



Institute of Advanced Research
The University for Innovation



The University for Innovation

Annual Research & Innovation Report

2020-2021

Index

Item	Page No.
Foreword	1
The University at a Glance	2
Academic Departments	3
Research Overview	4
• Key Research Areas at IAR	4-7
• Submission of New Project Proposals	8-9
Thriving Research Environment	10
• Ongoing Research Grant	10-11
• Funded Projects Completed	12
• Infrastructure Grant	13
• Ph.D. students	14-16
• List of students who successfully defended their theses	16
• Ph.D. Completions	17
• Publications	18-23
• Patents	24
• IAR Seed Grant Awardees	25
• SHODH fellowship from Govt of Gujarat	26
• Newly Accredited Ph.D. Supervisors	27
• Seminars/Webinars and Workshops	28-30
• Start-ups	31
• GSIRF (Gujarat State Institutional Rating Framework)	32
• University Clubs involved in research related activities	32
• Memorandum of Understanding	32
• IAR, Research Journal	33
• Research Advisory Committee (RAC)	34-35
• University Research & Innovation Committee	36-37
Faculty Profiles	38-44
Research & Developmental Funding Sources	45

Foreword

The Institute of Advanced Research has experienced a rapid growth in the research capability during the academic year 2020/21. 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 a few fields of engineering, new state-of-the-art facilities were built. As part of the new academic block, two new research laboratories are being built, and biology and chemistry facilities have been extended.

We continue to attract funding from the DST, DT, SERB, GUJCOST, and GSBTM, as well as private research and development funding from companies like Tata. The amount 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 provide you with this report, which highlights the research excellence of a small but quickly expanding research university.

Professor Rao Bhamidimarri
President



Institute of Advanced Research
The University for Innovation

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.

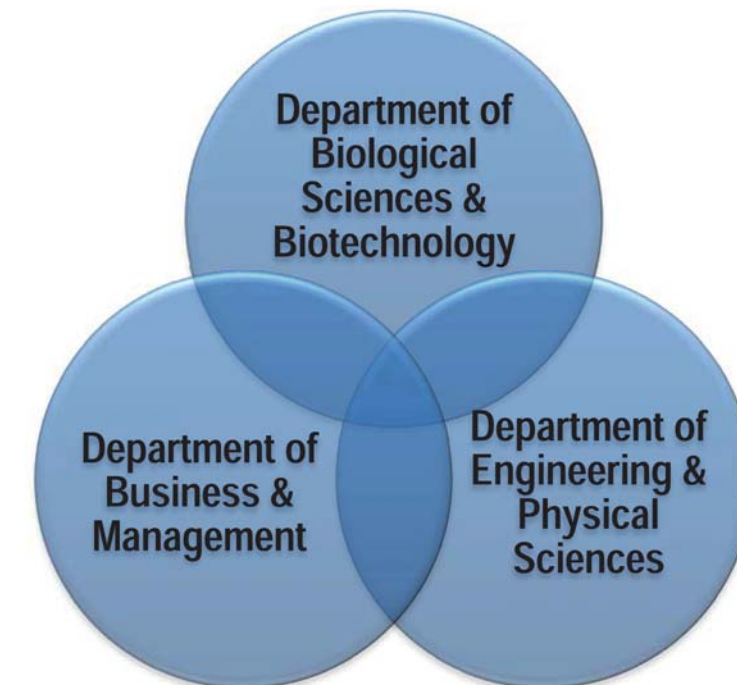
The university is a non-profit organisation and its sole mission is to promote world-class education, research, and innovation for young people in Gujarat and across the country. The campus is located on the banks of the Sabarmati River in Gandhinagar, Gujarat, in a beautiful setting. We have embarked 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.

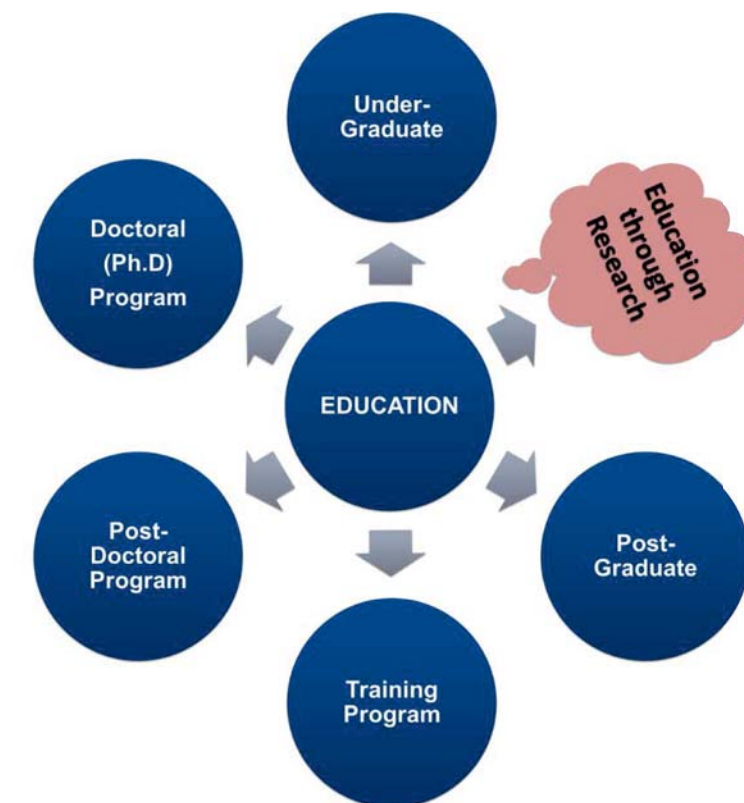
Research and innovation continue to be the university's forte. While our research in biotechnology continues to be recognised on a global scale, our research in a number of other fields is fast advancing. We built a strong research and development team in Plasma. In addition, impact of our research in 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 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



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.

Key research areas at IAR:

1) 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.

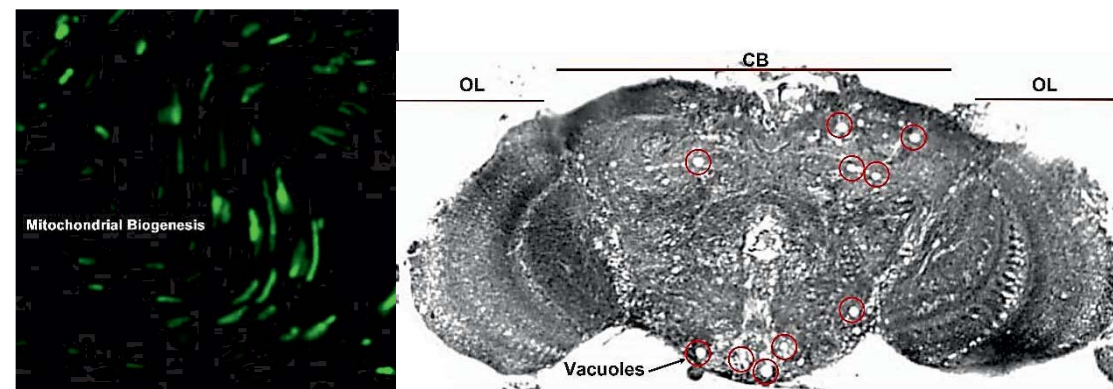
Research Lead: Prof. Ganesh Prasad



2) 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.

