



**SRM**  
INSTITUTE OF SCIENCE & TECHNOLOGY  
(Deemed to be University u/s 3 of UGC Act, 1956)



## CLINICAL SIMULATIONS

Taking a glimpse into the current trends in medical simulations

Page 18

# BIOSCOPE

Official Newsletter  
Department of Biomedical Engineering

Volume 4 - Issue 2  
January - June 2022

## PATENT SEARCH

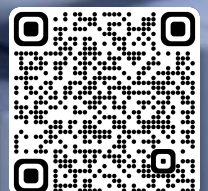
Understanding why patent searching is a critical academic tool.

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## STUDENTS & STRESS

Recognizing the symptoms of stress in students

Page 22



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# SNEAK PEEK

“My goal is simple. It is a complete understanding of the universe, why it is as it is and why it exists at all.”

— Dr. Stephen Hawking

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*BY Dr. Muthu P.*

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# LETTER FROM THE HEAD OF THE DEPARTMENT

“Interdisciplinary research which combines Biomedicine & Engineering can answer many unsolved scientific questions.”

From its humble beginning in 2004, the Department of Biomedical Engineering has reached its distinguished place today due to the department's strategy which was laid out to build a foundation for steady growth in a way to become one of the Nation's best for its academic and research programs.

This semester has been eventful for the faculty and students in which was achieved a good set of planned objectives and solid growth rates in terms of funding for projects, medical device industry collaborations and industry academia interactions. Our steady results reflect strong execution of our plans and effective delivery of our core purpose, to implement engineering principles to improve healthcare delivery to humans.

We are a wonderful, think and act smart team and we aim to be in the Nation's top 3 in core industry placements for students and also pioneer in commercializing our ideas and projects in the near future.

Greetings and a warm welcome to this issue of BioScope!



**Dr. Varshini Karthik**  
Chief Editor, BioScope  
Head of the Department  
Department of BME  
School of Bioengineering,  
SRMIST - KTR

**EDITORIAL BOARD**  
**MEET THE TEAM BEHIND THIS ISSUE!**



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# LETTER FROM THE EDITOR'S DESK

Dear Readers,

Welcome to the fourth issue of Bioscope, for the academic year of 2022. As the official newsletter of the Department of Biomedical Engineering at the SRM Institute of Science & Technology, Kattankulathur, we are happy to bring to you the latest and most exciting developments across our department and campus.

As the new academic year is to begin soon, we are equally excited to return to on-campus education, while of course keeping in mind the regulations and safety precautions issued by the University as well as the Govt and other respective agencies. Like all our readers, we look forward to returning to the campus and experiencing the complete college experience, rich with academics and co-curricular activities such as clubs, events, etc. While we encourage our readers to take active part in their academics, we remind you also to take the necessary precautions to stay healthy.

We also want to take this opportunity to congratulate all the students, staff and faculty for their hard work and success in the last few months. We also want to thank our readers for sharing their achievements with us and allowing us to make this issue possible. We hope that everyone has continued success & triumph in all their endeavours - both academic and professional. We would also like to heartily wish our readers all the very best and that you have a splendid year ahead of you.

We wish you the very best, readers! Stay healthy, stay safe and live happy!

Best Wishes,  
**The Editorial Board, BioScope**

“We can't solve problems by using  
the same kind of thinking we used  
when we created them.”

– Dr. Albert Einstein



# ABOUT THE DEPARTMENT

Biomedical Engineering is the amalgamation of engineering principles and medical procedures in order to create solutions for healthcare. This essentially involves collaborating with doctors and medical researchers to develop medical equipments and devices as well as automated systems and software solutions related to the field.

Biomedical Engineering is one of the five departments in the School of Bioengineering. It was established in 2004, with active clinical partnership in association with SRM Medical College and Research Institute. The department aims to graduate responsible Biomedical engineers who can provide knowledge based, cost effective and high quality health care technology. Biomedical Engineering department offers B.Tech, M.Tech and Ph.D. programmes in Biomedical Engineering. Over the years, the department has actively been a part of diversified research and teaching, becoming one of the best institutions for the programme in the country.



*Faculty & final year students from the Department of Biomedical Engineering at the SRM Institute of Science & Technology.*



*Students & Faculty participating in collaborative research with vTitan Corporation Ltd.*

## KEY AREAS OF RESEARCH

1. Medical thermal imaging in diseases, diagnosis and management
2. Technologies focusing on Point of care devices for healthcare applications
3. Human Movement analysis and assistive technologies
4. Next generation healthcare technologies for communicable and non-communicable diseases involving Bio Signal Processing, Medical Image Processing, Bio electronics and Biomechanics
5. Advanced sensor technologies involving Biosensors with Instrumentation Systems and Biomedical Nanotechnology



# RESEARCH PUBLICATIONS

**Gayathri N, Shaik Mohammed, Monisha,** Rajalakshmi, **U.Sneekhalatha,** Detection of face skin cancer using Deep Convoluted Neural Network. AIP Conference Proceedings 2405, 020003 (2022); <https://doi.org/10.1063/5.0072455>, SNIP 0.314, SCI.

**Qaysar Mohi ud Din** and **A. K. Jayanthi,** "Automated Classification Of Autism Spectrum Disorder Using EEG

Signals And Convolutional Neural Networks", Biomedical Engineering: Applications, Basis and Communications Online Ready, March 2022, DOI: <https://doi.org/10.4015/S101623722250020X>, [Impact Factor:0.639], SCI.

**Anupam Jyoti A, Shreya Anilkumar, Ashokkumar Devaraj, Raja D, Varshini Karthik,** "Finite element analysis on clavicle bone during normal and extended range of motions under loading conditions", AIP Conference Proceedings 2405, 020010 (2022), SNIP-0.314, SCI.

**Saahithyaa Vijayaraghavan, Rishab Kumar, Sibi Dp, Ashokkumar Devaraj, Varshini Karthik,** "Experimental analysis to study foot pressure distribution with human movement pattern", AIP Conference Proceedings 2405, 020008 (2022), SNIP-0.314, SCI.

**Tuhin Sengupta, Huda Altaf, Mansi Gupta, Ashokkumar Devaraj, Varshini Karthik,** "MAREMADS: Microgravity and radiation effects on musculoskeletal atrophy detection system", AIP Conference Proceedings 2405, 020007 (2022), SNIP-0.314, SCI.

**Dhyaneshwar Gowrishankar, Shivani Sathysaravanan, Varshini Karthik, D Ashok Kumar, U Ganapathy Sankar,** "Eye tracking to study eye gaze in juveniles with autism", AIP Conference Proceedings 2405, 020009 (2022), SNIP-0.314, SCI

**Nithis Harihar. B, S. P. Angeline Kirubha, Shinaz Naziha S, P. Muthu, Jerome Jorge Ebenezer G,** "Point of care device for Spectroscopic analysis of human saliva sample for detection of diabetes mellitus", AIP Conference Proceedings, April 22, Vol.No.2405, Issue No. 2021-11-16. <https://doi.org/10.1063/5.0072938>, SNIP: 0.347, SCI.

**Pallavi P, S. P. Angeline Kirubha, Anish Kumar Patra, Junaid Zahoor Dar, P. Muthu,** "Automatic Segmentation of Kidney Stones Using Active Contour Method by Machine Learning", AIP Conference Proceedings, April 22, Vol.No.2405, Issue No. 2021-11-16. <https://doi.org/10.1063/5.0072521>, SNIP: 0.347, SCI.

S. Latha, **P. Muthu,** Samiappan Dhanalakshmi, R. Kumar, Khin Wee Lai, and Xiang Wu, Emerging Feature Extraction Techniques for Machine Learning-Based Classification of Carotid Artery Ultrasound Images. Journal name: Computational Intelligence and Neuroscience, Impact Factor - 3.633, SCI.

**S. Rajalakshmi, Reshma Ruth Paul,** T. Rajalakshmi, **U. Sneekhalatha,** A Lung Tumor Detection Technique using Gradient vector flow Algorithm. AIP Conference Proceedings 2405, 020004 (2022); <https://doi.org/10.1063/5.0072457>, SNIP 0.314, SCI

**Jaison Jacob Mathunny, Varshini Karthik, Ashokkumar**



**Devaraj** and **Hari Krishnan S**, "Reliability of Kinovea software in measuring spatial parameters associated with perturbation training", International Conference on Computational Performance Evaluation (ComPE), April 22, IEEE Xplorer

S. Latha, **P. Muthu**, Khin Wee Lai, Azira Khalil and Samiappan Dhanalakshmi, "Performance Analysis of Machine Learning and Deep Learning Architectures on Early Stroke Detection Using Carotid Artery Ultrasound Images", Frontiers in Aging Neuroscience, January 2022, [IF:5.750], SCI.

**S. Gnanavel, P. Kaavya**, "Design and development of novel 3D bone scaffold for implant Application", Materials Today: Proceedings, January 2022, [SNIP:0.657], SCI.

**Richa Rashmi, U. Snehalatha**, Palani Thanaraj Krishnan, Varun dhanraj,, "Fat based studies for computer assisted screening of child obesity using thermal imaging based on deep learning techniques: A comparison with quantum machine learning approach", Soft computing Journal. online 29th Jan 2022 [IF:3.63], SCI.

A. Kumaresan, A. Arun, V. Kalpana, **P. Vinupritha** & Sundaravadivel, "Polymer-supported NiWO<sub>4</sub> nanocomposites for visible light degradation of toxic dyes", Journal of Materials Science: Materials in Electronics (2022), 31st January 2022, [IF:2.478], SCI.

**S. P. Angeline Kirubha, P. Muthu, Prince. S. E., Anusha. A, Haritha. U., Rajeswari. S**, "Diagnosis of Diabetic Retinopathy and Thyroid using Retinal Images", AIP Conference Proceedings, April 22, Vol.No.2405, Issue No. 2021-11-16. <https://doi.org/10.1063/5.0072518>, SNIP: 0.347, SCI.

**S. Srija, A. Devaraj** and **V. Karthik**, "Real-Time Motion Analysis of Middle-Aged and Aged people Using IMU Sensor," 6th International Conference on Intelligent Computing and Control Systems (ICICCS), June 2022, pp. 304-310, Doi: 10.1109/ICICCS53718.2022.9788315, IEEE xplorer (SCI).

