



**MANIPAL**  
ACADEMY of HIGHER EDUCATION  
*(Institution of Eminence Deemed to be University)*

## MAHE Research Bulletin

January - March 2021

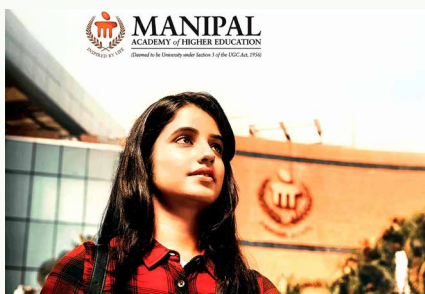


Manipal Academy of Higher Education (MAHE) has been conferred in recent years with the “Institution of Eminence” status by the Ministry of Human Resource Development (now the Ministry of Education), Government of India. With over 30,000 plus students fulfilling their dreams, MAHE Manipal remains congruous with the idea of world-class infrastructure and excellence in higher education. On these lines, about 65 different nationalities contribute to its capacious alumni corpus, supported by a budding consortium of campuses that stretch into offshore establishments. In this capacity, MAHE presents a sprawling network of creative offerings across diverse streams such as medicine, dentistry, nursing, engineering, pharmacy, hotel management, allied health, architecture and design, the creative humanities, digital media, and communication.

Over the years, MAHE has maintained its academic integrity to “promote research activities of global standards”. Thereof, in view of being a reputed multinational research hub, with active partnerships listed with more than 220 leading universities around the globe, MAHE endeavours to provide its faculty and students with pivotal access to first-class resources and facilities. To this effect, MAHE has steadfastly propagated the work ethic of “global leadership in human development, and excellence in education and healthcare”. Noticeably, the preceding 60 years alone have seen institutes at Manipal taking erstwhile steps towards strengthening its base of intellectual apprenticeship and achieving scholastic distinction in multifarious disciplines.

MAHE Manipal offers PhD programs in various disciplines through its constituent institutions and departments. In this direction, the main objective of MAHE has been to extend the scope as well as boost the prospects of multidisciplinary PhD ventures, which not only contribute to cross-cultural partnerships but also enable researchers in developing the competency for attaining goals through models of collaboration.

# Directorate of Research – MAHE, Manipal



Multidisciplinary and interdisciplinary research ventures and academic tie-ups are the bedrock of MAHE's eclectic vision of global development. Thereof, the Directorate of Research (DoR) promulgates the univocal ethic of MAHE to nurture and promote research activities at par with international standards through collaborative projects and seed-funding endeavours. In perspective, exploring fertile areas in ground-breaking research has always been of paramount significance to MAHE. In this direction, the university has witnessed a dynamic gush of publications, with doctoral degrees being awarded and grants being presented by notable funding agencies amidst other accomplishments. Presently, the DoR is operating under the leadership of the Vice Chancellor Lt Gen (Dr) M D Venkatesh and aims to expand its strategic framework by providing an invigorating eco-system for concerted effort across multidisciplinary streams. The robust panel works in association with the Heads of the Institutes of different constituent units of MAHE. In lieu, the faculty, research scholars, and students of MAHE have co-opted MAHE's research culture and are furthermore encouraged to publicize their research work in scientific publications, present papers in conferences, obtain patents, and apply for research grants. In this bulletin, we present an outline of the research activities at MAHE for the period January to March 2021.

## Vision:

To nurture and promote research activities of global standards.

## Mission:

"To facilitate and contribute to research in all disciplines, thereby improving yield in terms of grants, research innovation, intellectual property, and publications."

## Objectives:

- To identify research priorities and initiate programs.
- To seek research grants and promote focused research of national importance.
- To foster new collaborations and strengthen existing ones.
- To disseminate research findings in high-impact publications.
- To provide logistics for researchers to implement ideas.
- To support IP related activities and Technology Transfer.

**"A new idea must not be judged by its immediate results"**

– Nikola Tesla

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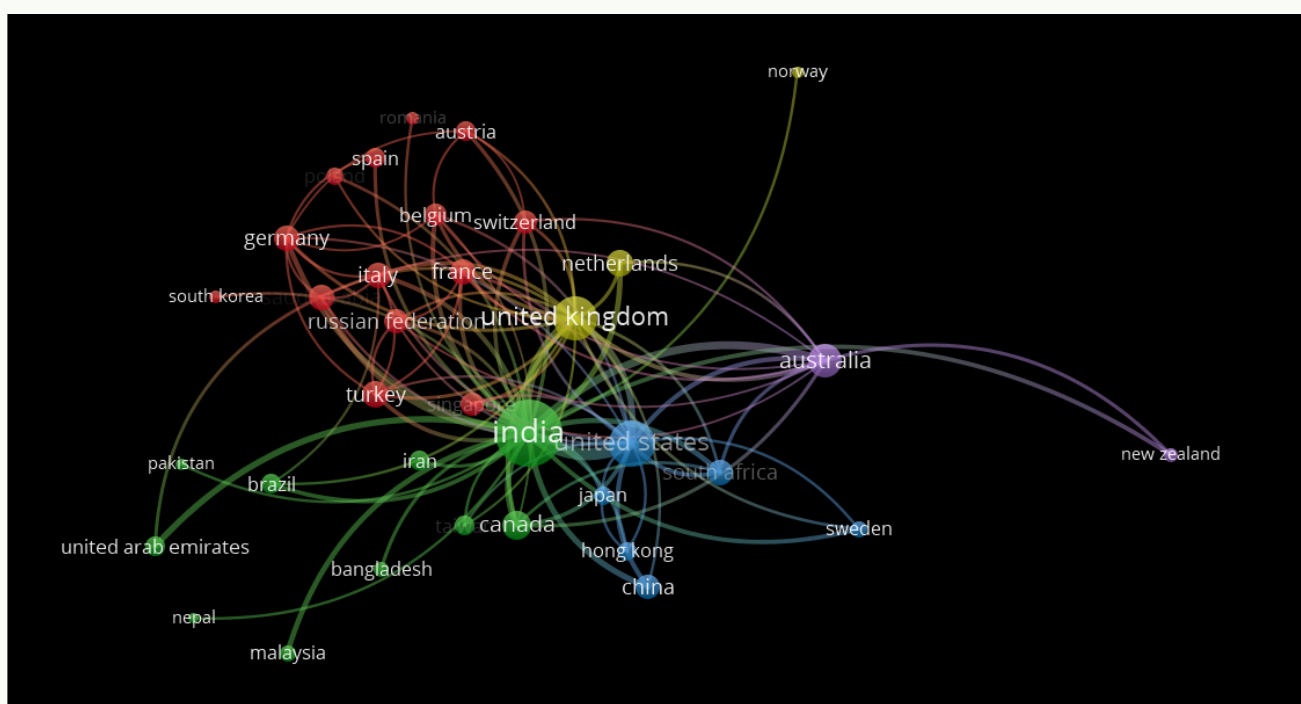
## **Part III**