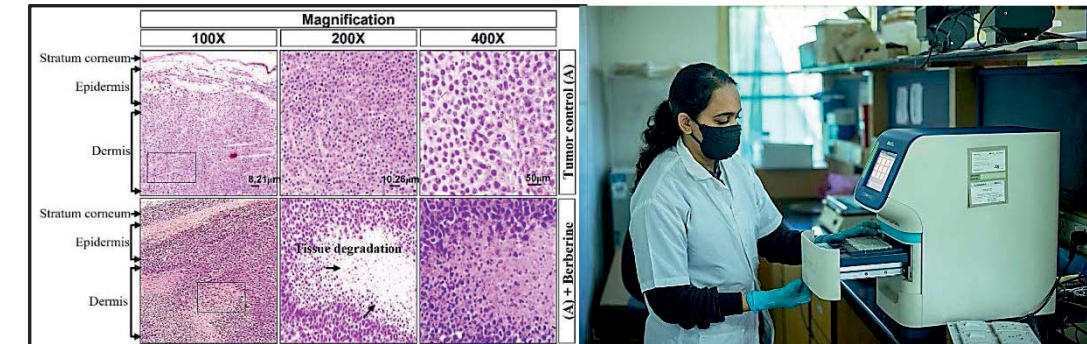
Research Lead: Dr. Anand K. Tiwari and Dr. Reena Rajput



3) Unlocking the secrets of Cancer

It includes cellular signaling pathways of apoptosis, inflammation as well as their cross-talk, and their implications on cancer. A group is trying to explore the mechanisms of signal integration between inflammasome and other immune pathways.

Research Lead: Dr. Reena Rajput and Dr. Neeru Singh



4) Sensor Development

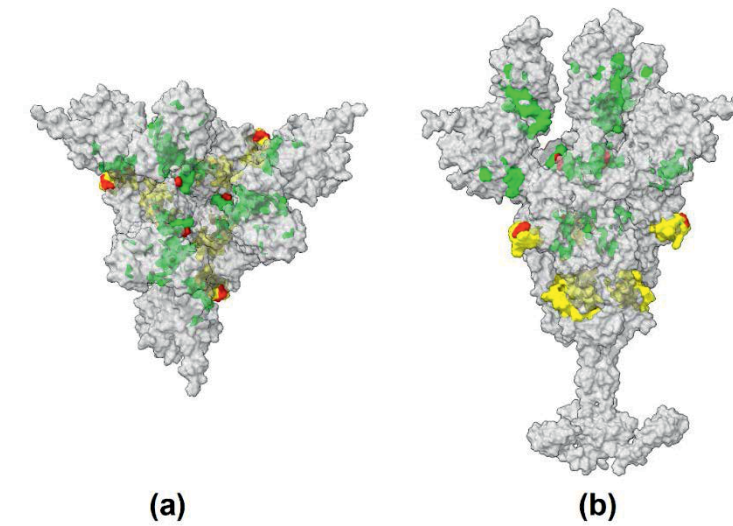
It involves design and development of nano-sensors to sense the risk of cardiovascular disorders and plant pathogens.

Research Lead: Dr. Alok Pandya

5) 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.

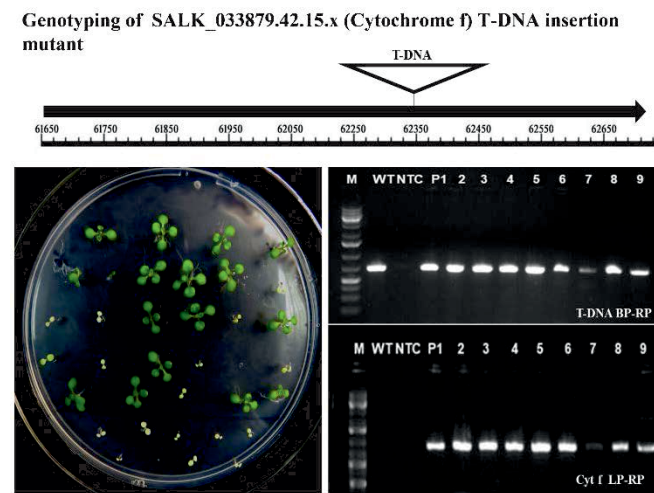
Research Lead: Dr. Dhaval Patel



6) 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 depriming and quantitative genetics for disease resistance and yielding improvement in crops.

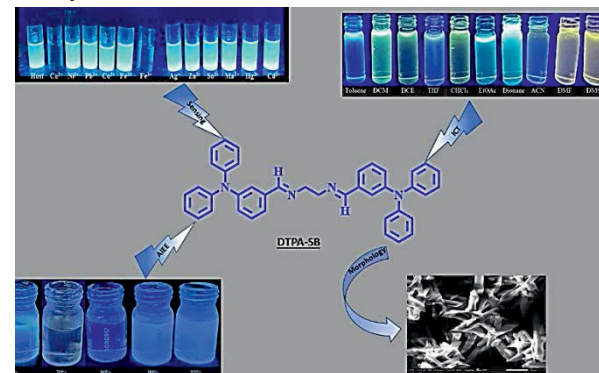
Resource Lead: Dr. Budhi Sagar Tiwari



7) 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



8) Cryptography and Cyber Security

It encompasses intrusion detection, wireless sensor networks, and IoT.

Research Lead: Dr. Sunil Gautam

9) AI and ML

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

Research Lead: Dr. Sachin Sharma

10) 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

11) Nanomaterials

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

Research Lead: Dr. Nirajan Patra

12) 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

13) 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

Submission of New Project Proposals

Sr. No.	Title	Name of PI/Co-PI	Role	Proposed Budget (in Lakh)	Funding Agency and Scheme
Biological Sciences and Biotechnology					
1	Design and validation of miR200 as a novel therapeutic strategy against drug resistant ovarian carcinomas	Dr.Neeru Singh	PI	27.75	SERB, New Delhi, <i>Core Research Grant</i>
2	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>)	Dr.Budhi Sagar Tiwari	PI	45.6	SERB, New Delhi, <i>Core Research Grant</i>
3	Assessing EPS-Thorium complexation by thoriotolerant bacteria	Dr. Arpit Shukla	PI	20.0	SERB, <i>Start-up Research Grant</i>
4	HIV-1 Nef macrophage mediated neurodegeneration with mitochondrial implications: mechanisms and therapeutic approaches	Dr.Reshu Saxena	PI	28.0	Ignite Life Science Foundation- <i>Ignite Fast Grant Award</i>
5	Wealth out of waste: Production of thermostable polyhydroxyalkoanates using agrowaste	Dr.Dhara Patel and Dr. Arpit Shukla	PI Co-PI	25.3	GUJCOST
Engineering and Physical Sciences					
6	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>)	Dr. Satyendra Mishra (PI) and Dr. Reena Rajput (CO-PI)	PI	28.88	SERB, New Delhi <i>Core Research Grant</i>