**Keren Evangeline, I., Angeline Kirubha, S.P., Glory Precious, J**, "Prediction of Breast Cancer Recurrence in Five Years using Machine Learning Techniques and SHAP", Intelligent Computing Techniques for Smart Energy Systems. Lecture Notes in Electrical Engineering, vol 862. Springer Book Series, Singapore. [https://doi.org/10.1007/978-981-19-0252-9\\_40](https://doi.org/10.1007/978-981-19-0252-9_40), (SCI).

**J. Glory Precious, S. P. Angeline Kirubha, Keren Evangeline. I**, "Deployment of a Mobile Application Using a Novel Deep Neural Network and Advanced Pre-Trained Models for the Identification of Brain Tumours", IETE Journal of research, June 2022, <https://doi.org/10.1080/03772063.2022.2083027>, IF: 1.294, (SCI).

**Anitha Govindhan**, K. Anantha Sunitha and S. Kandhasamy, "A custom manipulator for dental implantation through model-based design", Intelligent Automation & Soft

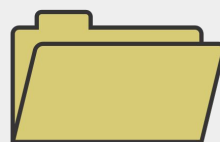
Computing, vol. 35, no.1, pp. 351-365, 2023, IF:3.407, (SCI).

**Arumugam Ramesh, R. Manigandan, Badusha Mohamad Ali, Kathirvelu Dhandapani, Chau Thi Da, Minh-Tri Nguyen-Le**, "Selective oxidation of benzyl alcohol over sulphated zirconia incorporated ordered mesoporous carbon by a hard template method", Journal of Alloys and Compounds, Volume 918, 2022, 165729, ISSN 0925-8388, IF:6.37 (SCI).

**A. Padmanaban, S. Bharathkumar, T. Dhanasekaran, R. Manigandan, M. Senthil Pandian, P. Ramasamy, D. Kathirvelu, Hector Valdes**, "Investigation of photo-/electrocatalytic activity of hydrothermal synthesized novel copper ion-modulated bifunctional NiTe<sub>2</sub> nanoflakes", Surfaces and Interfaces, Volume 32, 2022, 102124, ISSN 2468-0230, IF:6.137 (SCI).

**Rajashankari, U.Snehalatha, Rajalakshmi T**, "Design and Development of Portable Automated Audiometer for diagnosis of Hearing classification based on machine learning approaches", Biomedical Engineering: Application, Basis and communication Journal Online 13th June 2022, SNIP:0.377, (SCI).

**Sanika Prakash, Ashok Kumar Devaraj, Varshini Karthik**, "Kinematic Analysis on Specific Joins During Practice of Sun Salutation yoga Postures", Proceedings of the Sixth International Conference on Intelligent Computing and Control Systems (ICICCS 2022), Proceedings of the Sixth International Conference on Intelligent Computing and Control Systems (ICICCS 2022), ISBN: 978-1-6654-1035-9 IEEE xplorer (SCI).



## IPR & PATENTS

**Shivani S, Dhyaneswar G, Varshini Karthik, D. Ashokkumar, U. Ganapathy Sankar**, "A System For Tracking Eye Gaze Of A Person", Application No:202141061429 A, Status: Published on 7th January 2022.

**Ganapathy Krishnamurthi, N Ashwin Kumar and Swathi Lakshmi B**, "A Nanoparticle Contrast Comprising Eu<sup>3+</sup>:taox And Process of Preparation Thereof", Application No: 202141062007 A, Status: Published on 21st January 2022.

**Jaison Jacob Mathunny, Varshini Karthik**, "A Perturbation Equipment For Providing Fall Prevention Training To A Person Having Weakened Legs", Application No.202141031263 A, Status: Published on 3rd December 2021.

**Kavya, U.Snehalatha**, "An Apparatus for detecting Autism spectral disorder and a method thereof" Patent application no: 202241006981, Status: Filed on 9th Feb 2022.

**Mrs. P. Lakshmi Prabha, R. Roopesh , Kavya Atluri, Nikhil Varughese**, "Low Cost Portable Ventilator Using IOT", Status: Submitted on 24/06/2022.

# AWARDS & RECOGNITION

INCLUDING FÉLICITATIONS  
& HONORS

**Dr. A. K. Jayanthi**, appreciated in recognition of the Indian patent granted in 2021-22 titled: "A device for detecting drowsiness and method thereof" on the occasion of world IP day on 26th April, 2022.

**Sathyamoorthy B, Snehalatha U**, Won the best paper titled "Detection of facial emotion using deep learning techniques" in the International Conference on Research in Electronics Engineering and Communication Techniques (ICREACT'22), organized by Department of Electronics and communication Engineering, SRM Institute of Science and Technology, Vadapalani Campus, Chennai, Tamil Nadu, India held on 2nd and 3rd May 2022.

**Sameera Fathimal M, Angeline Kirubha S. P, Jeyaprabha A, Jothiraj S**, Won Best paper award for the paper titled "An alternative method for noninvasive Glucose Detection using FTIR Spectroscopy", in the "International Conference on Contemporary Engineering and Technology 2022" organized by Prince Shri Venkateshwara Padmavathy Engineering College, held on 21st & 22nd May 2022.

**P. Vinupritha**, presented the paper entitled "Early detection of breast cancer image using artificial neural network", awarded as Best research paper presentation in 1st International Conference on Latest Advancements in Science, Management, Commerce and Educational Research (Virtual conference - LASMCER-2022) organization organized by Silicon City College, Bangalore, India in association with Institute for engineering research and publication (IFERP) from 17th to 18th June 2022.

**Dr. Varshini Karthik, Dr. U. Snehalatha** were promoted to Professor cadre and **Dr. S. P. Angeline Kirubha**, was promoted to Associate Professor cadre in June 2022.

**Dr. Ashwin Kumar N** - Recognized as Guest Editor for Upcoming Special Issue titled "Smart Materials for Cancer Theranostics" in Materials Today Chemistry, Elsevier (Impact Factor : 8.3).



## COURSES & TRAININGS

**Mrs. Nithyakalyani Krishnan**, Participated in AICTE - ISTE sponsored refresher course on "Recent Trends in AI" Conducted by Rajendra Mane College of Engineering, Maharashtra on 11th to 17th January 2022.

**Mrs. A. Bhargavi Haripriya**, Participated in the 10 days value added courses on "Machine Learning with Python: Concepts, Tools and Hands on to build Intelligent Systems" organized by the Department of Computer Science and Engineering, SRM Institute of Science and Technology, Vadapalani, Chennai, Tamil Nadu, India from 2nd to 12th February 2022.

**Dr. T. Jayanthi** successfully completed the course "Biomedical Signal Processing" organized by NPTEL-AICTE faculty development programme on January to April 2022.

**Dr. A. K. Jayanthi, Dr. D. Ashokkumar, Dr. Ashwin Kumar N**, participated in 5 days Faculty Industry Immersion Program (FIIP) on "Requirements Engineering for Medical Devices", held at Capgemini Technology Services India Limited, during 16th to 22nd June 2022.



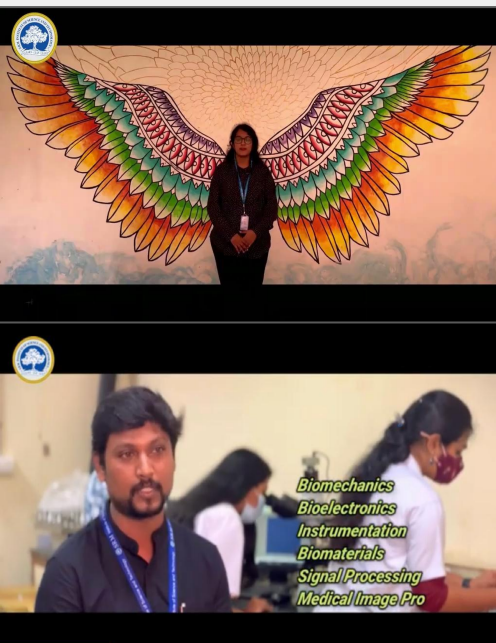
# POSTDOCTORAL CANDIDATES & STUDIES

THESIS  
SUBMITTED & GRADUATIONS

On behalf of all our readers, we would like to congratulate both **Mrs. Lakshmi Prabha P** and **Mrs. Anitha G**, for the submission of their doctorate (Ph.D) theses in the month of June 2022. We wish you all the very best with your examinations and hope that you successfully complete the defense of your thesis and are awarded your doctoral degree (Ph.D). In addition, we congratulate you for all your hard work and effort and wish you the very best.

Congratulations to the hardworking and industrious student & faculty researchers of our department on completing their doctorate programmes successfully!!! We wish you success and satisfaction in your careers, academic or industrial, as well as in your personal lives.

**GALLERY** ➔ Images of the department's faculty researchers and research scholars can be found in the Gallery section. Visit page number 27.



## WANT TO KNOW MORE?

Want to learn more about our department? Curious about what our labs look like? Or are you worried about a job placement?

The answer to all your questions and more can be learnt by watching our latest promotional video in which we take a tour across our department, its labs and meet some of our prominent faculty members as well as listen to student experiences. So don't waste any time and use the QR code to take your first glimpse into our wonderful department! We are all waiting for you!



Scan the above QR code to watch our latest video!

# TECHNICAL EVENTS & SEMINARS

## FACULTY PARTICIPATION & CONTRIBUTION

**Dr. T. Jayanthi**, Attended three days Level-1 Familiarization Workshop in Indian Nanoelectronics Users Programme- Idea to Innovation (INUP-i2i) from January 11th – 13th, 2022.

**Dr. S. P. Angeline Kirubha**, Reviewed an article for Computers in Biology and Medicine Ms. No. CIBM-D-22-00003; Manuscript "An Efficient Boosted Arithmetic Optimization Algorithm by Aquila Optimizer for Multi-level Thresholding Image Segmentation: Applications of COVID-19 Chest X-ray, Gray, and Color Images"

**Dr. S. P. Angeline Kirubha**, Reviewed an article for Physical and Engineering Sciences in Medicine Manuscript ID-APES-D-21-00585; "Lung and Colon Cancer Classification Using Medical Imaging: A Feature Engineering Approach".

**All the department faculty** attended Awareness program on POSH (prevention and prohibition of Sexual harassment) in Work place on 29th January 2022.

**Mrs. Nithyakalyani Krishnan**, participated in the Faculty Development Program on "Publishing in open access Journals", organized by R&D committee, Rajiv Gandhi College of Management Studies, Government of Maharashtra, India on 8th January 2022.

**Mrs. Nithyakalyani Krishnan**, Attended workshop on "Systematic Review and Meta-Analysis using R" conducted by Centre for Statistics, SRM IST, Kattankulathur on 11th to 13th January 2022.