- MAHE Student's Research Forum (MAHE-SRF)

# Part I

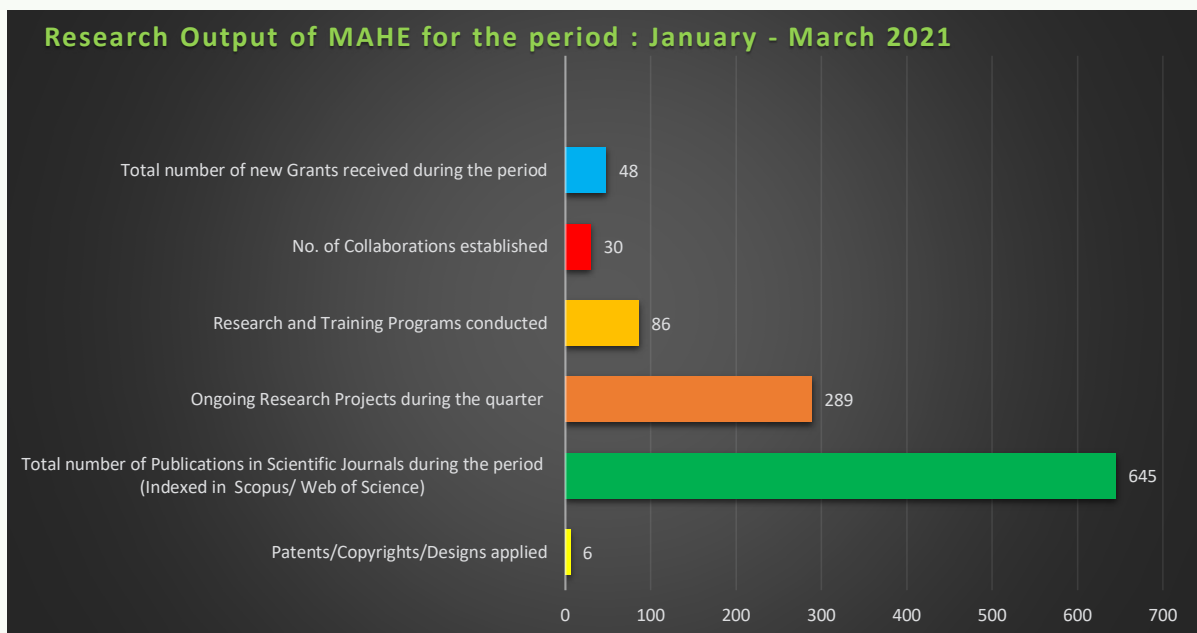
## A. MAHE Research Data Network Visualization: Top Collaborating Countries

The VOS Viewer software enables one to visualize the top productive countries collaborating with MAHE. The data for the period January 2021 to March 2021 is charted below. Current data shows the scientific collaboration network of the top 20 countries. The graph is a representation of the Institution and the country in which the institutions belong.

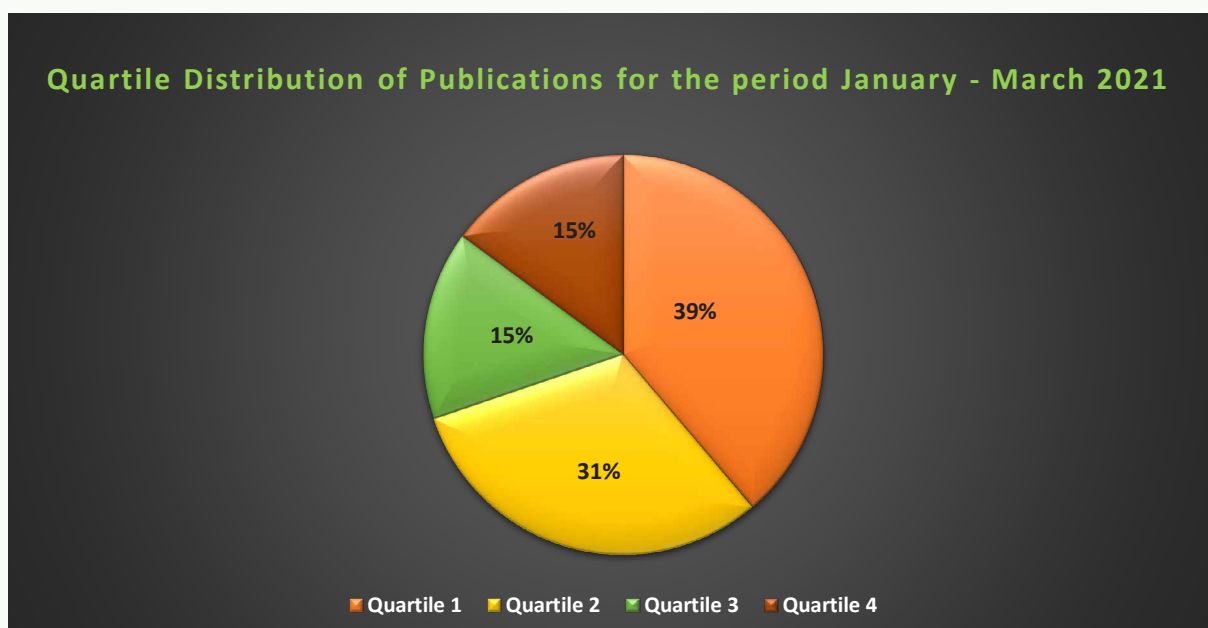


India represents MAHE and its collaboration with different universities in various countries. In the above analysis, the publication from January 2021 to March 2021 is considered. The coloured lines show the research collaboration between different countries (colours indicate the cluster to which a node has been assigned) and their size shows the strength of cooperation between two connected countries in terms of publications. United Kingdom, United States, China, and Australia are among the highly collaborating countries with MAHE. This is a distance-based network visualization wherein the distance between two nodes approximately indicates the relatedness of the nodes. MAHE has 22.6% international collaborations with world-class universities all over the world like the University of New South Wales, Johns Hopkins University, the George Institute for Global Health, Harvard University, Imperial College London, and the University of Sydney amongst others.