7	Development and study of shell and tube type thermal storage battery for thermal energy storage from industrial and solar thermal sources	Dr. Abhay Dinker	PI	28.85	SERB, New Delhi, <i>Core Research Grant</i>
8	Development of high-temperature and high-resilience SiOC/SiC-Transition Metal Carbide Ceramic Microcomponents via 3D Printing (Stereolithography)	Dr. Niranjana Patra	PI	28.85	SERB, New Delhi, <i>Core Research Grant</i>
9	Air quality prediction of Ahmedabad region: Through Machine Learning Approach using a MultiObjective GA Optimization	Dr.Isha Talati	Co-PI	17.42	SERB, New Delhi, <i>Core Research Grant</i>
10	Redox-active and conducting polymer nanocomposite electrodes for the electrosorption based wastewater treatment: A pilot scale approach using flexible moving electrodes	Dr. Ganesh Bajad		51.53	SERB, New Delhi, <i>Core Research Grant</i>
11	Electrochemical CO ₂ capture and solvent regeneration with electric production	Ms. Shubhangi Ganesh Bajad along with Dr. Sudhanshu Sharma, IIT Gandhinagar		7.5 Lakh (IAR) & 7.5 IIT Gandhinagar	SERB, New Delhi, <i>SITARE</i>
12	Rapid multiplexed food adulterants detection using smart nano-device	Dr. Alok Pandya (Co-PI) along with Dr. Ritesh Shukla (PI)	Co-PI	10.50 for IAR	Ministry of Home Affairs Government of India
Total No. of Grant Submitted: 12			Total Proposed Amount (In Lakh): 320.18		

SERB: Scientific Extramural Research Board, New Delhi; GUJCOST: Gujarat Council of Science and Technology

Thriving Research Environment

Ongoing Research Grants

Sr. No.	Title of Grant	Faculty Name	Role (PI/Co-PI)	Grant(In Lakh)	Award Year	Funding Agency
Department of Biological Sciences and Biotechnology						
1	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 Rajput	PI	52.58836	2021	GSBTM Gujarat
2	Identification and validation of potential phytochemicals against proteases (3CLpro/Mpro) of SARS-CoV-2 using combined computational and experimental tools	Dr. Dhaval Patel	PI	11.22543	2021	GSBTM Gujarat
3	cFMS kinase blockade for Macrophage subset-2 (M2)depletion as a potential immunotherapeutic strategy for antibiotic inducedImmunosuppression Collaborative Grant (Inter-organization)	Dr. Reena Rajput	PI	30.96500	2020	SERB 2020
4	Characterization and assessment of solid waste, leachate and ground water quality at pirana	Dr. G.S. Vishwakarma	PI	9.69	2019	GSBTM Gujarat
5	Novel role of MDC1 in autophagy and its implications in cancer therapy	Dr. Neeru Singh	PI	1:00	2021	IAR (Seed Grant)

Department of Engineering and Physical Sciences						
6)	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
7)	Self-Sanitizing plasma modulated nonwoven fabrics with a nanostructure for rapid killing of pathogenic virus	Dr. Niranjana Patra	PI	1.0	2021	IAR (Seed Grant)
8)	Development of packed bed thermal storage unit using encapsulated thermal storage materials	Dr. Abhay Dinker	PI	1.0	2021	IAR (Seed Grant)
9)	Conducting polymer nanocomposite electrodes for the Electrosorption based wastewater treatment	Dr. Ganesh Bajad	PI	1.0	2021	IAR (Seed Grant)
Total Ongoing Grant: 9			Total Sanctioned Amount: 146.88 Lakh			

SERB: Scientific Extramural Research Board, New Delhi; GSBTM: Gujarat State Biotechnology Mission; DST: Department of Science & Technology, IAR: Institute of Advanced Research

Funded Projects Completed

Sr. No.	Title	Name of PI/Co-PI	Role	Budget	Year Approved	Funding Agency
1	Involvement of chloroplasts in oxidative stress-induced Programmed Cell Death (PCD): characterization of cytochrome f release from chloroplast and its interacting partners involved in cell death process	Dr. B.S. Tiwari	PI	30.0	2018	SERB, New Delhi
2	Study of the role of Appl& Tau gene during mitochondrial axonal transport in Drosophila model of Alzheimer's disease	Dr. A.K. Tiwari	PI	44.42	2018	SERB, New Delhi
3	Evaluation of immunogenicity and protective efficacy of bivalent vaccine candidate against Shigella and Salmonella using food-grade bacteria L. lactis	Dr.Priti Desai	PI	27.2	2018	SERB, New Delhi

SERB: Scientific Extramural Research Board

Infrastructure Grants

• **FIST Grant to Department of Biological Sciences and Biotechnology**

Department of Biological Sciences and Biotechnology, Institute of Advanced Research Gandhinagar has received a Fund of 69 lakhs for Improvement of S&T Infrastructure (FIST), from the Department of Science and Technology (DST), Government of India.

• **Supercomputer Facility**

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



Image: GUJCOST supported supercomputer facility at IAR, Gandhinagar

Ph.D. Students

Department of Biological Science and Biotechnology			
Sr. No.	Name of Ph.D. Scholar	Reg. No.	Supervisor
1	Ms. Bhatt VidhibenDhavalkumar	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. RohiTusharkumar Bhatt	UAIR/11073	Dr.Budhi Sagar Tiwari
5	Ms. Shah DhruviUrmilbhai	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	Ms. Shivani Yadav	UIAR/11368	Dr. Reena Rajput
9	Ms. HimaVatsal Vora	IAR/11590	Dr. Reena Rajput
10	Mr. SachinkumarAmrutlalVaidh	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	Ms. DivyabenKamleshbhaiTarwadi	IAR/11607	Dr.Budhi Sagar Tiwari
14	Mr. RajkishansinhRaghuvirsinhThakor	IAR/11581	Dr. Dhaval Patel
15	Ms. Pandya Kavya Ajit	IAR/11999	Dr.Neeru Singh
16	Ms. DharniMukeshkumar Parekh	IAR/12000	Dr. Gajendra Singh
17	Ms. Sagarika Saha	IAR/11988	Dr. Anand K. Tiwari