**Mr. Hari Raj**, participated in the "Faculty Development program on Smart Materials for Medical Technology" Virtually organized by the Department of Biomedical Engineering, SRM Institute of Science and Technology, Kattankulathur, Chennai, Tamil Nadu, India from 17th to 22nd January 2022.

**Ms. Devaki V**, participated & volunteered in the "Faculty Development program on Smart Materials for Medical Technology" Virtually organized by the Department of Biomedical Engineering, SRM Institute of Science and Technology, Kattankulathur, Chennai, Tamil Nadu, India from 17th to 22nd January 2022.

**Ms. Hema Brindha**, participated & coordinator in the "Faculty Development program on Smart Materials for Medical Technology" Virtually organized by the Department of Biomedical Engineering, SRM Institute of Science and Technology, Kattankulathur, Chennai, Tamil Nadu, India from 17th to 22nd January 2022.

**Mrs. Nithyakalyani K**, successfully completed the AICTE-ISTE approved Orientation/Refresher programme on "Recent Trends in AI" organized by Rajendra Mane College of Engineering and Technology, Ambav-Devrukh, Maharashtra from 11th January 2022 to 17th January 2022.

**Dr. U. Snehalatha, Dr. D. Ashokkumar, S.P. Angeline Kirubha, Dr. Kathirvelu D, Mrs. A. Bhargavi Haripriya, Dr. Vinupritha P, Mrs. P. Lakshmi Prabha, Dr. P. Muthu, Mrs. Oinam Robita Chanu, Dr. Vani Damodaran**, participated in the "Faculty Development program on Smart Materials for Medical Technology" Virtually organized by the Department of Biomedical Engineering, SRM Institute of Science and Technology, Kattankulathur, Chennai, Tamil Nadu, India from 17th to 22nd January 2022.

**Mrs. A. Bhargavi Haripriya**, participated in the National Workshop on "Inclusive Sport Physical Activities for the persons with Disabilities", organized by Department of Physical Education and Sports Science, SRM Institute of Science and Technology, Kattankulathur, Tamil Nadu, held on 4th February 2022.

**Mrs. A. Bhargavi Haripriya**, participated in the webinar series on "Advances in Bio-sensing Technologies", organized by the Department of Biomedical Engineering, SRM Institute of Science and Technology, Kattankulathur, Tamil Nadu, India from 17th to 18th February, 2022.

**Dr. T. Jayanthi**, participated in Two weeks Short Term Training Programme on "Augmented Reality and Virtual Reality – A Future Technology", organized by the Department of Computer Science and Engineering, SRM Institute of Science and Technology, Vadapalani, Chennai, Tamil Nadu, India from 31st January 2022 to 11th February 2022.

**Dr. Vani Damodaran**, participated in the webinar series on "Advances in Bio-sensing Technologies", organized by the Department of Biomedical Engineering, SRM Institute of Science and Technology, Kattankulathur, Tamil Nadu, India from 17th to 18th February, 2022.

**Lakshmi Prabha. P, A.K Jayanthi**, presented a paper entitled "M-mode Carotid artery image classification and risk analysis based on machine learning and deep learning techniques", at the International Conference on Expert Clouds and Applications (ICOECA 2022) organized by department of CSE/ISE and Department of ECE, RV institute of Technology and Management, Bengaluru, India, from 3rd to 4th February 2022.

**A. K. Jayanthi, Aishwarya Ravikumar, Ammu K. M. Priyanga, Pooja Bhasker and U. Upasana Mallya**, Measurement and interpretation of Ankle Brachial Index in diabetic subjects-A pilot study to screen the possibility for complications of amputations, Virtual National Level Technical Symposium on Emerging Innovations in Applied Biological Sciences (EIABS22), SRM Institute of Science and Technology, 18th February 2022.

**Mrs. Lakshmi Prabha P**, participated in the webinar series on "Advances in Bio-sensing Technologies", organized by the Department of Biomedical Engineering, SRM Institute of Science and Technology, Kattankulathur, Tamil Nadu, India from 17th to 18th February, 2022.

**Dr. P. Vinupritha**, participated in the webinar series on "Advances in Bio-sensing Technologies", organized by the Department of Biomedical Engineering, SRM Institute of Science and Technology, Kattankulathur, Tamil Nadu, India from 17th to 18th February, 2022.

**Dr. S. P. Angeline Kirubha**, participated in the webinar series on "Advances in Bio-sensing Technologies", organized by the Department of Biomedical Engineering, SRM Institute of Science and Technology, Kattankulathur, Tamil Nadu, India from 17th to 18th February, 2022.

**Dr. Ashwin Kumar N** Served as a Reviewer for 3 manuscripts the 8th International Virtual Conference on Biosignals, Images, and Instrumentation (ICBSII 2022) conducted by SSN College, Chennai, Tamil Nadu, India on February 2022.

**Mrs. Nithyakalyani**, participated in National Webinar on "Writing a research article for publication in an academic journal" organized by the Department of

Commerce, Khalsa College for Women, Civil Lines, Ludhiana on 5th February 2022.

**Ms. Porkodi J**, participated in the webinar series on "Advances in Bio-sensing Technologies", organized by the Department of Biomedical Engineering, SRM Institute of Science and Technology, Kattankulathur, Tamil Nadu, India from 17th to 18th February, 2022.

**Ms. Sameera Fathimal M**, participated in the webinar series on "Advances in Bio-sensing Technologies", organized by the Department of Biomedical Engineering, SRM Institute of Science and Technology, Kattankulathur, Tamil Nadu, India from 17th to 18th February, 2022.

**Mrs. Nithyakalyani K**, Participated in Five days workshop on "Deep learning for Multispectral Imaging approach in Health Care Technology", conducted by the Department of Electronics and Instrumentation Engineering, SRMIST, Kattankulathur in collaboration with IGCAR, Kalpakam on 7th February 2022.

**Porkodi J**, participated in the National Workshop on "Inclusive sport and physical activities for the persons with disabilities", organized by science and humanities, department of physical education and sports sciences, SRM Institute of Science and Technology, Kattankulathur, Tamil nadu, India held on 4th February 2022.

**Porkodi J**, participated in the "5 days National Level Virtual Workshop on Data Analysis-SPSS" organized by department of commerce, Directorate of Distance Education, SRM Institute of Science and Technology, Kattankulathur, Chengalpattu, Tamil Nadu, India from 14th to 18th February 2022.

**Jeya Prabha A**, participated in the Two days National Workshop on "Deep learning based efficient code optimization in software Engineering", organized by department of computational Intelligence, School of computing, SRM Institute of Science and Technology, Kattankulathur, Chengalpattu, Tamil Nadu, India from 24th to 25th February, 2022.

**Dr. P. Muthu**, participated in the webinar series on "Advances in Bio-sensing Technologies", organized by the Department of Biomedical Engineering, SRM Institute of Science and Technology, Kattankulathur, Tamil Nadu, India from 17th to 18th February, 2022.

**Mrs. Nithyakalyani K**, participated and completed one week Faculty Development Programme on "Recent Advancements and Emerging Technologies in the Area of Education and Research" organized by IIMT College

of Management Greater Noida. U.P. from 3rd to 9th February 2022.

**Mrs. A. Bhargavi Haripriya**, participated in the five days workshop on "Deep Learning for Multi-Spectral Imaging Approach in Healthcare Technology, conducted by the Department of Electronics and Instrumentation Engineering, SRM Institute of Science and Technology, Kattankulathur, Tamil Nadu, India in association with IGCAR, Kalpakkam from 7th to 11th February, 2022.

**Ms. R. K. Ahalya**, participated in the 5 days workshop on "Deep Learning for Multi-Spectral Imaging Approach in Health Care Technology" conducted by the Department of Electronics and Instrumentation Engineering, SRM Institute of Science and Technology in association with IGCAR, Kalpakkam held on 7th to 11th February 2022.

**Ahalya R K, U Snehalatha**, received Best Paper Award paper titled: "Deep Learning Model for the Estimation of Rheumatoid Arthritis in Hand Radiographs", and in the International Conference on Biomedical Engineering and Computing Technologies ICBECT 2022, organised by the Department of Biomedical Engineering, SRM Institute of Science and Technology, Kattankulathur, Tamil Nadu, India from 23rd to 25th March, 2022.

**Hari Krishnan S, Jaison Jacob Mathunny, Karuppasamy Govindasamy, Ashokkumar Devaraj, Varshini Karthik**, received Best Paper Award paper titled: "Inter-Device Reliability of Photo Finish: Android Based Smartphone Application for the Measurement of Running Speed" and in the International Conference on Biomedical Engineering and Computing Technologies ICBECT 2022, organised by the Department of Biomedical Engineering, SRM Institute of Science and Technology, Kattankulathur, Tamil Nadu, India from 23rd to 25th March, 2022.

**Syeda Mushrif, Dr. Vani Damodaran**, received Best Paper Award for presented a paper entitled "Voice guidance smart assistive cane for visually impaired" in the International Conference on Biomedical Engineering and Computing Technologies ICBECT 2022, organised by the Department of Biomedical Engineering, SRM Institute of Science and Technology, Kattankulathur, Tamil Nadu, India from 23rd to 25th March, 2022.

**Dr. T. Jayanthi**, Served as Jury for 'Smart India Hackathon' conducted by SIIC, organized by SRM Institute of Science and Technology, Kattankulathur,

Tamil Nadu, India from 17th to 19th March 2022.

**Mrs. Keren Evangeline I**, secured Best Poster Presentation Award for presented a paper entitled "Forecasting breast cancer relapse in five years using machine learning techniques and SHAP" in Dr. Paarivendhar Research Colloquium, organized by SRM Institute of Science and Technology, Kattankulathur, Chengalpattu, Tamil Nadu, India on 24th to 26th March 2022.

**Dr. U. Snehalatha**, participated in the National Faculty Development Programme on "Recent Advances in Quantum Machine Learning for Defence and Security Applications" organised by Department of Data Science and Business Systems (DSBS) School of Computing (SCO), SRMIST from 07th to 11th March 2022.