## B. Info-graph of Research Activities during the period January - March 2021



## C. Quartile Distribution of Publication for the period January - March 2021



## D. Faculty and Institution Achievements

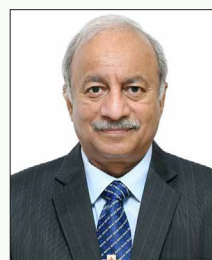
1. A Centre for Good Manufacturing Practices (cGMP) has been established by MAHE. Dr Girish Pai Kulyadi, Department of Pharmaceutics, is the coordinator of the esteemed Centre. The cGMP centre shall be assisted by a five-member in-house team from academia and two experienced industry experts. The in-house team includes Girish Thunga, Muddukrishna B S, Arvind Pai, Vasudev R Pai, Ravindra U Shenoy. Mentors from the pharma industry include Harish K Jain, Director of the Bengaluru based Embiotic Laboratories (P) Ltd, and G Sundar, Director at the Chennai based PharmQA Compliance Services.
2. Mrs Vasanthi Ramdas Pai, Trustee, MAHE, and Lt Gen (Dr) M D Venkatesh, Vice Chancellor, MAHE, released the first copies of a prominent book titled *Pharmaceutical Consumer Complaints: A guide to Academia and the Pharmaceutical Industry*.



Mrs Vasanthi Ramdas Pai,  
Trustee, MAHE



Mr Manohar S Shetty  
Managing Director,  
Sai Radha Pharma (I) Pvt Ltd



Lt Gen (Dr) M D Venkatesh,  
Vice Chancellor, MAHE



Mr Prabhakar M,  
Vice President, Hetero,  
Hyderabad

The pharmaceutical industry in India is a well-established multi-crore industry, and definitely, there is a substantially rising demand for pharmaceuticals, given our weird lifestyles and food consumption patterns. Quality is of prime importance for pharmaceutical products. It is not possible to have a defect-free product in any sector/area. However, quality issues in medicines are a significant concern since an ailing patient consumes the product. As such, this first-of-its-kind book, *Pharmaceutical Consumer Complaints: A guide to Academia and the Pharmaceutical Industry*, is aptly timed when there is a critical need to continually upgrade the quality of products manufactured, given the increasing consumer expectations. A lot of research by Dr Pai and his team has gone into capturing live examples, analyzing and classifying them. The manual includes probable root causes, their clinical significance and suggests remedial measures. This was the message given by Mrs Vasanthi Ramdas Pai, Trustee, MAHE on the book's e-release.

The book has a foreword written by Professor B Suresh, President, Pharmacy Council of India (PCI) and Dr George Patani, Hon General Secretary, Indian Drug Manufacturers Association (IDMA). The prologue is written by Harish K Jain, Director, Embiotic Laboratories and Secretary, Karnataka Drugs and Pharmaceutical Manufacturers Association (KDPMA). The book was published by Manipal Universal Press, an entity of MAHE, Manipal. Many experts from academia and industry have contributed as authors to this book, which

was edited by Dr Girish Pai Kulyadi, Dr Muddukrishna B S, (both Faculty members at MCOPS, MAHE), and Dr Richa Ajay Dayaramani (Member, PCI). On these lines, the book uniquely presents 50 unique real-life cases with corresponding remedial measures.

The Chief Guest for the book's e-release event was Mrs Vasanthi Ramdas Pai, Trustee, MAHE and Lt Gen (Dr) M D Venkatesh, Vice Chancellor, MAHE, was the guest of honour of the book release event. The first copies of the book during the book release ceremony were received by Mr Manohar S Shetty Managing Director, Sai Radha Pharma (I) Pvt Ltd, and Mr Prabhakar M, Vice President, Hetero, Hyderabad. The entire event was conducted online, keeping in mind the government's social distancing norms due to COVID-19. The book's first copies were handed over to Mr Manohar S Shetty, Managing Director, Sai Radha Pharma (I) Pvt Ltd, and Mr Prabhakar M, Vice President, Hetero, Hyderabad. Professor Shailendra Saraf (Vice President, PCI, New Delhi), Mr G N Prashanth (Senior VP and Head, Corporate Quality, Granules India Ltd) also gave their expert opinion on the book. Dr Girish Pai Kulyadi and Dr Richa Dayaramani gave the book's insights and on how to bridge the academia-industry gap. Dr Neeta Inamdar, Chief Editor, Manipal Universal Press, welcomed and Dr Muddukrishna, co-editor of the book, proposed the vote-of-thanks. Mr Ravindra Shenoy U, Faculty, Department of Commerce, MAHE, was the master of ceremonies.

3. Kasturba Hospital, Manipal, received a "Certificate of Appreciation" from the state government and Pradhan Mantri Jan Arogya Yojana for its performance under the "Ayushman Bharat-Arogya Karnataka (AB-AK)" scheme, on 26 January 2021.

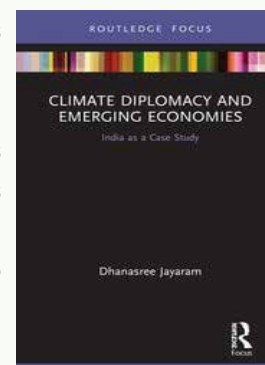


4. Dr Vijetha Belle, Associate Professor, Department of Biochemistry, Kasturba Medical College (KMC), Manipal, along with Dr Krishnananda Prabhu R V, Professor, Department of Biochemistry, and Ms Sairoz; received a copyright registration number is CF-4826/2021 on 11 March 2021 for the cinematograph film work titled "non-invasive tests for diabetes".