Business and Management			
Sr. No.	Name of Ph.D. Scholar	Reg. No.	Supervisor
1	Mr. MithileshkumarHiteshwar 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
4	Mr. AarsheykumarPankajkumar Shah	IAR/11604	Prof. Rao Bhamidimarri
5	Mrs. MadhubantiJoydutta Dutta	IAR/11617	Prof. Rao Bhamidimarri
6	Mr. Kalpesh Vitlani	IAR/12001	To be allocated
7	Mr. Jay Pandya	IAR/11970	To be allocated
8	Mr. Amit Rupela	IAR/11971	To be allocated
Engineering and Physical Sciences			
Sr. No.	Name of Ph.D. Scholar	Reg. No.	Supervisor
1	Mr. Verma Chetan	UAIR/10817	Dr.Sachin Sharma
2	Ms. ChandaniHalpani	UIAR/11382	Dr. Satyendra Mishra
3	Ms. Sejal Patel	UIAR/11807	Dr. Satyendra Mishra
4	Ms. Patel Nidhi Miteshbhai	UIAR/11381	Prof. Ganesh Prasad
5	Mr. DipakkumarAmrutbhaiBariya	IAR/11571	Dr. Satyendra Mishra
6	Mr. Yash BhagawatprasadBarot	IAR/11572	Dr.Roli Mishra
7	Mr. Azriel Anthony Henry	IAR/11593	Dr. Sunil Gautam
8	Mrs. Divya Dileep	IAR/11599	Prof. Suresh Doravari and Dr. Arvind Saxena(Co-Supervisor)
9	Ms. ShubhangiRajendrarao Deshmukh	IAR/11601	Prof. Rao Bhamidimarri




10	Ms. Nidhi Vijay Verma	IAR/11606	Dr. Alok Pandya
11	Ms. Rani Vinod Gupta	IAR/11653	Dr. Ganesh Bajad
12	Ms. Sushmita Anilkumar Mishra	IAR/11573	Prof. Ganesh Prasad
13	Mr. Mukesh Choubisa	UIAR/17190	Dr. Sunil Gautam
14	Ms. Nidhi Dubey	UIAR/11981	Dr. Sachin Sharma
15	Ms. Ketaki Anandkumar Pattani	UIAR/16283	Dr. Sunil Gautam
16	Mr. Prabhudutta Ray	UIAR/11973	Dr. Sachin Sharma
17	Mr. Saurabh Vyas	UIAR/12062	Dr. Roli Mishra

Total No. of Ph.D. students: 17 (DBSB) +8 (DBM) +17 (DEPS) =42

List of students who successfully defended their theses

Sr. No.	Name of Student	Registration No.	Supervisor	Title of Thesis
1)	Mr. Vipin Tomar	UIAR/11078	Dr. Budhi Sagar Tiwari	Identification of novel SNPs (allele) associated with resistance to spot blotch in Wheat (<i>T. aestivum</i> L)
2)	Ms. Kushwaha Manisha	UIAR/10813	Dr. Radha Tiwari	Public Expenditure on Education: A Macroeconomics Analysis of Fund Allocation and Policy Implementation in 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
4)	Mr. Snehrishn Aniruddha Chaubey	UIAR/10809	Dr. Roli Mishra	Design, synthesis and application of amino acid based ionic liquids in organic synthesis

Ph.D. Completions

Sr. No.	Name of Student	Registration No.	Supervisor	Title of Thesis
1)	 Komal Rajendrakumar Panchal	UIAR/10300	Dr. Anand K. Tiwari	Study of the role of Miro, mitochondrial outer membrane protein in Drosophila model of Alzheimer's disease
2)	 Priyadarshi Khushbu Jashvantbhai	UIAR/10596	Dr. Chandramani Pathak	Synthesis, characterization and biological evaluation of surface modified PAMAM dendrimer with gallic acid for anti-proliferative effects in cancer cells
3)	 Foram Vaidya	UIAR/10599	Dr. Chandramani Pathak	Biological evaluation of Nanoformulated anti-cancer agents: A multifaceted approach to improve bioavailability, multi drug resistance and apoptotic cell death

Publications

Sr. No.	Publication Type	DBSB	DEPS	DBM	Total
1)	Research Article	11	09	2	25
2)	Review Article	07	04	1	13
3)	Book Chapter/Conference Proceedings	02	08	3	07
Total		20	21	6	47

Details of Publications

Department of Biological Sciences and Biotechnology (DBSB) (20)

1. V Nidhi; P Dhaval; P Alok. (2020) Emerging diagnostic tools for detection of COVID-19 and perspective. *Biomedical Microdevices*, 22 (83). (Review Article)
2. Shukla, A., Jani, N., Polra, M., Kamath, A., & Patel, D. (2021). CRISPR: The Multidrug Resistance Endgame? *Molecular biotechnology*, 1-10. (Review article).
3. 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)
4. 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)
5. 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)

6. 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)
7. 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)
8. 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)
9. 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)
10. 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)
11. 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)
12. 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)
13. 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)
14. 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)

15. 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)
16. **Manuka R**, Ashok Saddhe Ankush, Srivastava AK, KumarKundan Penna S. (2021). Overexpression of rice OsWNK9 promotes Arsenite tolerance in transgenic Arabidopsis plants. *Journal of Biotechnology*, **332**, 114-125. (Research Article)
17. 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)
18. 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)
19. 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)
20. 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)

Department of Engineering and Physical Sciences (DEPS) (21)

1. Dudhane S, Majethiya R, Jani I, Patel M, **Bajad G**, (2020). Degradation and removal of Pendimethalin herbicide from aqueous solution using electro-sorption process, *Natural Sciences*, volume 1 (1). (In Press) (Research Article)
2. 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)
3. 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)
4. Bariya A, Anand V, **Mishra S**. (2021), Recent Advances In the Bile Acid Based Conjugates/Derivatives towards Their Gelation Applications, *Steroid*, 2021, 108769 (Review Article)
5. 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)
6. 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)
7. **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)
8. **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)
9. **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)
10. **Choudhary M**. (2021). Perspective: dusty plasma experiments—a learning tool for physics graduate students, *European Journal of Physics*, 2021, 42 053001 (Review Article) 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)
11. **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)

12. Kumar S., Yadav, A. S., Dey, S., and Saha, M. (2021). Parametric inference of generalized process capability index C_{pk} for the power Lindley distribution Quality Technology and Quantitative Management. **(Research Article)**
13. Yadav, A. S., Saha M., Tripathi H., and Kumar S. (2021). The exponentiated xgamma distribution: Estimation and its application. *Statistica*. **(Research Article)**
14. Mishra P., Aloka S., Rajak D., JavedM., 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)**
15. 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)**
16. 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)**
17. 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)**
18. 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)**
19. 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)**
20. 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)**





Department of Business and Management (DBM) (4)

1. Kushwaha, M., Tiwari, R. (2020). A Causal Relationship between Public Expenditure Education and Human Development: Analysis of Indian States. *A Global Journal of Social Science*, 3(3), 1-7. **(Research Article)**
2. Thakkar, H., Tiwari, R. Kushwaha, M. (2020). The Voice of Industries: Which most important areas where Federation of Industries and Associations should focus on., *Business Excellence and Leadership in Vuca World*. (First ed., pp. 1-7). Mumbai, Maharashtra: Himalaya Publishing House. **(Book Chapter)**
3. Rathod, D.(2020). Deconstructing Maternal Semiotic and Paternal Symbolic: A Psycholinguistic Perspective for Social Refinement. *Rupkatha Journal on Interdisciplinary Studies in Humanities* (ISSN 0975-2935), ERIHPLUS Special Conference Issue (Vol. 12, No. 5, 2020. 1-7).**(Research Article)**
4. 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)**.