**Dr. T. Jayanthi**, Session chair in International Conference on Biomedical Engineering & Computing Technologies, organised by the Department of Biomedical Engineering, SRM Institute of Science and Technology, Kattankulathur, Tamil Nadu, India from 23rd to 25th March, 2022

**Dr. S. P. Angeline Kirubha**, Served as Reviewer for one Article - "Prediction And Prognosis Of Breast Cancer By Machine Learning" - Academia Letters on 29th March 2022

**Mrs. P. Lakshmi Prabha**, participated in the pre-conference workshop on Biomedical Engineering and Computing Technologies (ICBECT)22, organized by SRM Institute of Science and Technology, Kattankulathur, Tamil Nadu, India, from 21st to 22nd March 2022

**Nithyakalyani Krishnan**, Poster presentation in the 3 days Conference on Dr. Paarivendhar Research Colloquium (DPRC) - 2022, organized by the Directorate of Research, SRM Institute of Science and Technology, Kattankulathur, Tamil Nadu, India on 24 - 26 March, 2022.

**Dr. S. Gnanavel**, participated in the pre-conference workshop on Biomedical Engineering and Computing Technologies (ICBECT)22, organized by SRM Institute of Science and Technology, Kattankulathur, Tamil Nadu, India, from 21st to 22nd March 2022

**Mrs. A. Bhargavi Haripriya**, participated in the pre-conference workshop on Biomedical Engineering and Computing Technologies (ICBECT)22, organized by SRM Institute of Science and Technology, Kattankulathur, Tamil Nadu, India, from 21st to 22nd March 2022



**A.K Jayanthi**, participated in the pre-conference workshop on Biomedical Engineering and Computing Technologies (ICBECT)22, organized by SRM Institute of Science and Technology, Kattankulathur, Tamil Nadu, India, from 21st to 22nd March 2022

**Dr. P. Muthu**, participated and completed successfully AICTE training and learning (ATAL) academy online advanced PDP on "Intellectual Property Rights in Academia: Creation, Protection and Commercialization". organized by All India Council of Technical Education, New Delhi, India at Andhra University from 7th to 11th February 2022.

**Dr. S. P. Angeline Kirubha**, participated in the pre-conference workshop on Biomedical Engineering and Computing Technologies (ICBECT)22, organized by SRM Institute of Science and Technology, Kattankulathur, Tamil Nadu, India, from 21st to 22nd March 2022

**Dr. D. Ashokkumar**, Session Chair in the International Conference on Biomedical Engineering and Computing Technologies ICBECT 2022, organised by the Department of Biomedical Engineering, SRM Institute of Science and Technology, Kattankulathur, Tamil Nadu, India from 23rd to 25th March, 2022.

**Mrs. Nithyakalyani Krishnan**, participated in the pre-conference workshop on Biomedical Engineering and Computing Technologies (ICBECT)22, organized by SRM Institute of Science and Technology, Kattankulathur, Tamil Nadu, India, from 21st to 22nd March 2022.

**Jaison Jacob Mathunny**, participated in the workshop on "Systematic review and Meta-analysis using R", organized by Center of Statistics, SRM Institute of Science and Technology, Kattankulathur, from 21st to 23rd March 2022.

**Ms. Jeya Prabha A** participated in the pre-conference workshop on Biomedical Engineering and Computing Technologies (ICBECT)22, organized by SRM Institute of Science and Technology, Kattankulathur, Tamil Nadu, India, from 21st to 22nd March 2022.

**Mr. Hari Raj K** participated in the pre-conference workshop on Biomedical Engineering and Computing Technologies (ICBECT)22, organized by SRM Institute of Science and Technology, Kattankulathur, Tamil Nadu, India, from 21st to 22nd March 2022.

**Dr. Ashwin Kumar N**, Served as a Reviewer in the Eighth International Conference on Biosignals, Images, and Instrumentation ICBSII, 2022 organized by Department of Biomedical Engineering, SSN College of Engineering, Chennai, Tamil Nadu, India, publication in Journal of Physics, Conference Series, IOP Publishing, held on March 16th to 18th, 2022

**Ms. Ahalya R K**, participated in the National Faculty Development Programme on "Recent Advances in Quantum Machine Learning for Defence and Security Applications", organized by Department of Data Science and Business Systems, School of Computing, SRM Institute of Science and Technology, Kattankulathur, Chengalpattu, Tamil Nadu, India from 7th to 11th March 2022.

**K Hari Raj**, Participated and volunteered 5 days Conference on Biomedical Engineering and Computing Technologies ICBECT 2022, organised by the Department of Biomedical Engineering, SRM Institute of Science and Technology, Kattankulathur, Tamil Nadu, India on 25th March, 2022.

**Mrs. Nithyakalyani Krishnan**, participated in the pre-conference workshop on Biomedical Engineering and Computing Technologies (ICBECT)22, organized by SRM Institute of Science and Technology, Kattankulathur, Tamil Nadu, India, from 21st to 22nd March 2022.

**Atul John Abraham, Gouri Lakshmy Radhakrishnan**, Ashish Kapoor, **Varshini Karthik**, V.M Vinodhini, presented a paper titled: "Coagulopathy and Covid-19: A Quantitative Review on the Influence of Coronavirus on the Human Blood Coagulation Parameters", in the International Conference on Biomedical Engineering and Computing Technologies ICBECT 2022, organised by the Department of Biomedical Engineering, SRM Institute of Science and Technology, Kattankulathur, Tamil Nadu, India from 23rd to 25th March, 2022.

**A Bhargavi Haripriya, G Anitha, Vinithra Parthasarathy**, presented a paper titled "Ultrasonic Spectacle or Visually Impaired with Dual Alert Feedback", in the International Conference on Biomedical Engineering and Computing Technologies ICBECT 2022, organised by the Department of Biomedical Engineering, SRM Institute of Science and Technology, Kattankulathur, Tamil Nadu, India from 23rd to 25th February, 2022.

**Anshul Singh, S. Gnanavel, Supriya Prashant Diwan, Aziz Unnisa, Chandra Kumar Dixit, Kumud Pant,** presented a paper titled: "Si Doped Fe<sub>3</sub>O<sub>4</sub> Nanospheres as Peroxidase Mimics for Colorimetric Sensor for selective detection of breast cancer cell using catalytic amplification assay", in the International Conference on Biomedical Engineering and Computing Technologies ICBECT 2022, organised by the Department of Biomedical Engineering, SRM Institute of Science and Technology, Kattankulathur, Tamil Nadu, India from 23rd to 25th March, 2022.

**Niryukta. M, Snehalatha.U, Rajalakshmi.T,** presented a paper titled: "Automated Audiometer for Home Based Health Care Based on Mobile App", in the International Conference on Biomedical Engineering and Computing Technologies ICBECT 2022, organised by the Department of Biomedical Engineering, SRM Institute of Science and Technology, Kattankulathur, Tamil Nadu, India from 23rd to 25th March, 2022.

**Jaineet Arora, Rushali Bhattacharjee, Deeploke Pramanik, T. Jayanthi,** presented a paper titled: "Assessment of Hypertensive Retinopathy based on Cotton Wool Spots", in the International Conference on Biomedical Engineering and Computing Technologies ICBECT 2022, organised by the Department of Biomedical Engineering, SRM Institute of Science and Technology, Kattankulathur, Tamil Nadu, India from 23rd to 25th March, 2022.

**Asiha AlHarweel, Angeline Kirubha S.P and Mohamad Adib Ghannam,** presented a paper titled: "Internet of Things Based Smart Pharmacy", in the International Conference on Biomedical Engineering and Computing Technologies ICBECT 2022, organised by the Department of Biomedical Engineering, SRM Institute of Science and Technology, Kattankulathur, Tamil Nadu, India from 23rd to 25th March, 2022.

**Porkodi.J, Ashokkumar Devaraj, Varshin Karthik, Jaison Jacob Mathunny, Hari Krishnan.S,** presented a paper titled: "Validity and Reliability of Micro Measurement- Android Smart Phone Application for Measuring Range of Motion of Finger", in the International Conference on Biomedical Engineering and Computing Technologies ICBECT 2022, organised by the Department of Biomedical Engineering, SRM Institute of Science and Technology, Kattankulathur, Tamil Nadu, India from 23rd to 25th March, 2022.

**Angeline Kirubha S. P., T.Jayanthi, SaiTejveer Santhan, Jishna M. Madhu,** presented a paper titled: "A Glance into Effective Electrocardiographic Signal Processing for Automated Arrhythmia Detection and

Cardioversion", in the International Conference on Biomedical Engineering and Computing Technologies ICBECT 2022, organised by the Department of Biomedical Engineering, SRM Institute of Science and Technology, Kattankulathur, Tamil Nadu, India from 23rd to 25th March, 2022.

**Lakshmi Parvathi M, Hirthik G, Sampath Kumar, Vani Damodaran,** presented a paper titled: "Despeckling of Optical Coherence Tomography Images using Encoder-Decoder Network with Skip Connections", in the International Conference on Biomedical Engineering and Computing Technologies ICBECT 2022, organised by the Department of Biomedical Engineering, SRM Institute of Science and Technology, Kattankulathur, Tamil Nadu, India from 23rd to 25th March, 2022.

**Qaysar Mohi-ud-Din, A. K. Jayanthi,** presented a paper titled: "Autism Spectrum Disorder detection technique using EEG and Convolution Neural Networks", in the International Conference on Biomedical Engineering and Computing Technologies ICBECT 2022, organised by the Department of Biomedical Engineering, SRM Institute of Science and Technology, Kattankulathur, Tamil Nadu, India from 23rd to 25th March, 2022.

**Lakshmi Prabha.P, Adhyyan kulshreshtha, Samarth Patel,** presented a paper titled: "Automated Brain Tumor Detection From Mri Images Using Transfer Learning Techniques", in the International Conference on Biomedical Engineering and Computing Technologies ICBECT 2022, organised by the Department of Biomedical Engineering, SRM Institute of Science and Technology, Kattankulathur, Tamil Nadu, India from 23rd to 25th March, 2022.

**Anbarasi A, U Snehalatha,** presented a paper titled: "Evaluation Of Osteoarthritis In Plain Radiographs Using Machine Learning Algorithm", in the International Conference on Biomedical Engineering and Computing Technologies ICBECT 2022, organised by the Department of Biomedical Engineering, SRM Institute of Science and Technology, Kattankulathur, Tamil Nadu, India from 23rd to 25th March, 2022.

**Jeya Prabha A, S. P. Angeline Kirubha,** participated in pre-conference workshop and presented a paper titled: "Machine learning in Medical Image and Signal Processing", in the International Conference on Biomedical Engineering and Computing Technologies ICBECT 2022, organised by the Department of Biomedical Engineering, SRM Institute of Science and

Technology, Kattankulathur, Tamil Nadu, India from 21st to 25th March, 2022.