5. Dr Prachi Pundir, Research Officer of Public Health Evidence South Asia (PHESA), won the "Best Short Film Award" in "Cancer Collective 2021" organized by KMC, MAHE, on 27 February 2021.
6. Dr Dhanasree Jayaram, Assistant Professor, Department of Geopolitics and International Relations, MAHE, Manipal, published a Scopus-indexed book titled *Climate Diplomacy and Emerging Economies: India as a Case Study (Routledge)*, February 2021. This book is based on the status of the international climate order covering the countries – Brazil, South Africa, India, and China, and explores the collective and individual positions of these countries towards climate diplomacy, focusing, in particular, on the 2009 and 2019

climate summits in Copenhagen and Madrid. The book examines the key drivers behind climate-related policies and explores the contributory role of ideational and material factors in shaping the climate diplomacy agenda at multilateral, bilateral, and other levels. Digging deeper into the case study of India, Dr Jayaram studies the shifts in its climate diplomacy by looking into the ways in which climate change is framed and analyses the variations in perceptions of the causes of climate change, the solutions to it, the motivations for setting climate action goals, and the methods to achieve the goals.



7. Dr Shakta Mani Satyam, Assistant Professor, Department of Pharmacology, MMMC, has received the “Best Research Paper” Award for the research paper titled “Methyl gallate attenuates doxorubicin-induced cardiotoxicity in rats by suppressing oxidative stress” in a National E-Symposium on the topic “Inculcation of Research and Innovation Spirit in Postgraduate Medical Students and Faculty” held on 20 and 21 March 2021 under the aegis of National Academy of Medical Sciences (NAMS), organized by Indian Council of Medical Research, New Delhi (ICMR) and Institute of Medical Sciences, Banaras Hindu University (BHU).



8. Dr Shobha Rodrigues, Professor, Department of Prosthodontics, Manipal College of Dental Sciences (MCOADS), Mangalore, MAHE, Manipal, won the “Consolation Prize” for the E-Poster presentation on “Prosthetic Rehabilitation of Anophthalmic defect in growing children” in the 13th Biennial Conference of the International Society for Maxillofacial Rehabilitation hosted by the Indian Prosthodontic Society, Pune, from 5 to 7 February and 12 to 14 February 2021.



9. Dr Tungesh G M, Associate Professor (Senior Scale), Department of Humanities and Management, Manipal Institute of Technology (MIT), MAHE, Manipal, was awarded the “International Distinguished Academician Award – 2021” on 8 March 2021, by the Centre for Professional Advancement-HQ: West Midlands, United Kingdom. The commendation was bestowed upon him as a recognition for the pioneering performance in “Pedagogical Stylistics” on the eve of International Women’s Day 2021, held at the Centre for Professional Advancement (Indian Office), Vijayawada, Andhra Pradesh, India.



10. Dr Adesh N D, Assistant Professor Senior Scale, Department of Information and Communication Technology, MIT, MAHE, Manipal, has received “Special Mention of the Jury Award 2019” for his PhD thesis in the category of Computer Science and Engineering, by the Board of IT Education Standards (BITES), Government of Karnataka. The award ceremony was held at RNS Institute of Technology, Bangalore, on 23 February 2021. He has done his PhD under the supervision of Dr Renuka A, Professor, Department of Computer Science and Engineering, MIT, MAHE, Manipal, and his PhD thesis title is “Design and Implementation of Efficient Techniques for Packet Scheduling and Congestion Control in 4G LTE Networks”.



11. Dr Suchetha S Rao, Associate Professor, Department of Paediatrics, Kasturba Medical College, Mangalore, MAHE, Manipal was honoured with “Young Talent Hunt Award” for the oral presentation titled “Assessment of serum Vitamin E levels and clinical outcome in Paediatric Intensive Care Unit” at Criticare 2021 - Virtual conference organized by Indian Society of Critical Care Medicine, held between 26 to 28 February 2021.



12. Dr Archith Bloor, Associate Professor, Department of General Medicine, KMC Mangalore, MAHE, Manipal, received recognition for his contribution to the field of medicine and medical literature from the National Fisherman Association, Karnataka Chapter Regional Conference, held on 24 January 2021. His work is published in the third edition of the *Exam Preparatory Manual for Undergraduates Medicine* (ISBN 978-93-90595-22-8).



13. Dr Suman, Associate Professor, Department of Physiology, MAHE, Manipal and Dr Kishan, Associate Professor, Department of Physiology, MAHE, Manipal, published a book titled *Gastrointestinal System* (ISBN 978-93-89339-91-8) in February 2021.



14. Dr Usha Y Nayak, Associate Professor, Department of Pharmaceutics, Manipal College of Pharmaceutical Sciences (MCOPS), received “Third Position” in BioPress for presenting a poster titled “Glycosylated mesoporous silica nanoparticles loaded with a fluoroquinolone antibiotic for overcoming antimicrobial resistance in UTI” in the International Symposium BIOCREST 2021 held during 24 to 26 February 2021 which was jointly organized by School of Biotechnology at Amrita Vishwa Vidyapeetham, India; CHARM at University of California San Diego, USA; Bugworks Inc, India and C-CAMP, India. The paper was co-authored by Songhita Mukhopadhyay, Reema Narayan, Shivaprasad Gadag, and Padmaja A Shenoy.



15. Dr Dhanashree B, Department of Microbiology, KMC Mangalore, MAHE, Manipal, won “Second Prize” for the poster presentation titled “Antibiotic susceptibility pattern of Enterococcus spp, isolated from post-operative wound infection” during the 41st Annual Conference of the Indian Association of Biomedical Scientists on “Recent Trends in Biomedical Research” held between 12 to 14 March 2021.



16. Mr Ashish John Prabhakar, Assistant Professor-Senior Scale, Department of Physiotherapy, KMC Mangalore, MAHE, Manipal, won “Second Place” for his oral paper presentation in the Senior Category at QUADRANS 2021, held on 26 January 2021.



## E. Achievements by Research Scholars and Students

1. Ms Krupa Susan Varghese, MA Geopolitics and International Relations, Department of Geopolitics and International Relations, MAHE, Manipal, received the “Graduate Student Best Paper Prize” for her oral presentation on “The relevance of Ecofeminism in International Relations” in the two-day IIHSG (virtual) International Conference 2021 on Gender Security and Global Politics, held between 25 and 26 February 2021. The conference was organized by the Indian Institute of Human Security and Governance, Delhi, in collaboration with the Centre for International Studies and Diplomacy, School of Oriental and African Studies, University of London and also the Department of International Relations, the University of Chittagong, Bangladesh.



2. Ms Aatreyee Ghoshal, BA Humanities - First year, Manipal Centre for Humanities (MCH), MAHE, Manipal, received the “Best Paper Award” for her paper titled “Contextualizing the Feminist Protest Chant, ‘The Rapist is You’” on 6 March 2021 at Women’s Study Centre, Jesus and Mary College, University of Delhi.