5. Patents

Sr. No.	Author's Name	Title	Patent/Application No.	Year
1)	Oza Ankit	Indian Industrial Design Patent "Iot Based Organic Compost Machine" under IP Design, Intellectual Property Right, Govt of India	Application No. 345652-001	2021
2)	Oza Ankit	IOT based vaccine box for COVID 19	Application No. 345888-001	2021
3)	Oza Ankit	IOT based agricultural security drone	Application No. 345915-001	2021
4)	Oza Ankit	IOT based intelligent hydroponic plant box	Application No. 345955-001	2021
5)	Oza Ankit	IOT based oxygen concentrator under IP Design, Intellectual Property Right, Govt of India	Application No. 347198-001	2021
6)	Oza Ankit	Low cost ambu bag ventilator for COVID 19 under IP Design, Intellectual Property Right, Govt of India	Application No. 347318-001	2021

IAR Seed Grant Awardees

Sr. No.	Principal Investigator (PI)		
	Faculty Name	Title of Grant	Department
1)	 Dr. Nereru Singh	Novel role of MDC1 in Autophagy and its implications in cancer therapy	DBSB
2)	 Dr. Ganesh Bajad	Conducting polymer nanocomposite electrodes for the electrosorption based wastewater treatment	DEPS
3)	 Dr. Niranjana Patra	Self-sanitizing plasma modulated non woven fabrics with a nanostructure for rapid killing of pathogenic virus	DEPS
4)	 Dr. Abhay Dinker	Development of packed bed thermal storage unit using encapsulated thermal storage materials	DEPS

Scheme of Developing High-quality Research (SODH) fellowships from Government of Gujarat

Department of Education, Government of Gujarat strives to facilitate and promote qualitative research in emerging areas in Humanities, Social Sciences, Languages, Literature, Pure sciences, Engineering and Technology, Pharmacy, Medical, Agricultural Sciences, etc. Therefore, to facilitate and encourage young research scholars for undertaking research, the Department of Education, Government of Gujarat has initiated the Scheme of Developing High-quality research (SODH).

The following students from the Institute of Advanced Research received the SODH scholarships:

Sr. No.	Name of Ph.D. Scholar	Department	Supervisor	Title of the SODH Proposal
1)	Ms. Pandya Kavya Ajit	DBSB	Dr. Neeru Singh	Investigate the novel role of mdcl as an autophagy inducer and its implications in tumorigenesis
2)	Ms. Parekh Dharni Mukeshkumar	DBSB	Dr. Gajendra Singh	Exploration of Leachate treatment potential of fruit peel based garbage enzyme
3)	Ms. Nidhi Dubey	DEPS	Dr. Sachin Sharma	Artificial Intelligence techniques for semantic and geometric tasks in Photogrammetry
4)	Mr. Prabhudutta Ray	DEPS	Dr. Sachin Sharma	Early prediction of survival of ICU patients at the time of admission using AI techniques
5)	Ms. Sushmita AnilkumarMishra	DEPS	Prof. Ganesh Prasad	A study on electron scale instabilities in plasmas
6)	Mr. Vyas Saurabh Manojkumar	DEPS	Dr. Roli Mishra	Synthesis and characterization of biocompatible functionalizedImidazolium Ionic Liquids and their applications

DBSB: Department of Biological Sciences and Biotechnology; DEPS: Department of Engineering and Physical Sciences

Newly Accredited Ph.D. Supervisors

The following faculties have been recognized as Ph.D. Supervisor during the year 2021:

Sr. No.	Name of Faculty	Designation	Department
1)	Dr. Neeru Singh	Assistant Professor	DBSB
2)	Prof. Suresh Doravari	Professor	IUCAA, Pune
3)	Dr. Sujata Behera	Assistant Professor	DBM
4)	Dr. Arvind Saxena	Assistant Professor	DEPS
5)	Dr. Rachana Gupta	Assistant Professor	DEPS
6)	Dr. Arpit Shukala	Assistant Professor	DBSB

DBSB: Department of Biological Sciences and Biotechnology; DBM: Department of Business and Management; DEPS: Department of Engineering and Physical Sciences; IUCAA: Inter-university Centre for Astronomy and Astrophysics, Pune

Seminars/Webinars and Workshops

Webinars

Sr. No.	Date	Title of Webinar	Speaker/Speakers/ Coordinator
1	24/03/2021	Patents and Intellectual Property	Mr. Bhavik Patel, Founder, Infinvent
2	26/03/2021	Design Thinking: A strategic approach to innovation and start-up creation	Mr. KarmjitsinhBihola, Founder, INNODESK
3	29/05/2021	Opportunities in AI based start-ups	Mr. PragalbKulshrestha, Sr.Data Scientist, Commerce IQ
4	29/05/2021	Key skills required for freshers to get into web and mobile app development	Mr. Gaurav Gupta, Founder, Squareboat
5	19-24/07/2021	Faculty Development Program	Dr. Ruchi Singh
6	08/09/2021	20 reasons why one should study Master in Materials Science	Dr. Niranjana Patra and Dr. Tvarit Patel
7	25/08/2021	Career opportunities in Nanoscience and Materials Science	Dr. Niranjana Patra and Dr. Tvarit Patel
8	05/08/2021	Emerging trends and future prospects in Nanoscience and Materials Science	Dr. Niranjana Patra and Dr. Tvarit Patel
9	20/08/2021	Chemistry career counseling for UG & PG students	Dr. Roli Mishra
10	12/07/2021	Research Methodology and Ethics: Plagiarism issues and reference management tools: Chemistry	Dr. Roli Mishra
11	7-8/07/2021	Research Methodology and Ethics: Plagiarism issues and reference management tools: Biology	Dr. Neeru Singh and Dr. Gajendra Singh Vishwakarma
12	25/08/2021	Latest technologies in Computer Engineering	Dr. SachinSharma, Mr. Nitin Padriya, and Dr. Sunil Gautam

Workshops Organized

Hands-on training program on “*Molecular Docking and Molecular Dynamics*” was jointly organized by Gujarat Biotechnology Research Centre (GBRC), DST and Institute of Advanced Research (IAR, Gandhinagar) sponsored by Gujarat State Biotechnology Mission (GSBTM).