**Shahanawaj Ahamad, J. Jeyasudha, S. Gnanavel, Chandra Kumar Dixit, Shvets Yuriy Yurievich, Ronald M. Hernandez**, presented a paper titled: "Sanitization and Restoration of Under-utilized Healthcare Database in Single-cloud and Multi-cloud environment using Optimal Key Generation for Personalized Privacy Preservation", in the International Conference on Biomedical Engineering and Computing Technologies ICBECT 2022, organised by the Department of Biomedical Engineering, SRM Institute of Science and Technology, Kattankulathur, Tamil Nadu, India from 23rd to 25th March, 2022.

**S.Rajalakshmi, A.R.Reshma Ruth Pauline, S.Mohnish, T.Rajalakshmi, U.Snekhaltha**, presented a paper titled: "A Novel Lung Tumor Detection Technique Using Fast Greedy Snake Algorithm", in the International Conference on Biomedical Engineering and Computing Technologies ICBECT 2022, organised by the Department of Biomedical Engineering, SRM Institute of Science and Technology, Kattankulathur, Tamil Nadu, India from 23rd to 25th March, 2022.

**Dr. S. Gnanavel**, Guest speaker presented a talk on "Nanomaterials for Medical Implants Application", organized by Mount Carmel College Autonomous, Department of Nanoscience and Technology, Bangalore, Karnataka, India held on March 26th, 2022.

**Ms. Hema Brindha M, Bharath Chandra V, Kottapalli Venkata Naga Sundara Mahesh, Sai Sarat Chandra V, Ashwin Kumar N** Poster presentation titled "Feasibility of RF Hyperthermia using spions impregnated hydrogel for prostate cancer", Dr. Paarivendhar Research Colloquium, organized by SRM Institute of Science and Technology, Kattankulathur, Chengalpattu, Tamil Nadu, India on 24th to 26th March 2022.

**K Hari Raj, S Gnanavel**, Poster presentation titled: "Design and study on polymeric screws for implants application", in the 3 days Conference on Dr. Paarivendhar Research Colloquium (DPRC) - 2022, organized by the Directorate of Research, SRM Institute of Science and Technology, Kattankulathur, Tamil Nadu, India on 24 - 26 March, 2022.

**All Research Scholars** - participated as a Volunteers in the International Conference on Biomedical Engineering and Computing Technologies ICBECT 2022, organized by the Department of Biomedical Engineering, SRM Institute of Science and Technology, Kattankulathur, Tamil Nadu, India from 23rd to 25th March, 2022.

**Mrs. Oinam Robita Chanu**, presented the paper entitled "Silver/Nickel oxide modified electrode based sensor for detection of nitrite", in Dr. Paarivendhar Research Colloquium-22, organised SRM Institute of Science and Technology, Kattankulathur, Chengalpattu, Tamil Nadu, India from 24th to 26th March 2022.

**Dr. P. Muthu**, Session chair for two sessions in International Conference on Biomedical Engineering & Computing Technologies, organised by the Department of Biomedical Engineering, SRM Institute of Science and Technology, Kattankulathur, Tamil Nadu, India from 23rd to 25th March, 2022

**Dr.U.Snekhaltha** delivered International guest lecture entitled "Thermal image analysis for Medical applications based on Machine learning and deep learning techniques", Online Academic Meeting of Brazilian Medical Thermology Association, University of São Paulo Brazil, South America on 4th April 2022.

**Dr. S. P. Angeline Kirubha**, delivered Guest Lecture on "Medical Image Analysis", Parul Institute of Technology, Vadodara, Gujarat, India on 20th April 2022.

**Dr.S.P. Angeline Kirubha**, Served as a Reviewer, 8th International Conference on Biosignals, Images and Instrumentation organized by, Department of Biomedical Engineering, SSN College of Engineering, Chennai, Tamil Nadu, India from 16th to 18th March 2022.

**Dr.P. Muthu**, participated in the pre-conference workshop on Biomedical Engineering and Computing Technologies (ICBECT)22, organized by SRM Institute of Science and Technology, Kattankulathur, Tamil Nadu, India, from 21st to 22nd March 2022

**Dr. P. Muthu**, participated in the "Ideation and proposal writing workshop" organized by PALS and Rural Technology Action Group, IIT Madras from 2nd to 3rd March 2022.

**Ms. Abira Bright B**, participated in the "Webinar series on Advances in Bio-sensing Technologies", organized by Department of Biomedical Engineering, SRM Institute of Science and Technology, Kattankulathur, Tamil Nadu, India, from 17th to 18th February 2022

**Ms. Abira Bright B**, active participated in a session on "The best practice to archive research references using mendeley cite" organized by Researcher's Forum, College of Management, SRM Institute of Science and Technology, Kattankulathur, Tamil Nadu, India, held on 24th February 2022.

**Ms. Abira Bright B**, participated in the pre-conference workshop on "Machine learning and deep learning of medical image data analysis", (ICBECT'22), organized by SRM Institute of Science and Technology, Kattankulathur, Tamil Nadu, India, from 21st to 22nd March 2022

**Mrs. P. Lakshmi Prabha**, participated in 40 contact hours training program on "Virtual, Training Program, Artificial Intelligence", SRM Institute of Science and Technology, Kattankulathur, Chengalpattu, Tamil Nadu, India from 28th March 2022 to 25th April 2022

**Ms. Febina J**, participated in "The Patent School Workshop" organized by FABLAB, SRM Institute of Science and Technology, Kattankulathur, Chengalpattu, Tamil Nadu, India from 7th to 9th April 2022

**Ms. Devaki**, participated in the pre-conference workshop on Biomedical Engineering and Computing Technologies (ICBECT'22), organized by SRM Institute of Science and Technology, Kattankulathur, Tamil Nadu, India, from 21st to 22nd March 2022

**Ms. Abira Bright B**, contributed as a volunteer in the International Conference on Biomedical Engineering and Computing Technologies (ICBECT'22), organized by Department of Biomedical Engineering, SRM Institute of Science and Technology, Kattankulathur, Tamil Nadu, India, from 23rd to 25th March 2022

**Ms. V. Devaki**, contributed as a volunteer in the International Conference on Biomedical Engineering and Computing Technologies (ICBECT'22), organized by Department of Biomedical Engineering, SRM Institute of Science and Technology, Kattankulathur, Tamil Nadu, India, from 23rd to 25th March 2022

**Ms. V. Devaki**, participated and presented the paper entitled "A pilot study on reliability of using photoplethysmograph compared to Electrocardiograph" in Dr. Paarivendhar Research Colloquium" organized by SRM Institute of Science and Technology, Kattankulathur, Tamil Nadu, India, from 24th to 26th March 2022

**Gouri Lakshmi Radhakrishnan, Atul John Abraham, Melvyn Mathews, Varshini Karthik** presented the paper entitled "Cost effective, 3D printed bionic arm mechanical design controlled by electromyographic signals", in 10th International Conference on Contemporary Engineering and Technology 2022, organization of science and innovative engineering and technology (OSIET) Chennai, Tamil Nadu, India in association with Prince

Shri Venkateshwara Padmavathy Engineering College Prince Dr. K. Vasudevan College of Engineering and Technology during 21st and 22nd May 2022.

**Sameera Fathimal M, Jeya Prabha, S. P. Angeline Kirubha**, presented the papers entitled: "Eye motion analysis using computational fluid dynamics" and "An alternative method for non-invasive glucose detection using ftir spectroscopy" in the 10th International Conference on Contemporary Engineering and Technology 2022, organization of science and innovative engineering and technology (OSIET) Chennai, Tamil Nadu, India in association with Prince Shri Venkateshwara Padmavathy Engineering College Prince Dr. K. Vasudevan College of Engineering and Technology during 21st and 22nd May 2022.

**Sanika Prakash, Srija S, D Ashokkumar, Varshini Karthik** presented the papers entitled: "Kinematic analysis on specific joints during practice of sun salutation yoga postures" and "Real-Time Motion Analysis of MiddleAged and Aged people using IMU sensor" in 6th International Conference on Intelligent computing and control systems (ICICCS 2022), organization of Vaigai College of Engineering, Madurai, Tamil Nadu, India from 25th to 27th May 2022.

**Jeya Krishnan, A. K. Jayanthi**, participated and presented a paper titled: "Emotion Recognition from EEG signals using GRU and LSTM Recurrent Networks", in National Conference on Recent Research in Advanced Computing-22, organized by Department of Computer Science and Engineering, SRM Institute of Science and Technology, Ramapuram, Chennai, Tamil Nadu, India, on 27th March 2022

**Hariraj**, presented a paper titled: "Preparation of nanocomposite for orthopedic implant" in International Conference on latest trends in sciences, engineering and technology (ICLTSET'22), organized by Karpagam Institute of Technology, Coimbatore, from 21st to 22nd May 2022 2022.

**Mrs. A. Bhargavi Haripriya**, attended the webinar series on "Bridging the gap between Engineering & Medical Domains", organized by IEEE EMBS Bangalore section with EMBS Manipal and RIT chapters, from 28th March to 1st April 2022

**Mrs. A. Bhargavi Haripriya**, presented a paper titled: "Wearable Gadget For Tracking Fetal Movement" in the 8th International Conference on Latest Trends in Science, Engineering and Technology (ICLTSET'22) organized by Karpagam Institute of Technology, Coimbatore to be held on May 20-21, 2022.



**Dr. A. K. Jayanthi**, participated and successfully completed a six days online Faculty Development Program on "Machine Learning & Optimization Techniques using MatLab", organized by the department of Electronics and communication Engineering, SRM Institute of Science and Technology, Vadapalani, Chennai, Tamil Nadu, India from 23rd to 28th May 2022.

**Syeda Mushrifa, Dr. Vani Damodaran**, presented a paper titled "IOT based smart fitness Tracker" in the TNSCST sponsored 8th International Conference on Latest Trends in Sciences, Engineering and Technology (ICLTSET22) organized by Karpagam Institute of Technology, Coimabtoe, Tamil Nadu, India, held on 20th and 21st May 2022

**Dr. Ashwin Kumar N**, participated in the Faculty Development Program entitled "Modern Trends of organic-inorganic hybrid functional materials and their prospective in Energy and Environmental applications (MOIHFE-2022)", organized by the department of chemistry, SRM Institute of Science and Technology, Kattankulathur, Tamil Nadu, India from 9th to 16th May 2022.