3. Dr Shweta Pradhan and Dr Shalini Mundra, Postgraduate students, Department of Periodontology, MCODES Mangalore, MAHE, Manipal won the “First Prize” for their poster presentation on “Addressing the Esthetic and functional problem: An interdisciplinary approach” at the first virtual ISPRP National Conference on 9 January 2021.



4. Dr Antarleena Sengupta, Postgraduate student, Department of Periodontology, MCODES Mangalore, MAHE, Manipal, received the “Second Prize” at the “ICPA Predict the Future Innovations Contest” held on the occasion of World Oral Health Day, 20 March 2021.



5. Dr Aishwarya Dham, Postgraduate student, Department of Periodontology, MCODES Mangalore, MAHE, Manipal, received the “Consolation Prize” at ICPA in the “Predict the Future Innovations Contest” held on the occasion of World Oral Health Day on 20 March 2021.



6. Ms Tapatee Sahoo, Research Scholar, Department of Mathematics, MIT, MAHE, Manipal, has received the “Third Prize” for her paper “On relative uniform ideals in  $M_n(N)$ -group  $N^n$ ” presented in the 6th Biennial International Group Theory Conference – 2021 (6BIGTC–2021), organized by the Department of Mathematics, School of Advanced Sciences, Vellore Institute of Technology, Vellore, Tamil Nadu, India; in association with



Ferdowsi University of Mashhad, Iran; with the academic sponsorship of Ramanujan Mathematical Society, India. The virtual conference was held between 4 to 6 March 2021.

7. Ms Aditi Goyal, Department of Physiotherapy, KMC Mangalore, won the “Second Place” in an oral paper presentation of the junior category at QUADRANS 2021, held on 26 and 27 February 2021.



8. Ms Smital Laxmikant Kshirsagar, Department of Physiotherapy, KMC Mangalore, won “Third Place” in the scientific poster presentation in the junior category at QUADRANS 2021, held on 26 and 27 February 2021.



9. Mr Mihir Sriram, BArch (Fifth-Year), MSAP, MAHE, Manipal, won the “Second Prize” in the 5th annual research on cities summit, for the paper titled “Negotiating the Right to the city in the smart city - Case of informal vendors in Chennai” presented along with Professor Purushottam Kesar. The conference was conducted by Xavier University, Bhubaneswar, from 10 to 12 February 2021.



10. Dr Rupanjan, a first-year postgraduate student of the Department of Periodontology, MCOADS, Manipal, received the “First Prize” for his poster presentation on the topic “Sonoporation-A healing touch in Dentistry” at the ISPRP conference held on 9 and 10 of January 2021. He also won the “Second Prize” for a poster presentation on “Salivary Pacemaker-Revealing the incognito” at the Impla-Integrate 2021 conducted by Kalinga University on 26 February 2021.

11. Dr Nidhi, a first-year postgraduate student of the Department of Periodontology, MCOADS, Manipal, won the “First Prize” in a paper presented at the Impla Integrate Conference on “Dental Implantology” organized by Kalinga Institute of Dental Sciences, 26 February 2021.

12. Ms Lahari Anand, first-year MDS, postgraduate student, 2020 batch, Department of Public Health Dentistry, MCOOS, Manipal, MAHE, Manipal, received the “Best Poster Award” for the poster titled “Screening of oral conditions in immunization campaigns to increase awareness among caregivers and parents” which was held on 9 and 10 January 2021 at the IAPHD Colloquium.
13. Ms Michelle Abraham, Mahima Bhat, Aakanksha Mahesh Vetekar, and Manasa Nune, received the “Second Prize” for their virtual oral presentation and were invited for a paper publication. The presentation was on the topic “Design of Multifunctional Biomaterials for the Application in Peripheral Nerve Regeneration” at the 4th International Conference on Recent Trends in Bioengineering (ICRTB 2021), organized by the MIT School of Bioengineering Sciences & Research, Pune (MITBIO), from 12 to 13 February 2021.
14. Ms Keerthi K, PhD, Department of Atomic and Molecular Physics, MAHE, Manipal, along with Anish Kumar Warriar, Sajjan D George, Suresh D Kulkarni, Santhosh C, and Unnikrishnan V K, received the “Best Poster Award” for the paper titled “Trace elemental detection in a liquid sample using Laser-Induced breakdown spectroscopy and its application in the environmental field,” at the National Laser Symposium (NLS-29) held at Indore from 12 to 15 February 2021.
15. Ms Daphne N Crasta, PhD Scholar, Clinical Embryology, KMC, Manipal, was awarded the prestigious “Fullbright Nehru Doctoral Research Fellowship” to research on paternal factors on early embryo cleavage dynamics at Mayo Clinic, Rochester, USA, 2021.

## **F. Research Activities: Workshops, Programs, Webinars and Conferences**

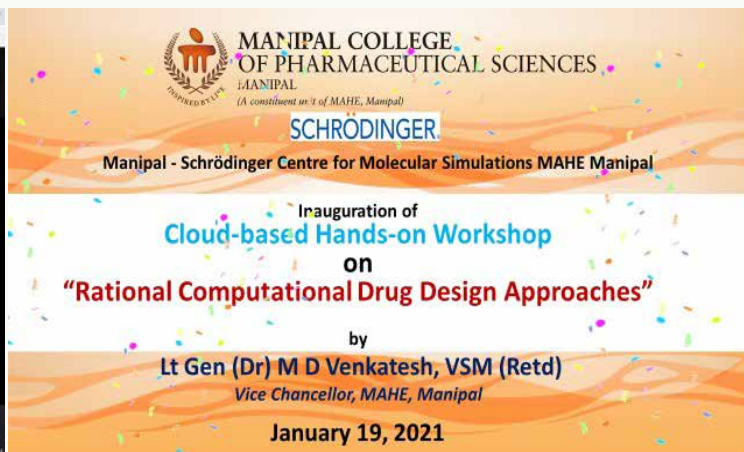
1. PHESA organized a webinar on “Indigenising systematic review evidence for policy decisions in India” on 5 March 2021, under the Scheme for Promotion of Academic and Research Collaboration (SPARC).
2. PHESA conducted a three-day online workshop on “Introduction to Systematic Reviews”. The workshop aimed at sensitizing participants on systematic review methodology. The interactive sessions of the workshop were held from 15 to 17 March 2021. Fifty participants representing various disciplines from different states in India and abroad attended the workshop.
3. PHESA conducted a five-day online workshop on “Introduction to systematic review and meta-analysis” at Charotar University of Science and Technology – CHARUSAT, Gujarat. The workshop aimed at sensitizing participants on systematic review methodology. The interactive sessions of the workshop were held from 22 to 26 March 2021. Twenty-five participants from the nursing college attended the workshop and learned in detail about systematic reviews and meta-analysis.
4. UKIERI Virtual Mobility Program (November 2020 – January 2021): Students from Manipal School of Life Sciences (MSLS), MAHE, Manipal, and Prasanna School of Public Health (PSPH), MAHE, Manipal, had a virtual Hackathon along with students from the University of Aberdeen (UoA), UK, as part of the UKIERI sponsored virtual mobility program on “Global Health”, during November 2020 and January 2021. The