Date: 13th-17th September 2021

Coordinator from IAR: Dr. Dhaval Patel, Assistant Professor, DBSB served as resource person and coordinator from IAR.

Invited Talk

- Tiwari A.K. (2021).** Eye Development in *Drosophila Melanogaster*. 26th January 2021 in program "Drosophila Melanogaster as a model organism" organized by the Skill Development Centre (SDC), BEICH RUSA.2.0 and Department of Human Genetics and Molecular Biology, Bharathiar University, Coimbatore.
- Tiwari A.K. (2021).** Miro, a Rho GTPases modulate the AD-related pathologies in *Drosophila Melanogaster* in 2nd Global Virtual Summit on Biotechnology and Bioengineering Meeting on 22nd April 2021 (An international Biotech meet).
- Oza Ankit (2021).** Recent Trends in Mechanical Engineering. Faculty Development Program organized by the Department of Mechanical Engineering, Gokul Global University, Gujarat, on 14 July 2021.
- Oza Ankit (2021).** Modeling approach of Wire-ECM Process in Online Short Term Course on “Modeling Approach in Micro - Machining Processes”, organized by Department of Mechanical Engineering, School of Technology, PDPU, Gandhinagar, India, on 30th October 2020.
- Mishra R. (2021).** Remediation and Extension Activities. Faculty Development Program organized by the Institute of Advanced Research Gandhinagar, Gujarat, on 20th July 2021.
- Mishra R. (2021).** Internal Quality Assurance. Faculty Development Program organized by the Institute of Advanced Research Gandhinagar, Gujarat, on 21st July 2021.
- Kumar S. (2021).** 3 days lecture series on Design Project-I (Statistical methods) for the course M.Des. at NID Ahmedabad, Gujarat during 18-22 June, 2021.

8. **Sharma S. (2021).** Talk in GUJCOST sponsored two days National E-Workshop on Python Programming on 19th and 20th August' 2021 organized by Department of Computer Application(MCA), Sankalchand Patel College of Engineering, Sankalchand Patel University, Visnagar.
9. **Sharma S. (2021).**Talk in GUJCOST sponsored two days webinar on Advances in Electrical and Electronics Engineering for Healthcare System development” on 27th-28th August' 2021 organized by Electrical Engineering Department, Adani Institute of Infrastructure Engineering.
10. **Gupta R. (2021).**Talk in global online FDP on “Advanced Optimization Technique and hands-on with matlab” during 13th-14thFebruary, 2021 organized by Electronics and Communication Engineering department, NIT Jaipur.
11. **Mishra S. (2021).** Therapeutic Applications of Curcumin and its Derivatives in the 21st Century at Kadi Srava Vishwavidyalaya in two days National Virtual Seminar on Emerging Trends in Chemical and Material Sciences on 22-23 July 2021.
12. **Patel D. (2021).** Workshop on “Molecular Dynamics Simulations, Theory and its application using GROMACS” at the Hands-on Training Program on Molecular Docking and Molecular Dynamics 13th –17th September 2021 jointly organized by GBRC and IAR, Gandhinagar, Gujarat.
13. **Patel D. (2021).** Molecular Dythe keynote lecture, a keynote lecture at the workshop on Exploring Resources for COVID-19 Research organized by Camarada, 26th – 30th July 2021.

Start-ups

Sr. No.	Start-ups	Founder/Co-Founder Name
1.	SVA Robotics	<ul style="list-style-type: none"> • RavindrasinhRahewar • 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 • ParthPambhar • Dhruvi Desai • Parth Virani
5.	KReSys (Kalam Rescue Systems)	<ul style="list-style-type: none"> • Yash Shah • Himanshu Bhavsar • Viraj Patel • RushiOza

GSIRF (Gujarat State Institutional Rating Framework)

The Institute of Advanced Research was placed 29th in the GSIRF rankings.

University clubs involved in research related activities

Sr. No.	Name of the Club	Faculty Mentor
1.	Photography and Media Club	Mr. Mukesh Choubisa
2.	Computer Society and Gaming Club	Ms. Divya Dileep
3.	Entrepreneurship Club	Dr. Sharad Kumar
4.	Social Outreach Club	Mr. Nitin Padriya
5.	Literary and Debate Club	Dr. Dhara Rathod

Memorandum of Understanding

IAR had signed the following Memorandum of Understanding:

1) MoU with MAHSA University

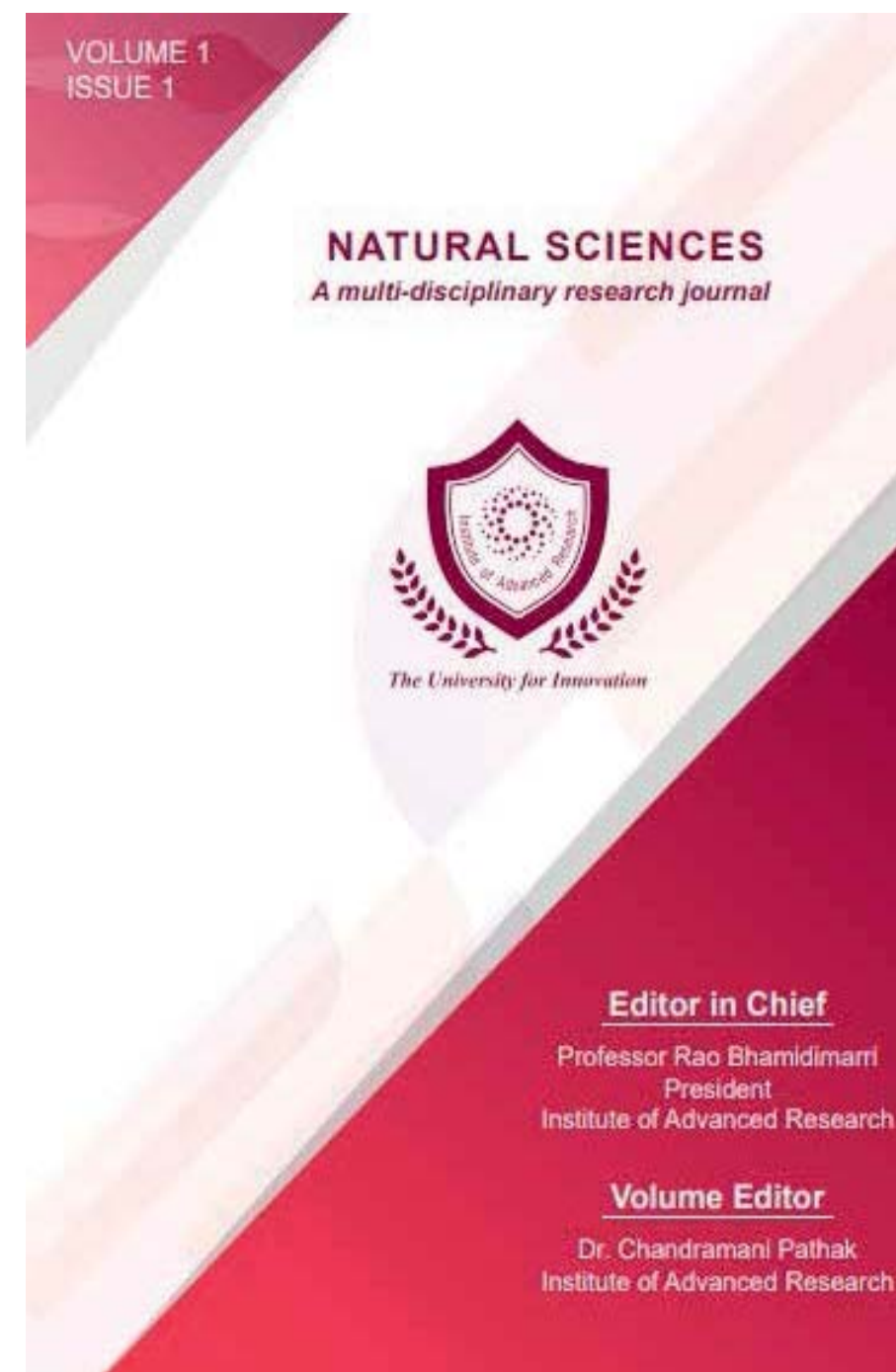
IAR signed an MoU with MAHSA University, Malaysia for joint research and academic activities (2nd September 2021).