**Dr. D. Kanchana**, participated in Faculty Development Program on "Holistic Development and Outcome Based Education in the light of NEP-2020" organized by University of Engineering & Management (UEM), Jaipur, India from 13th to 19th June 2022.

**Keyur Zanzmera, T. Jayanthi, Selvamani Perumal**, presented paper "Automated diagnosis of cataract using auto refractometer" In International Conference on Advanced Communication Control & Computing Technology (ICACCCT-2022), Saveetha School of Engineering held on 28th June to 30th, 2022.

**Dr. Vani Damodaran**, reviewer of the 8th International Conference on Electronics, Computing and Communication Technology, IEEE Connect, organised by IEEE Bangalore section from 8th to 10th July 2022.

**Dr. T. Jayanthi**, successfully completed the 5S @ Workshop Program organized by Tamil Nadu Apex Skill Development Centre for Logistics on 14th June 2022.

**Mrs. Hema Brindha M**, participated in the Workshop "How is Animal Cell Culture Done", organized by Department of Genetic Engineering, SRM Institute of Science and Technology, Kattankulathur, Chennai, Tamil Nadu, India held on 30th April, 2022.

**Ms. Ahalya R. K**, attended the 5 day short term online program on "Recent Advances in Biomedical Signal & Image Processing" organized by department of Biotechnology and Medical Engineering, National Institute of Technology Rourkela, sponsored by the science and engineering research board, DST, Government of India from 30th May to 3rd June 2022.

**Ms. Ahalya R K**, participated and successfully completed a six days online Faculty Development Program on "Machine Learning and optimization techniques using MatLab" organized by SRM Institute of Science and Technology, Vadapalani Campus, Chennai, Tamil Nadu, India, from 23rd to 28th May, 2022.

## STUDENT PARTICIPATION & CONTRIBUTION

**Ms. T. Dharsini** (Reg.No.RA2011013010023), B.Tech BME I year student deemed knowledgeable about SEO and capable of optimizing a website to perform well in search engines. Valid until 31st December 2022.

**Ms. Harshini G** (Reg.No.RA2011013010023), B.Tech BME I year student deemed knowledgeable about SEO and capable of optimizing a website to perform well in search engines. Valid until 31st December 2022.

**Vijay Niranjana S G** (Reg.No. RA1911034010030), B.Tech ECE-BME III year student participated in One day workshop on "Research at Undergraduate Level: Importance, Benefits and Challenges", by Chennai Institute of Technology, Tamil Nadu, India on 28th January 2022.

**Vijay Niranjana S G** (Reg.No. RA1911034010030), B.Tech ECE-BME III year student participated in Webinar on "Mindmap to Unleash Your Brain's Creativity", conducted by AARUSH TEAM, SRM Institute of Science and Technology, Kattankulathur, Tamil Nadu, India on 12th January 2022.

**Vijay Niranjana S G** (Reg.No. RA1911034010030), B.Tech ECE-BME III year student participated in Webinar on "SRM Success Stories 2.0 (Day 2)", conducted by Directorate of Alumni Affairs (DAA), SRM Institute of Science and Technology, Kattankulathur, Tamil Nadu, India on 23rd January 2022.

**Vijay Niranjana S G** (Reg.No. RA1911034010030), B.Tech ECE-BME III year student participated in Webinar on "Career Opportunities in VLSI and Embedded Systems industry", conducted by Department of Electronics and Communication, SRM Institute of Science and Technology, Kattankulathur, Tamil Nadu, India on 27th January 2022.

**Vijay Niranjana S G** (Reg.No. RA1911034010030), B.Tech ECE-BME III year student participated in Webinar on Biotech SAP - Alumni Conclave meet. ("Taking neuroscience from Chennai to Chicago: A look into research mobility"), conducted by Department of Biotechnology, SRM Institute of Science and Technology, Kattankulathur, Tamil Nadu, India on 28th January 2022.

**Vijay Niranjana S G** (Reg.No. RA1911034010030), B.Tech ECE-BME III year student participated in Webinar on "Placement Training in association with the T.I.M.E", conducted by Department of Electronics and Communication, SRM Institute of Science and Technology, Kattankulathur, Tamil Nadu, India on 29th January 2022

**Prinith Kaveramma U P** (RA2112015010011), M.Tech-BME I year student participated in the "Faculty Development program on Smart Materials for Medical Technology" Virtually organized by the Department of Biomedical Engineering, SRM Institute of Science and Technology, Kattankulathur, Chennai, Tamil Nadu, India from 17th to 22nd January 2022

**Mr. Lalith Kumar S J** (Reg.No.RA1911034010019), B.Tech ECE-BM student, attended a Masterclass on "World Called Web 3.0" with Rajan Gupta hosted by Plaksha Technology Leaders Program on 27th January 2022.

**Ms. Lekhana M** (Reg.No.RA2011013010066), B.Tech BME II year student participated in the "Faculty Development program on Smart Materials for Medical Technology" Virtually organized by the Department of Biomedical Engineering, SRM Institute of Science and Technology, Kattankulathur, Chennai, Tamil Nadu, India from 17th to 22nd January 2022.

**Ms. Harshini G** (Reg.No.RA2011013010009), M.Tech-BME I year student participated in the event Western Singing & Fashion. Won 1st place in Western Singing, during Thirunal'21 (Virtual Live event), organized by SRM Institute of Science and Technology, Kattankulathur, Tamil Nadu, India on 24th January 2022.

**Ms. Gilbert L Sangu** (Reg.No. RA2112015010019),

M.Tech-BME I year student Won Gold Medal for presented a paper entitled "Designing of an orthosis for flat feet person" in Research Day 2022, organized by SRM Institute of Science and Technology, Kattankulathur, Chengalpattu, Tamil Nadu, India on 28th February 2022.

**M. Tech-BME I Year students** - participated in the International Conference on Biomedical Engineering and Computing Technologies ICBECT 2022, organized by the Department of Biomedical Engineering, SRM Institute of Science and Technology, Kattankulathur, Tamil Nadu, India from 23rd to 25th March, 2022.

**Gloria Felix Nkondo** (Reg.No. RA2112015010020), participated in Three days hands-on workshop on "Application of Machine Learning & Deep Learning in Electrical Engineering", organized by Department of Electrical & Electronics Engineering, SRM Institute of Science and Technology, Kattankulathur, Chengalpattu, Tamil Nadu, India from 17th to 19th March 2022.

**Jeevitha K** (Reg. No. RA2112015010017), JANANI M A (Reg.No. RA2112015010007), GLORIA FELIX NKONDO (Reg.No. RA2112015010020), participated in the Guest Lecture on "Nanomaterials for Tissue Regeneration", organized by Department of Biomedical Engineering in association with ISTE Student Chapter, KPR Institute of Engineering and Technology, Chennai, Tamil nadu, India held on 15th March 2022.

**Meenakshia Chaterjee** (Reg.No.RA2011013010038), B.Tech-BME II year student won Gold Medal in National Level Indian art Contest organised by the Government of India, MSME, 2022.

**Meenakshia Chaterjee** (Reg.No.RA2011013010038), B.Tech-BME II year student Winner in creative art "Sculptura" organised by Directorate of Students Affairs, SRMIST, Kattankulathur, Tamil Nadu, India on April, 2022

**Meenakshia Chaterjee** (Reg.No.RA2011013010038), B.Tech-BME II year student Runner up Style Unicorn "OME online mega event" organised by Directorate of Students Affairs, SRMIST, Kattankulathur, Tamil Nadu, India on April, 2022

**Syeda Mushrif** (Reg.No. RA2012015010016), participated and presented the paper "Voice Guidance Smart Assistive Cane for Visually Impaired" in the International Conference on Biomedical Engineering and Computing Technologies ICBECT 2022, organized by the Department of Biomedical Engineering, SRM Institute of Science and Technology, Kattankulathur,

Tamil Nadu, India from 23rd to 25th March, 2022.

**Ms. Gloria F Nkondo** (Reg.No.RA2112015010020), M.Tech-BME I year student participated as a delegate in the Virtual CME "B-Kon 2022", updates in clinical pathology, organized by the Department of Pathology, Government Medical College, Kottayam, Kerala, India on 9th April 2022

**Ms. Gloria F Nkondo** (Reg.No.RA2112015010020), M.Tech-BME I year student participated as a delegate in the Virtual CME "M-Connect IT solution Webinar", organized by Mindray, India on 2nd April 2022

**Ms. Gilbert Sangu** (Reg.No.RA2112015010019), M.Tech-BME I year student , participated in Value added program "Quality principles in everyday life", organized by College of Management, SRM Institute of Science and Technology, Kattankulathur, Tamil Nadu, India from 23rd April 2022 to 28th May 2022.

**Mr. Jeffry J** (Reg. No. RA2112015010022), M.Tech-BME I year student Best paper Award for presented a paper entitled: "A comprehensive study on respiratory parameters using Bluetooth enabled multilayered COVID mask: A preventive measure" in the International Conference on Biomedical Engineering and Computing Technologies (ICBECT22), organized by Department of Biomedical Engineering, SRM Institute of Science and Technology, Kattankulathur, Tamil Nadu, India, from 23rd to 25th March 2022

**Mr. Sathyamoorthy B** (Reg.No.RA2012015010003), M.Tech-BME II year student presented a paper entitled "Detection of facial emotion using deep learning techniques" in the 2nd International Conference on Research Electronics Engineering and Communication Techniques (ICREACT'22), organized by SRM Institute of Science and Technology, Vadalapani Campus, Chennai, Tamil Nadu, India during 2nd and 3rd May 2022.

**Priya Dharsini** (Reg.No. RA2011013010023), B.Tech-BME II year student participated in the workshop on "Train to Excellence", organized AIESEC in Chennai, Tamil Nadu, India on 9th May 2022.

**Moulisha** (Reg.No. RA2011013010076), B.Tech-BME II year student participated in the workshop on "Train to Excellence", organized AIESEC in Chennai, Tamil Nadu, India on 9th May 2022.

**Mr. Soorya Raman** (Reg.No.2011013010003), B.Tech-BME II year student participated in Football/Badminton tournament, organized by Department of computing Technologies, SRMIST, Kattankulathur, Tamil Nadu, India held between 19th

May and 21st May 2022.

**Krithika K,** (Reg. No. RA2011013010007), B.Tech-BME II year Won 2nd place in Foodart in the event of "FOOD UTOPIA 2022" organized by Crescent food Biotech Association and School of Life Sciences & Hi-rise Food Tech Lab, B.S Abdur Rahman Crescent Institute of Science and Technology, Vandalur, Chennai from 6th to 7th 2022.