virtual hackathon held on 30 January 2021, focussed on finding solutions for current public health issues such as “One Health”, “Who should be vaccinated for COVID?” and “Biomedical Research Ethics”. Students from both universities had virtual discussions and had put up poster presentations on these topics. Earlier in the week, students from MAHE and UoA had virtual ice-breaker sessions which included a webinar on global health (November 2020), as well as a global health film festival (December 2020), with active participation from students and faculty members of MSLS, PSPH, and UoA.

5. **Translational Research Certificate Course:** The Department of Pharmacy Practice, MCOPS, Manipal, organized a five days certificate course program between 23 to 27 February 2021, on translational research for the benefit of students pursuing postgraduate degree courses such as MSc/MPharm/PharmD/MD/MS/DM/MCh, and also PhD and research scholars hailing from all disciplines of the biological sciences. The course was coordinated by Dr Mahadev Rao, Professor and Head, Department of Pharmacy Practice. There were 16 resource persons from various institutions like MCOPS, KMC-Manipal, KMC-Mangalore, PSPH, Yenepoya University-Mangalore, Med Genome-Bengaluru, Novartis-Hyderabad, AIMST University-Malaysia, University of Waterloo-Canada, Johns Hopkins School of Medicine-United States. The various lectures on topics such as translational research, proteomics, genomics, Human Genome Project, Genomic Technologies, New Cancer Drug Discovery, and Precision Medicine etc, were delivered.
6. **Online Training Series on Analytical Techniques:** The Centre for Drug Testing, MCOPS, MAHE, Manipal, organized the first session of the “Online Training Series on Analytical Techniques”, on 20 March 2021. The session was on the topic “Basics of HPLC/UPLC analysis and troubleshooting in HPLC method development” delivered by Dr Karthik Arumugum, Group Leader, Tenshi Kaizen Private Limited (TKPL), Bengaluru, India. Dr Karthik explained the basics of HPLC and UPLC techniques, including column selection, solvent selection, method validation, and troubleshooting in the analysis. He also discussed current problems in the analysis and possible solutions. The session was coordinated by Dr Usha Y Nayak, Associate Professor, Department of Pharmaceutics; Coordinator, Centre for Drug Testing, MCOPS, MAHE, Manipal.



7. CPCON 2021: The 6th International Conference on clinical pharmacy was conducted from 7 to 9 January 2021 on Microsoft Teams. The event was based on the theme “Redefining Clinical Pharmacy Practice and Education: Rising to the Pandemic Challenge”. On these lines, a pre-conference workshop was conducted, followed by two days of the conference. The inaugural address was given by Lt Gen (Dr) M D Venkatesh, Vice Chancellor, MAHE, Manipal. A total of 174 national and international registered delegates participated in the event and a total of 118 scientific abstracts were received from various categories of the pharmacy discipline.



8. Cloud-based Hands-on Workshop - Rational Computational Drug Design Approaches: Manipal Centre for Molecular Simulations, MAHE, Manipal, in coordination with Schrodinger jointly organized an online “Cloud-based Hands-on Workshop: Rational Computational Drug Design Approaches” from 19 to 21 January 2021. This workshop was inaugurated by the Retd Lt Gen (Dr) M D Venkatesh, Vice Chancellor, MAHE, Manipal. The workshop has demonstrated how industry-savvy computational molecular modelling

tools are used to aid in drug design and formulation development on the lines of incorporating these tools into the academic curriculum and research projects. This program has also provided an exceptional value addition to professional development in the form of new skill enhancement. The program was conducted as a three-day hands-on cloud-based workshop on the structure and ligand-based drug discovery using the Schrödinger suite hosted on Amazon web servers. About 53 participants from constituent colleges of MAHE registered for the workshop. Participants have received practical experience in using the software and in-person guidance on the topics like Maestro GUI, organic molecule enumerations, protein selection, preparation, modelling, and ligand hypothesis generation. They also learned rational strategies to screen organic molecules against therapeutic targets of interest. On the whole, the workshop provided a basic theoretical background for presentations on molecular mechanics, molecular docking, pharmacophore modelling, homology modelling, molecular dynamics, and case studies on modern drug discovery projects.

## **G. Patents filed during the period January - March 2021**

1. Dr Joanna Baptist, Associate Professor, Department of Oral and Maxillofacial Surgery, MCOADS Mangalore; Akash Jain and Rushita Patil, have jointly filed for a patent titled "Portable Dental Assistant" on 1 January 2021.
2. Ms Shreelaxmi Prashant, Assistant Professor, Department of Civil Engineering, MIT, Manipal, has filed for a patent titled "Composition for a Binding Material and a Process of Preparation thereof" on 15 January 2021.
3. Dr Srinivas Mutalik, Professor, Department of Pharmaceutics, MCOPS, Manipal and Harendra Parekh have filed for a patent titled "Nanoparticulate Sunscreen Compositions of Peptide Dendrimer and Polyphenol" on 4 February 2021.
4. Dr Shailendra Kumar Tiwari, Associate Professor, Department of Electronics and Communication Engineering, MIT, Manipal; Dr Somashekara Bhat, Professor, Department of Electronics and Communication Engineering, MIT, Manipal; Dr Krishna Kishore Mahato, Professor, Department of Biophysics, Manipal School of Life Sciences, Manipal have filed for a patent titled "A Method of Fabricating Microfluidic Device" on 15 February 2021.
5. Dr Ravikiran Ongole, Professor, Department of Oral Medicine and Radiology, MCOADS Mangalore; Manorath Khanna, Ruchit Bhaktan, Priyavrat Uniyal, and Soumik Roy have filed for a patent titled "Apparatus For Measuring Mandibular Movement Of A Patient" on 19 February 2021.
6. Mr Ashit Varadraj M, Shawn Ann, and Collin Roberts from MCOADS Mangalore have filed for a patent titled "A System For Maxillary Skeletal Expansion" on 16 March 2021.

