed MoU with TRUSHANA EXIM Surat for production of microwave plasma production using 2.45 GHz source and 915MHz source. In this Rs. 35 lakhs have been released as a first installment.
- 3) **MoU with Government Arts College, Jhagadia, Bharuch**. IAR signed a MoU with Government Arts College, Jhagadia, Bharuch on 5th January 2022.
- 4) **MoU with Sankalchand Patel University, Visnagar, Gujarat**. IAR signed a MoU with Sankalchand Patel University, Gujarat on 9th February 2022 for collaborative academic and research activities.



Image: MoU with Sankalchand Patel University on 9th February 2022

17. IAR Excellence Award

Best Research & Innovation Award



Dr. Dhaval Patel
 Dept of Biotechnology & Bioengineering

Best Teacher Award

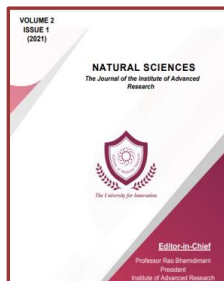


Dr. Roli Mishra
 Dept of Engineering & Physical Sciences

18. Natural Sciences, Volume 2 (2021)

IAR had started a multi-disciplinary research journal “Natural Sciences”. It covers basic, translational, and multidisciplinary research of science, engineering and humanities to promote knowledge, communication and research.

The Volume 2 of Natural Sciences was released in the year 2021.



19. START-UPS

Sr. No.	start-ups	Founder/Co-founder name
1.	SVA Robotics	<ul style="list-style-type: none"> • Ravindrasinh Rahewar • Zaid Kesarani
2.	BENPD Ecolabs	<ul style="list-style-type: none"> • Dhruv Mamtora
3.	BioPot	<ul style="list-style-type: none"> • Nidhi Jha • Rani Chauhan • Hardik Patni • Sagar Patel
4.	Invision Aid	<ul style="list-style-type: none"> • Arth Pandya • Medha Vyas • Parth Pambhar • Dhruvi Desai • Parth Virani
5.	KReSys (Kalam Rescue Systems)	<ul style="list-style-type: none"> • Yash Shah • Himanshu Bhavsar • Viraj Patel • Rushi Oza



Image: BioPot Start-UP

20. Support to Faculties to attend the Faculty Development Program (FDP)

IAR/2021-FDP/101

18/03/2021

FACULTY DEVELOPEMNTPROGRAM (FDP)

The following faculties name has been approved for financial support to attend the “**Five Days Online Training Programme on Research Methodology and Ethics: Plagiarism Issues, Reference Management Tools and Altmetrics**” to be organized by INFLIBNET Centre, Gandhinagar, Gujarat during **05th-09th April 2021**. After successful completion, participating faculties will train other faculties in respective department.

Department	Faculty Name
Biological Sciences & Biotechnology	Dr. Neeru Singh
	Dr. Gajendra Singh
Engineering and Physical Sciences	Chemistry Dr. Roli Mishra
	Physics Dr. Divya Dileep
	Chemical Engineering Dr. Ganesh Bajad
	Computer Engineering Dr. Sachin Sharma
Business & Management	Dr. Sharad Kumar
	Dr. Ujjwal Das

Ps: Above mentioned faculties are requested to get registered for the program and after the submission of documentary proof (Certificate/Registration invoice), University will reimburse the registration fee.

(President IAR)

21. Annual Research & Innovation Conclave (ARIC-21)

To promote a vibrant multidisciplinary research and innovation at IAR and to inform the university community of the diversity of on-going research and innovation programs, Annual Research & Innovation Conclave was organised.

- The Conclave was conducted on 29th -30th November 2021 in offline mode.
- The conference was inaugurated with an expert talk by **Prof. Ashok Pandey**, a distinguished Scientist, CSIR-IITR Lucknow.
- During the (ARIC-21) conclave there were 28 oral presentations (12 by faculties at IAR, 12 by Ph.D. students, 3 UG students, 1 PG students).
- In the poster sessions there were 55 posters (from Faculties, Ph.D. students, UG and PG students).
- Awards were presented to the best oral and poster presentations.



22. Earth Day Celebration

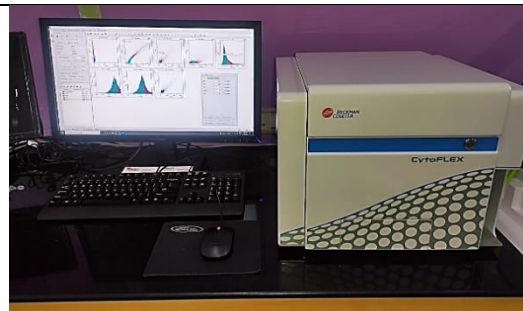
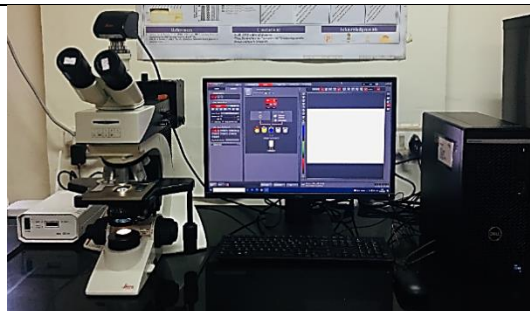


23. Major Research Facilities

Laser Scanning Confocal Microscope Facility (DBT-Supported)



Param Shavak Supercomputer facility (Supported by the Gujarat Council of Science and Technology (GUJCOST), Gujarat)



<p>Fluorescence Microscope Facility (Supported by DST-FIST)</p>	<p>Flow-cytometer Facility (Supported by DST-FIST)</p>
	