**Meenakshi Chatterjee** (Reg.No. RA2011013010038), B.Tech BME II year won 1st place in Fashion Show, Impromptu fashion show winner - Randevouz 2k22.

## GRANTS & FUNDING

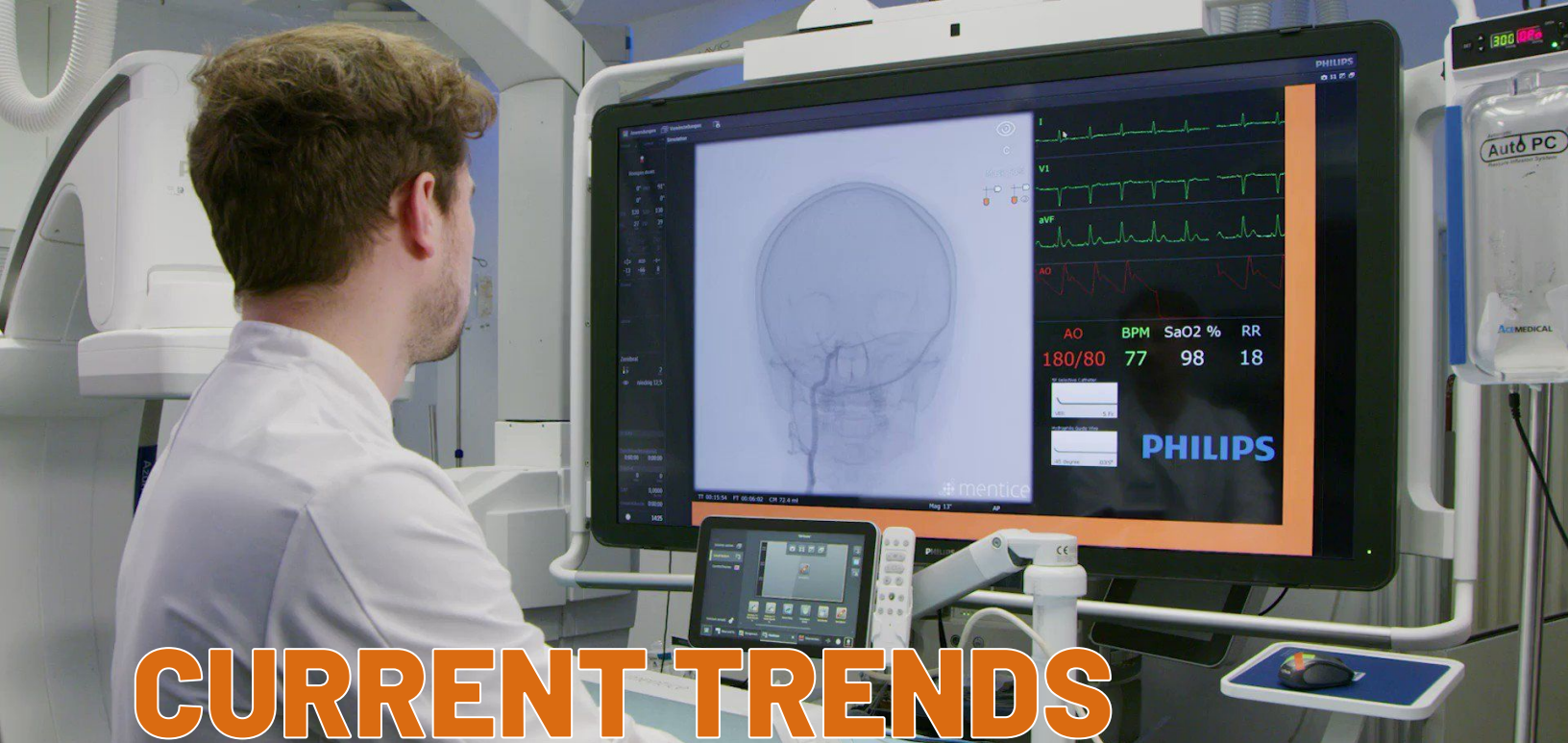
**Dr. Varshini Karthik-** Module Investigator for Wireless Module headed by Dr. T.Rama Rao , titled: Unobtrusive measurement of vital physiological parameters for every passenger inside the automobile using sensor fusion technology' as a part of DST - PURSE ( Total sanctioned Amount: 14 Crores)

**Dr. S. P. Angeline Kirubha-** Proposal Submitted: S. P. Angeline Kirubha (PI), Dr. U. Snehalatha (CO-PI) - Tamil Nadu State Council for Science and Technology; Project Title: "An Optical Approach for Bloodless, In-Vitro and Non-Invasive Glucose Monitoring", Budget: 2,84,000 INR;

**Dr. T. Jayanthi** - Proposal Submitted in BIRAC-PACE Scheme' Portable Thermal Imager for Diagnosis of dry eye syndrome' in collaboration with Forus Health, Temporary reference number of the proposal is BT/TEMP8145/PACE-26/22.

**Dr. Ashwin Kumar N** - Proposal submitted to SERB under the scheme Core Research Grant as Co-PI project titled "Design and Development of Plasmonic Immunosensor test kit".

**Dr. Ashwin Kumar N-** CRG Proposal submitted on the title "HYBRID X-RAY IMAGING OF AN INJECTABLE NANOPROBE-IN-GEL FOR OSTEOARTHRITIS CARTILAGE MONITORING IN KNEE"



# CURRENT TRENDS

## *in Medical Simulation*

In today's world, simulations play an important part of curriculum in across various fields around the world. During the last few decades there has been a dramatic increase in the use of medical simulation. This teaching-getting to know technique is presently the principal means used in medical education.

Endovascular neurosurgery is now a subspecialty which continues to gain prominence in healthcare prominently. With increased incidents of vascular disease especially stroke due to changes in lifestyle, the requirement for minimal invasive provision for vascular disease is on the rise. Some of these cases require only routine surgical intervention, without the necessity for the use of endovascular techniques. However, with the growing need for endovascular procedures, early high-quality training for trainees is now a crucial part of medical education.

Simulation based training is now growing into a very effective alternative to cadaveric and other patient-based trainings. Applying theoretical knowledge to real-life procedures without hands-on real patient exposure is problematic. So, a growing number of healthcare systems and societies globally are adopting virtual and flow model simulation to improvise the effectiveness of their regular teaching methods.

Clinical simulation promotes improvement of psychomotor skills, assist to lessen the number of incidents that are attributed to mistakes in scientific practice. Hence 'Simulation' as an essential teaching method to optimize the fellows' learning by delivering high-quality training and providing a safe, immersive, and realistic learning environment. Simulation based medical education has a strong theoretical foundation and is going to play a vital role in training of medical practitioners. It

is now an inevitable methodology both in undergraduate curricula and in ongoing medical education.

Mentice VIST is one of the virtual patient platform that converts the angio suite into a safe and radiation-free skills acquisition platform that enables the trainees to become familiar with the real equipment and the clinical environment. The inclusion allows trainee to train on special learning outcomes, advanced processes, look forward the unexpected, and repeat cases specific to the patient.



**AUTHOR:** Mr. Biju Shalvin Y. J.  
(Alumni)

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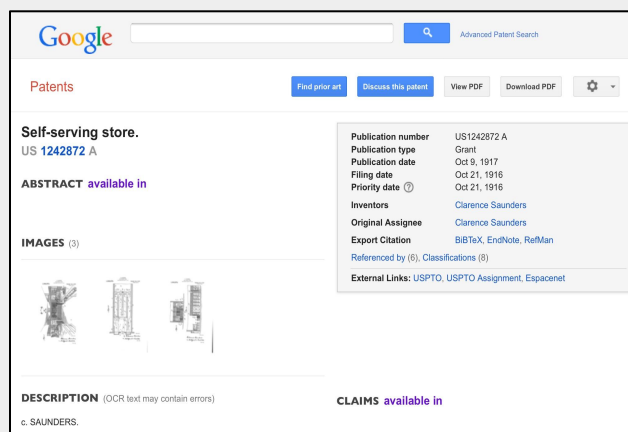


# IGNORANCE OF INTELLECTUAL PROPERTY OR WILLFUL BLINDNESS?

EXPLORING WHY PATENT SEARCH IS A GOOD STRATEGY TO ADOPT

Academia patenting or spin offs or academic entrepreneurship have recently gained immense interest. Universities are the hubs of knowledge and in the open research model, these are often being tapped by most of the commercial firms and many entities to develop wide range of industrial applications. Passing off knowledge had been a prime motto fading off the system of patents in such a scenario. The system of patenting had been picking up its pace recently due to many factors among which the emergence of new technologies, awareness on intellectual property, incentivising the inventors, the National Innovation & Startup Policy 2019 are a few to be listed. However, further development of patenting activities at academia level is more susceptible to deterrents as the motivation and knowledge to patent search or the patent writing processes are still time consuming and need a bit deeper insight and understanding compared to publishing in scientific journals. On the other hand, few myths ruling the patent space pose a bottleneck to most of the academicians keeping them away from patenting.

Patents are the assets that one could earn investing their intellect, however, in order to invest time, money and effort a basic analysis of investing wise is a much-demanded step. Patent Search is one such proven process that backs up an invention and can protect one from saving their time, money and effort in a particular invention. Unfortunately, due to lack of knowledge on how powerful insights a good patent search can give, it is considered as a routine process which in most of the cases is optional that the inventor or the academic institution perceives to be. While awareness or ignorance of understanding the potential of patent search stands out to be one reason for weaker patents; willful ignorance, considering the costs or the time involved in patent searches pose another big problem that end up resulting more patent filings than the potential patent grants. Willful blindness in conducting proper patent searches lead to patents that are equally open to unforeseen litigations or infringements and are always difficult to be enforced.



Sample image depicting a patent search performed using Google Patent Search.

While patent searches are powerful insights right from preventing the reinvention of the wheel, to helping understand whether the given idea is really an invention or a mere discovery, to providing us a proper understanding of prior art, to helping us navigate our idea in a litigation free manner. On the other hand, a good patent search is often tricky and time consuming to be an effective one. In addition, the legal implications that construed, including the patent value or the coverage of the patent claims and the strategic decisions accompanying the geographical areas of coverage could be well understood in light of a good effective patent search.

While there are many resources that one could resort to, common DIY source for a quick patent search include google patent, patent scope etc to the ones that are used in industry, viz., Clarivate database etc. Professional patent searching is both a science and an art that demands technical experts trained in the domain of patent law to understand the intricacies and is the latest emerging career options as well.