## Part II

### A. Featured Researcher of MAHE



**Dr Subrahmanya Bhat K**

Dr K Subrahmanya Bhat, currently working in the capacity of Associate Professor - Senior Scale, Department of Chemistry, MIT, MAHE has acquired his research acumen and experience over 20 years of sustained service. His journey is inspiring. Immediately after obtaining his PhD at Mangalore University with CSIR-JRF and SRF, he joined the prestigious GE India Technology Centre, Bangalore, to pursue his career as a Research Scientist, hinging onto emerging prospects in new monomer and process development. Later, Dr Bhat worked towards the Six Sigma green-belt certification, post which he joined MIT in the year 2009 as a faculty, where he began teaching MSc Chemistry and Engineering Chemistry for BTech graduates. In due course, he received the patent award from GE India alongside receiving the citation award from Elsevier in the area of medicinal chemistry published in the year 2006. Ever since it remained one among the “top 10 cited” across a 10-year period (2006 - 2016). In time, Dr Bhat took to a short visit to Academia Sinica, Taiwan to work in the area of organic synthesis. Over the years, he has more than 60 research publications, two patents to his credit, while he has also evaluated 10 PhD theses from other universities. Dr Bhat has co-edited a book titled *Fiber-reinforced nanocomposites: Fundamentals and applications* published by Elsevier (2020). Thereupon, his articles present an average citation rate of over 30 and Field-Weighted Citation Impact of 3.31 which is three times greater than the world average in the field. He has an h-index of 21 to his credit.

Dr Bhat’s current research interests can be traced to topics such as “chemistry of materials” and “Fiber-reinforced composites”, where he collaborates with researchers of various institutions under the banner of MAHE. His advice to young scholars is: “stay focused on your goal and work diligently to achieve them with honesty.” Further, he adds “never compromise on universal human values and be kind to others.”

PURE link: <https://manipal.pure.elsevier.com/en/persons/subrahmanya-bhat-k>



## B. Top publications for the period January - March 2021

Publication Period: January - March 2021

Sl. No	Title of the Publication	Name of the Author	Institution	Name of the Journal	Month and Year of Publication	Quartile Values and Percentile Values
1	Surface architected black phosphorous nanoconstructs based smart and versatile platform for cancer theranostics	Dr Srinivas Mutalik, Mr Nikam Ajinkya Nitin, Mr Padya Bharat Singh, Mr Gasper Joseph Fernandes, Mr Sanjay Kulkarni, Ms Shreya A B	Manipal Collage of Pharmaceutical Sciences, Manipal	Coordination Chemistry Reviews	February 2021	Q1(Top 2-9) 99%
2	Regimes of hydrochar yield from hydrothermal degradation of various lignocellulosic biomass: A review	Mr Naomon Khan, Mr Sooraj Mohan, Dr Dinesha P	Manipal Institute of Technology, Manipal	Journal of Cleaner Production	March 2021	Q1(Top 2-9) 98%
3	Red laser-mediated alterations in seed germination, growth, pigments and withanolide content of Ashwagandha [Withania somnifera (L) Dunal]	Mr Thorat Sachin Ashok, Ms Poornima Poojari (Ex-Student), Dr Muthusamy A, Arya K, Mr Kiran K R, Dr Krishna Kishore Mahato, Dr Satyamoorthy Kapaettu	Manipal School of Life Sciences	Journal of Photochemistry and Photobiology B: Biology	March 2021	Q1(Top 2-9) 97%
4	Recent trends in liquid desiccant materials and cooling systems: Application, performance, and regeneration characteristics	Dr Shanmuga Priya S, Dr Thirunavukkarasu	Manipal Institute of Technology, Manipal	Journal of Building Engineering	January 2021	Q1(Top 2-9) 97%
5	Assessment of nonsteroidal anti-inflammatory drugs from selected wastewater treatment plants of Southwestern India	Mr Praveen Kumar Reddy Y, Dr Balakrishna K, Dr Vandana K E, Dr Krishnamurthy Bhat, Dr Udaya Shankara H N, Gopal C M	Manipal Institute of Technology, Manipal	Emerging Contaminants	January 2021	Q1(Top 2-9) 96%
6	Experimental investigation on fatigue behaviour of glass/ epoxy quasi-isotropic laminate composites under different ageing conditions	Mr Padmaraj N H, Dr Vijaya Kini M, Dr Dayananda K Pai	Manipal Institute of Technology, Manipal	International Journal of Fatigue	February 2021	Q1(Top 2-9) 95%
7	An online method of estimating the state of health of a Li-Ion battery	Dr J Saikrishna Goud	Manipal Institute of Technology, Manipal	IEEE Transactions on Energy Conversion	March 2021	Q1(Top 2-9) 94%

Sl. No	Title of the Publication	Name of the Author	Institution	Name of the Journal	Month and Year of Publication	Quartile Values and Percentile Values
8	Women in higher education: Are they ready to take up administrative positions? — A mixed-methods approach to identify the barriers, Perceptions, and expectations	Dr Shreemathi S Mayya, Dr Lena Ashok, Ms Ashma Dorothy Monteiro	Prasanna School of Public Health, Manipal	SAGE Open	February 2021	Q1(Top 2-9) 94%
9	Micro-characterisation of alkali-activated paste with fly ash-GGBS-metakaolin binder system with ambient setting characteristics	Mr Muralidhar Vaman Kamath, Dr Shreelaxmi Prashanth, Mr Mithesh Kumar	Manipal Institute of Technology, Manipal	Construction and Building Materials	March 2021	Q1(Top 2-9) 94%
10	Intensification of thermo-hydraulic and exergetic performance by wire matrix and wavy tape: An experimental study	Mr U C Arunachala, K Varun	Manipal Institute of Technology, Manipal	International Communications in Heat and Mass Transfer	February 2021	Q1(Top 2-9) 94%

### C. Grants Office, Directorate of Research (DoR), MAHE, Manipal

At DoR, MAHE, the complete grant management lifecycle starting from pre-award planning to the final reporting stage, presents itself as a tenacious but rewarding process lined up to provide the best of results. Particularly, when one is starting to initiate the process for the first time it can be quite challenging. However, with timely and proactive management, the right tools at hand, and a genial workflow process in place, one can run any daunting program in solidarity. As such, the grant management process is constantly developing and actualizes various lifecycle tasks through its unique award phases.