<p>Central Autoclave</p>	<p>Ultracentrifuge</p>
	
<p>HPLC</p>	<p>UV-Visible Spectrophotometer</p>
	
<p>Three-Phase Transformer</p>	



AC Training Kit



Vertical Machine Centre (VMC)








CNC Lathe




Computer Lab

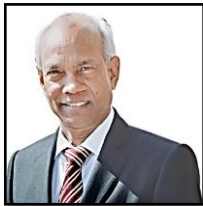

24. University Research Committees

24.1 Research Advisory Committee (RAC)

Chairperson:			
1	Dr. Raksh Vir Jasra	Sr. Vice President, (R&D), Reliance Industries Ltd., Vadodara Manufacturing Centre, Vadodara 391346, Gujarat Email: rakshvir.jasra@ril.com	
Members:			
2	Prof. Suman Kumar Dhar	Special Centre for Molecular Medicine Molecular Medicine, JNU Delhi Email: skdhar@mail.jnu.ac.in	
3	Prof. Tapan Choudhary	Kusuma School of Biological Sciences, Indian Institute of Technology, Delhi, Hauz Khas, New Delhi- 110016 Email: tkchaudhuri@bioschool.iitd.ac.in	
4	Prof. Rajiv Gupta	Department of Chemistry, University of Delhi, North Campus, Mall Road, Delhi -110 007 Email: rgupta@chemistry.du.ac.in	
5	Prof. Surjit Mukherjee	Department of Physics, MS University Baroda Email: sk.mukherjee-phy@msubaroda.ac.in	

6	Prof. Pramod Damodar Paliwal	School of Petroleum Management, Pandit Deendayal Petroleum University, Raysan Gandhinagar-382007 Email: Pramod.Paliwal@spm.pdpu.ac.in	
7	Prof. Bhamidimari Rao	President, Institute of Advanced Research, Gandhinagar Email: president@iar.ac.in	
8	Dr. Anand K. Tiwari	Department of Biological Sciences & Biotechnology, Institute of Advanced Research, Gandhinagar Email: anandk.tiwari@iar.ac.in	


24.2 University Research & Innovation Committee

Chairperson:			
1	Prof. Bhamidimari Rao	President, Institute of Advanced Research, Gandhinagar Email: president@iar.ac.in	
Members:			
2	Dr. Manish Sharma (Dean Academic)	Institute of Advanced Research, Gandhinagar Email: dean.academic@iar.ac.in	

3	Prof. Anand K. Tiwari (Dean R & I and Member Secretary)	Institute of Advanced Research, Gandhinagar Email: dean.research@iar.ac.in	
4	Dr. Narendra Kumar	HoD, Biotechnology & Bioengineering, Institute of Advanced Research, Gandhinagar Email: head.dbsb@iar.ac.in	
5	Dr. Ahsan Rizvi	HoD, Computer Sciences & Engineering, Institute of Advanced Research, Gandhinagar Email: head.deps@iar.ac.in	
6	Prof. Meena Sharma	HoD, Business & Management, Institute of Advanced Research, Gandhinagar Email: head.dbm@iar.ac.in	
8	Dr. Niranjan Patra	Faculty Representative, DBBE, IAR, Gandhinagar Email: niranjan.patra@iar.ac.in	
9	Dr. Neeru Singh	Faculty Representative, DBBE, IAR, Gandhinagar Email: neeru.singh@iar.ac.in	

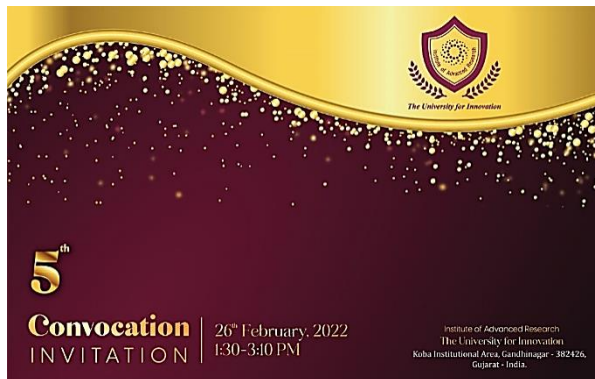
25. Institution Innovation Council (IIC) Cell

The IIC Cell at IAR constitute the following members

 Institute of Advanced Research <i>The University for Innovation</i>		 INSTITUTION'S INNOVATION COUNCIL <small>(Ministry of HRD Initiative)</small>
Sr. No.	Name & Affiliation	Designation
1)	Dr. Anand K. Tiwari, Associate Professor, Department of Biological Sciences & Biotechnology	President IIC & Chairperson
2)	Dr. Dhaval Patel, Assistant Professor Department of Biological Sciences & Biotechnology	Member
3)	Dr. Abhay Dinker, Assistant Professor, Department of Engineering & Physical Sciences	Member
4)	Mr. Niraj Shah, Arihant Satiare	External Expert
5)	Dr. Vishal Vyas, Department of Engineering & Physical Sciences	Member
6)	Dr. Ujjwal Das, Assistant Professor, Department of Business & Management	Member
7)	Dr. Alok Pandya, Assistant Professor, Department of Engineering & Physical Sciences	Member Secretary
8)	Mr. Dhaval Gokani	Social Media In charge



26. 5th Convocation of IAR: Was conducted on 26th December 2022



27. Research and Development Funding Sources

Institute of Advanced Research gratefully acknowledges the research and development support received by the following agencies and industries:



*Innovation no longer remains a
choice but has become an
imperative-*





Institute of Advanced Research
The University for Innovation

Koba Institutional Area
Gandhinagar
382426
Gujarat, India