2) MoU with TRUSHANA EXIM

IAR signed an MoU with TRUSHANA EXIM, Surat for production of microwave plasma production using 2.45 GHz source and 915MHz source. In this MoU, Rs. 10 lakhs have been released as the first instalment.






IAR, Research Journal




IAR has 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 first issue was released in 2020.











Research Committees at IAR, Gandhinagar


Research Advisory Committee (RAC)

Chairperson:			
1	Dr. RakshVirJasra	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 – 390 002 Email: sk.mukherjee- phy@msubaroda.ac.in	







6	Prof. Pramod DamodarPaliwal	School of Petroleum Management, Pandit Deendayal Petroleum University, Gandhinagar –382 007 Email: pramod.paliwal@spm.pdpu.ac.in	
7	Prof. Bhamidimarri Rao	President, Institute of Advanced Research, Gandhinagar – 382 330 Email: president@iar.ac.in	
8	Dr. Anand K. Tiwari	Department of Biological Sciences andBiotechnology, Institute of Advanced Research, Gandhinagar - 382 330 Email: anandk.tiwari@iar.ac.in	









University Research and Innovation Committee









Chairperson:			
1	Prof. Bhamidimarri 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	Dr. Anand K. Tiwari (Dean R&I)	Department of Biological Sciences and Biotechnology, Institute of Advanced Research, Gandhinagar Email: anandk.tiwari@iar.ac.in	
4	Dr. Narendra Kumar	HOD, Biological Sciences and Biotechnology, Institute of Advanced Research, Gandhinagar Email: head.dbsb@iar.ac.in	
5	Dr. Abhay Dinker	HOD, Engineering and Physical Sciences, Institute of Advanced Research, Gandhinagar Email: head.deps@iar.ac.in	
6	Dr. Sharad Kumar	HOD, Business and Management, Institute of Advanced Research, Gandhinagar Email: head.dbsb@iar.ac.in	
7	Dr. Nitesh Kumar Agrawal	Faculty Representative, DEPS, IAR, Gandhinagar	
8	Dr. Niranjana Patra	Faculty Representative, DEPS, IAR, Gandhinagar	





9	Dr. Neeru Singh	Faculty Representative, DBSB, IAR, Gandhinagar	
---	-----------------	--	---

Faculty Profiles

<p>Prof. K. S. Ganesh Prasad Professor Ph.D.: Gujarat University Post Doc: IPR, Gujarat; Marseillie, France Research Interests: Industrial Plasma Applications, Industrial Electronics, Engineering Product Development</p>		<p>Dr. Budhi Sagar Tiwari Associate Professor Ph.D.: Banaras Hindu University Post Doc: Bose Institute, Kolkata; HUJI, Israel RU, New Jersey; UNL, USA; SLU, Sweden Virginia Tech, SA Research Interests: Photosynthesis PCD, Anhydrobiosis</p>	
<p>Dr. Anand K. Tiwari Associate Professor Ph.D.: Banaras Hindu University Post Doc: Indian Institute of Toxicology Research, UP Research Interests: Drosophila Neurobiology Genetics, Dev. Biology</p>		<p>Dr. Reena Agrawal Rajput Associate Professor Ph.D.: NCCS, Pune University Post Doc: B. V. Patel PERD Centre, Ahmedabad; NIPER, Ahmedabad Research Interests: Immunology, Regenerative Medicine</p>	
<p>Dr. Gurudatt Gaur Assistant Professor Ph.D.: IPR Post Doc: IPR, Gujarat Research Interests: Gravitational Wave, Astronomy, Plasma Physics</p>		<p>Dr. Priti Desai Assistant Professor Ph.D.: Bhavnagar University Post Doc: NIPER, Ahmedabad Research Interests: Infection and Immunity, Vaccine Development, Biotherapeutics</p>	





<p>Dr. Abhay Dinker Assistant Professor Ph.D.: MNIT Research Interests: Energy Storage, Simulation, Modeling Green Energy</p>		<p>Dr. Jay Joshi Assistant Professor Ph.D.: Sardar Patel University Research Interests: Finance Accounting, General Management, Law</p>	
<p>Dr. Ganesh Bajad Assistant Professor Ph.D.: VNIT Research Interests: Synthesis of Nanomaterial, polymer nano composites</p>		<p>Dr. Sharad Kumar Assistant Professor Ph.D.: IIT Kharagpur Research Interests: Entrepreneurship, Healthcare Management</p>	
<p>Dr. Roli Mishra Assistant Professor Ph.D.: Allahabad University Post Doc: IISC, Bangalore; University of Minnesota, USA; IIT, Delhi Research Interests: Novel Synthetic Methodologies, Ionic Liquid</p>		<p>Dr. Radha Tiwari Assistant Professor Ph.D.: CSJM University Research Interests: Developmental Economics, Endogenous Factor Analysis</p>	
<p>Dr. Ritu Sahani Assistant Professor Ph.D.: Jaypee Institute of Information Technology Research Interests: Applications of Fixed Point Theorems, Application of Fuzzy Set Theory, Solid Mechanics Problem, Fractals and Chaos</p>		<p>Dr. Dhara Rathod Assistant Professor Ph.D.: Bhavnagar University Research Interests: Psycholinguistic Feminism Partition Fiction</p>	