As an ethical research community, we understand how annoying the lifecycle of a grant can be at times (with its limited-time duration for application), given the additional issue of ever-changing grant regulations and requirements. We understand the time limits set up in meeting deadlines, as also are conversant with the precise details expected in delivery alongside the financial transparency which is essentially maintained to accomplish a collaborative mission. Thereof, to make the process of pre-award planning to the final reporting (i.e., identifying, applying, and managing the external research grants without undue administrative delays), the administration of the MAHE has set up the Grants Office (GO) centrally at the DoR. At the GO, we aim to improve the research outcome of MAHE and facilitate faculty and research scholars in enhancing the quantum and quality of research funding. In tandem with the objective, we are committed to creating an enabling environment to facilitate our researchers with the following support:

- We are committed to facilitating faculty and research scholars in assisting resource identification, enhancing the quantum and quality of research funding.
- MAHE has set up a dedicated Grants Office managed by a Grants Coordinator. The Grants Office is located in the DoR, MAHE.
- Information regarding Grants and funding calls can be accessed through Research Management System (RMS) to help faculty and researchers in identifying new open calls, meet deadlines and make the application process easy by providing all required documents at one click and any project related help as well as guidance from the Mentor Board.
- Further, the Grants Coordinator will be the one-point contact to assist the grant applicant with necessary approvals, consultations, policy documents, and also to facilitate necessary meetings with Finance, legal, HR, and Mentor Board.
- Entering Project details in RMS is mandatory while applying for a new grant to generate a UTN number for proposal submission. Updating the project status (funded/rejected) in the RMS portal is the responsibility of the Principal Investigator as per the sanction/rejection letter from the concerned funding agency.

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# Part III

## MAHE Student's Research Forum (MAHE-SRF)



### Research and Innovation @ MAHE, Manipal

MAHE Students' Research Forum (MAHE-SRF) is a robust and upbeat student-centric body that facilitates the active involvement of undergraduates, postgraduates, and research scholars of the constituent institutions of MAHE. It provides various opportunities and platforms for scientific interactions and networking in multidisciplinary areas across institutions. It additionally caters to opportunities for interdisciplinary collaborative work amidst eminent researchers by organizing summer school activities, webinars, and conferences. MAHE is functional under the aegis of DoR, MAHE, Manipal. MAHE-SRF 2021 was established in January which includes undergraduate, postgraduate, and doctoral research scholars from the constituent institutions of MAHE. This body has a core team of 28 students from Manipal, Mangalore, and Bangalore campuses. The current President for the forum is Mrs Athira Rajagopal V from Welcomgroup Graduate School of Hotel Administration (WGSHA), Manipal. The Vice Presidents are Mr Nidheesh V R from the Department of Molecular and Atomic Physics (DAMP), Manipal, and Dr Madhu Keshava Bangera, Manipal College of Dental Sciences (MCOADS), Mangalore, respectively. One faculty from each institution is selected as a mentor to guide the members of the forum. This year MAHE-SRF has planned three primary events namely, MAHE Research Colloquium (MRC), Summer Training Program, and Interdisciplinary Conference on Healthcare and Technical Research (ICHTR). These events will primarily involve academic lectures, invited talks, poster and oral competitions, and workshops.

## Objectives of MAHE-SRF

- To foster research interest in undergraduate and postgraduate students, and to inspire them to take up research as a career.
- To create a network of students among constituent institutions of MAHE to promote and facilitate interdisciplinary research.
- To promote entrepreneurship and innovation among MAHE students.
- To organize research activities.
- To sensitize all the students about MAHE incentive policies for research.

## Members of active MAHE-SRF (2020)

									
Mrs. Athira Rajagopal V President	Mr. Nidheesh V R Vice President	Dr. Madhu K Bangera Vice President	Mr. Vijay Sattiraju Web Master	Ms. Vaishnavi Vetsa Finance Coordinator	Ms. D'Souza Viola Savy General Secretary	Mrs. Ninu P Mathew General Secretary	Ms. Swathi Prabhu Joint Secretary	Ms. Swathi Prabhu Joint Secretary	Ms. Revathi Ravi Amin Joint Secretary
									
Ms. Renuka Executive Member	Ms. Nikitha S Executive Member	Ms. Kashmitha Executive Member	Dr. Lochan V Executive Member	Ms. Deeksha Nayak Executive Member	Ms. Monalisa Saikia Executive Member	Dr. Aiman Abbasi Executive Member	Mr. Rakshit Singh Bisht Executive Member	Mr. Krishnamoorthi Executive Member	Mr. Krishnamoorthi Executive Member
									
Ms. Ashitha Rai Executive Member	Ms. Sindhu S Executive Member	Mr. Shivaprasad SP Executive Member	Ms. Suprita V Executive Member	Ms. Hannah Christina Executive Member	Ms. Shreya Rajagopal Executive Member	Ms. Krishnapriya T K Executive Member	Ms. Medini Hegde Executive Member	Ms. Medini Hegde Executive Member	Mr. Raghu Menon Executive Member

## **Editorial Team**

1. Dr Satish Rao B S, Director - Research, MAHE, Manipal.
2. Dr Bharti Chogtu Magazine, Deputy Director Research (Health Sciences), MAHE, Manipal.
3. Dr Santhosh K V, Deputy Director Research (Technical Sciences), MAHE, Manipal.
4. Dr Manthan D Janodia, Professor and Head, Department of Pharmacy Management, Manipal College of Pharmaceutical Sciences, MAHE, Manipal.
5. Ms Sheeba Pakkan, Bibliometrician, Directorate of Research Office, MAHE, Manipal.
6. Ms Ramya S, Associate Professor, Electronics and Communication Engineering, MIT, MAHE, Manipal.
7. Ms Anupa Lewis, Assistant Professor – Senior Scale, Department of Media Studies, Manipal Institute of Communication, MAHE, Manipal.