<p>Dr. Alok Pandya Assistant Professor Ph.D.: Gujarat University Post Doc: Ahmedabad University Research Interests: Nano Chemistry, Nano Biotechnology, Diagnostics Kit Development</p>		<p>Dr. Ravi Prakash Chandra Assistant Professor Ph.D.: Gujarat University Research Interests: Supramolecular Chemistry, Ion Sensing Device, Liquid Crystals</p>	
<p>Dr. Satyendra Mishra Assistant Professor Ph.D.: Allahabad University Post Doc: IISC, Bangalore; University of Connecticut, USA; University of Minnesota, USA; IIT, Delhi Research Interests: Organic Synthesis, Medicinal Chemistry</p>		<p>Dr. Sachin Sharma Assistant Professor Ph.D.: Gujarat Technology University Research Interests: Image Processing, Artificial Intelligence NLP Computer Vision</p>	
<p>Dr. Dhara Patel Assistant Professor Ph.D.: Gujarat University Post Doc: Gujarat University, Ahmedabad Research Interests: Agricultural Microbiology, Applied Microbiology</p>		<p>Dr. G. S. Vishwakarma Assistant Professor Ph.D.: Central University of Punjab Research Interests: Wastewater Treatment, Solid Waste Treatment, Water Quality Monitoring, Bioremediation</p>	
<p>Dr. Dhaval Patel Assistant Professor Ph.D.: M S University Research Interests: Protein structure and function, Computational Biology, Structural Biology, Bioinformatics</p>		<p>Dr. Sudhir Bhatt Assistant Professor Ph.D.: University of Pierre and Marie Curie, France Post Doc: Old Dominion University, USA Research Interests: Experimental Plasma Physics, Plasma Medicine Coating and Smart Surfaces, Condensed Matter Physics</p>	

<p>Dr. Vivek Anand Assistant Professor Ph.D.: IIT Madras Research Interests: Synthesis of conjugated polymers and small molecules, study of white light emission and aggregation – induced emission of organic molecules</p>		<p>Dr. Suvendu Das Assistant Professor Ph.D.: JNU, Delhi Post Doc: Centre for Cellular and Molecular Biology, Hyderabad; Mount Sinai School of Medicine, USA; University of Helsinki, Finland Research Interests: Angiogenesis, Tumor Metastasis</p>	
<p>Dr. Sumit Kumar Ph.D.: Central University of Rajasthan Research Interests: Product Control Process Central Bayesian</p>		<p>Dr. Anjali Mishra Assistant Professor Ph.D.: Dr. B R Ambedkar University, Agra Research Interests: BioFuel, Method validation for drugs, Pesticides, formulation and residue analysis</p>	
<p>Dr. Niranjana Patra Assistant Professor Ph.D.: University of Genova Post Doc: Imperial College, University of Wyoming, USA; Friedrich-Alexander University Erlangen, Germany; Technical University of Liberec, Czech Republic Research Interests: Additive manufacturing (3D printing) of materials</p>		<p>Dr. Ishanki Bhardwaj Assistant Professor Ph.D.: IIT Delhi Research Interests: Supramolecular Chemistry, Peptidomimetics</p>	

<p>Dr. Ruchi Singh Assistant Professor Ph.D.: Purvanchal University, Jaunpur Research Interests: Bioinformatics, Proteomics</p>		<p>Dr. Isha Talati Assistant Professor Ph.D.: PDP, Gujarat Research Interests: Optimization Techniques, Inventory Management, Ship route optimization in ice field</p>	
<p>Dr. Sunil Gautam Assistant Professor Ph.D.: ISM Dhanbad, Jharkhand Research Interests: Intrusion Detection Systems, Wireless Sensor Network, Internet of Things</p>		<p>Mr. R. C. Goswami Assistant Professor Ph.D.: Gujarat University (pursuing) Research Interests: Internet of Things, Wireless Sensor Network, Mobile Adhoc Network</p>	
<p>Dr. Arvind Saxena Assistant Professor Ph.D.: PRL, Ahmedabad Post Doc: PRL, Ahmedabad; Oulu University, Finland; University of Latvia, Institute of Atomic Physics and Spectroscopy, Latvia Max-Planck Centre for Attosecond Science, South Korea; IPR, Gandhinagar Research Interests: Experimental Atomics and Plasma Physics</p>		<p>Dr. Mangil Choudhary Assistant Professor Ph.D.: IPR, Gujarat Post Doc: JLU, Germany Research Interests: Experimental Plasma Physics, Experimental Dusty Plasma, Low Temperature Plasma</p>	

<p>Dr. Tvarit Patel Assistant Professor Ph.D.: IIT, Gandhinagar Research Interests: Min Film Solar Cell, Polymer Composite, Nano Materials</p>		<p>Dr. Rajesh Handa Assistant Professor Ph.D.: Gujarat Technical University Research Interests: Economic Policies</p>	
<p>Dr. Ankit Oza Assistant Professor Ph.D.: PDP, Gujarat Research Interests: Micro Machining, Non-Traditional Machining, Hybrid Machining Process</p>		<p>Dr. Ankita Joshi Assistant Professor Ph.D.: DAVV, Indore Research Interests: Students migration for higher education, Internal and International Migration, Rural-urban youth migration related to studies</p>	
<p>Dr. Sujata Behera Assistant Professor Ph.D.: Nirma University, Gujarat Research Interests: Valuation Models and other Accounting, Financial Performance Issues</p>		<p>Dr. Ujjwal Das Assistant Professor Ph.D.: Central University of Assam Post Doc: EDI, Ahmedabad Research Interests: Finance and Accounting</p>	
<p>Dr. Neeru Singh Assistant Professor Ph.D.: Delhi University Post Doc: IIT, Gandhinagar Research Interests: Cancer Biology, Cell Biology, Cancer Therapeutics</p>		<p>Dr. Arpit Shukla Assistant Professor Ph.D.: Gujarat University Research Interests: Agricultural Microbiology</p>	

<p>Dr. Sudhakar Ingle Assistant Professor Ph.D.: Central University of Gujarat, Gandhinagar Research Interests: Culture Language, Literature</p>		<p>Dr. Rachana Gupta Assistant Professor Ph.D.: MNIT, Jaipur Research Interests: Image Processing, Machine Learning, Signal Processing</p>	
<p>Dr. Vishal Vyas Ph.D.: IIT, Mumbai Research Interests: Non-Linear Vibration of Structure</p>		<p>Dr. Keyur Patel Ph.D.: IIT-RAM, Research Interests: Control and Robotics, EV Design, Embedded System</p>	

Research and Development Funding Sources

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





Institute of Advanced Research
The University for Innovation

Koba Institutional Area
Gandhinagar
382426
Gujarat, India