**AUTHOR:** Ms. Vallapu Madhuri (Alumni).  
Senior Manager - Innovation Hub & Operations,  
Nutrify Today.

# COLLABORATIVE WORK & RESEARCH

## FACULTY PARTICIPATION IN INTERDISCIPLINARY RESEARCH

**Dr. Ashwin Kumar N** - Collaboration work with vTitan Corporation Limited, has offered us three industrial standard AccuFlow systems, for biomedical research

**Ms. G. Anitha**- Expert Member for the work - Protection circuit design for EV subsystems- EV sub system development part for DST PURSE project (PI- Dr. C. Bharathiraja)

**Dr. Varshini Karthik, Dr. S. P. Angeline Kirubha, Dr. P. Muthu**, Presented Project Proposal on "Transabdominal Ultrasound Imaging system for assessing GI tract of larger animals", on 27-04-2022 at Kerala Government Secretariat, had discussion with the Honorable Minister, Chinchu Rani, Minister for Animal Husbandry, Dairy Development, Milk Co-operatives, Zoos, Kerala Veterinary & Animal Sciences University, Government of Kerala. - Initiative taken by SRMIST alumnus Dr. Rakesh Ramachandran, state Lead (Kerala), NTEP- JEET 2.0.

**Dr T. Jayanthi** - Start-up proposal 'Sensory Relax' has been approved for incubation at IITM Incubation Cell (and HTIC incubator). Team members Dr. Emilda Ezhil John, Associate Professor, Dept of Clinical Psychology, SRM medical college hospital and research center and Dr. K.A Sunitha, Associate Professor and Head, Electronics and Instrumentation department, SRM IST.

**Dr. Varshini Karthik** - SATU Project: Selected as the Principal Investigator (PI), for the project entitled "Dysphagia and Silent Aspiration Monitoring for Patients with Neurological Disorder Using Pharyngeal Deglutitive Biomechanics" in Collaboration with Co-Principal Investigator(s)(Co-PIs) Malathy C, SRMIST, Chai-Hsin Chen, Kaohsiung Medical University & Hemamalini Venkatesan, SRMIST.

**Dr. A. K. Jayanthi** - SATU Project: Selected as the - Co-Principal Investigator(s) (Co-PIs) -for the project entitled "Oral Cancer Diagnosis with Curriculum Learning" in Collaboration with Principal Investigator (PI) Chee Sun, Liew, Sansanee Auephanwiriakul, Chiang Mai University, and Lee Peng Karen-Ng, University of Malaya

**Dr. U. Snehalatha** - SATU Project: Selected as one of the CO-PI for the project entitled "CNN-LSTM Based Deep Learning System For Covid-19 Prediction And Diagnosis" in Collaboration with Dr.T.Senthil Kumar, SRMIST.

**Dr. U. Snehalatha** - SATU Project: Selected as one of the CO-PI for the project entitled "Artificial Intelligence (AI) based health care solutions for communicable diseases" in Collaboration with Dr. Annapurani, Panaiyappan.K, SRMIST.

**Dr. U. Snehalatha** - SATU Project: Selected as one of the CO-PI for the project entitled "Explicating the relationship of patella position and quadriceps muscles strength, knee joint flexibility, and postural balance, as a cause of pain in patients with knee osteoarthritis." in Collaboration with Dr. Zulkarnain, Jaafar, University of Malaya.

**Dr. Kathirvelu D** - SATU collaborative project with Universitas Airlangga Entitled Impact of the development telemedicine health services on the existence of conventional doctors in southeast asia regional countries in the era of industrial revolution 4.0.

**Dr.P.Muthu**, (CO-PI) for the Research Project entitled "Computational Model Based on Wearable Sensors and Artificial Intelligence to Analyse Critical Factors and Avoid Injuries from Full Body Workouts", under 2022 SATU Joint Research Scheme (JRS) in collaboration with Dr. Elango, UCSI University, Malaysia.

**Dr.P.Muthu**, (CO-PI) for the Research Project entitled "Predict the risk of heart disease based on Echocardiography Classification using Hybrid Deep Learning Model", under 2022 SATU Joint Research Scheme (JRS) in collaboration with Dr. Pantea, Universiti Sains Malaysia.

**Dr.P.Muthu**, (CO-PI) for the Research Project entitled "Automated Detection and Classification of Leukemia using Deep Learning", under 2022 SATU Joint Research Scheme (JRS) in collaboration with Dr. Humaira, University Tunku Abdul Rahman, Malaysia.

**Dr.P.Muthu**, (CO-PI) for the Research Project entitled "Cancer Communication", under 2022 SATU Joint Research Scheme (JRS) in collaboration with Dr. Ching-Feng, Taipei Medical University, Taiwan.

**Dr.P.Muthu**, (CO-PI) for the Research Project entitled "Liquefaction of Plastic Waste to Produce Alternative Liquid Fuel", under 2022 SATU Joint Research Scheme (JRS) in collaboration with Dr.Muhamad Fazly, University of Malaya, Malaysia.

**Dr.P.Muthu**, (CO-PI) for the Research Project entitled "IOT structural health monitoring", under 2022 SATU Joint Research Scheme (JRS) in collaboration with Dr. Soodkhet, Suranaree University of Technology, Thailand.

**Dr. Ashwin Kumar N**, (CO-PI) for the Research Project entitled "Theranostic hybrid nanoparticles for targeted cancer therapy", under 2022 SATU Joint Research Scheme (JRS) in collaboration with - Soracha, Dechaumphai (Thamphiwatana), Principal Investigator (PI), Mahidol University - Rusnah Syahila Duali Hussien, University of Malaya, Kaushik Pal, Indian Institute of Technology Roorkee & Jayapramila Jayamani, Universiti Sains Malaysia

**Dr. Ashwin Kumar N**, (CO-PI) for the Research Project entitled "Cancer Communication", under 2022 SATU Joint Research Scheme (JRS) in collaboration with - Ching-Feng, Chiu, Taipei Medical University, Principal Investigator (PI), Dr. DHANALAKSHMI S, Dr. Latha S, Dr. Muthu P, SRMIST & Joon Ching Juan-University of Malaya

**Dr. Ashwin Kumar N**, (CO-PI) for the Research Project entitled "Development and Characterization of Lipid-Based Nanoemulsion for Psoriasis Treatment", under 2022 SATU Joint Research Scheme (JRS) in collaboration with - Noraini, Ahmad, Principal Investigator (PI), University of Malaya, Nor Saadah Mohd Yusof, Nurdiana Nordin, University of Malaya & Kar Lin Nyam, UCSI University

**Dr. Ashwin Kumar N**, (CO-PI) for the Research Project entitled "Lab on a Chip (LoC) micro total analysis system for point of care (PoC) diagnostic",

under 2022 SATU Joint Research Scheme (JRS) in collaboration with - Yih Bing, Chu, Principal Investigator (PI), UCSI University, A.Vimala Juliet, Jayanthi A K, SRM Institute of Science and Technology, Vinoth Kumar Ponnusamy, Kaohsiung Medical University.

**Dr. Ashwin Kumar N**, (CO-PI) for the Research Project entitled "Nanotheranostic Probing Approach For Precision Targeting Of Hepatocellular Carcinoma And Cancer Stem Cells", under 2022 SATU Joint Research Scheme (JRS) in collaboration with - Soracha, Thamil Selvee, Ramasamy, Principal Investigator (PI), University of Malaya - Ganeshpandian Mani, SRMIST, Ching-Feng Chiu, Taipei Medical University.

**Dr. Ashwin Kumar N**, (CO-PI) for the Research Project entitled "Magneto-microbot for Oil-from-Water Removal", under 2022 SATU Joint Research Scheme (JRS) in collaboration with - JitKang, Lim, Principal Investigator (PI), Universiti Sains Malaysia.

## BOOKS & ACADEMIC PUBLICATIONS

Pavani Rekulapally, Lakshmi Garimella, Saravanan Krishnan, **N. Ashwin Kumar** and S. N. Suresh, Ethnic and Racial Differences in The Pathophysiology of Alzheimer's Disease, Alzheimer's Disease: Recent Findings in Pathophysiology, Diagnostic and Therapeutic Modalities, vol(1), pp 608-659, 2022.

**A K Jayanthi** and **Qaysar Mohi ud din**, "Early Detection of Autism Spectrum Disorder Using Behavioral Data EEG, MRI and Behavioral Data", Assistive Technology Intervention in Healthcare, 1st edition-CRC press, 2022.

Pauline John, **Vani Damodaran**, and Nilesh J. Vasa, "Use of an OCT System in the Short-Wavelength Infrared Region: Applications," in Short-Wavelength Infrared Windows for Biomedical Applications, L. A. Sordillo and P. P. Sordillo, Eds., SPIE Press, Bellingham, Washington, pp. 481-519 (2022), ISBN: 9781510646230.

# STRESS AMONGST STUDENTS

REALIZING, RECOGNISING & REMOVING THE SIGNS OF STRESS IN STUDENTS

Stress is how students respond physically and mentally to transformations, occasions, and during different circumstances in their learning institution. Students encounter stress in various forms and for distinct reasons. Stress can lead to severe issues such as unhappiness and nervousness when created over a period. It is also an element of routine life, and managing stress should be the goal of every individual student. Students can learn the process of governing stress during their studies. The first effort is comprehending agreeably - how to respond in diverse conditions, what induces stress, and how to act when stressed.

Following indications are the signs of key depression among students:

- Unhappiness, uneasiness
- Reduced stamina, tiredness, stalled down situation
- Failure of curiosity or enjoyment in routine actions
- Sleep disruptions
- Hunger and increase or loss of weight
- Sensations of distress, culpability, and hopelessness
- Views of cessation or suicide trials
- Dilemma in focusing, creating judgments & trouble remembering things.
- Grumpiness or exaggerated crying
- Chronic pains and discomforts not justified by other physical circumstances

As per the American Psychological Association, 70% of students were notified of complications in managing stress and tension. Some tips to reduce stress for the students are as follows: Students, with their overloaded timetables, are commonly ignoring proper sleep.



Unfortunately, learning in a sleep-deprived condition places a specific drawback. They become less innovative, encounter learning more problematic, and June even be a risk behind the spin.

One of the most beneficial practices to get stress relief is exercising frequently. Students can exercise into their plans by accomplishing yoga in the dawn, trekking or biking. They can also study for examinations with friends while treading at the gym. Beginning and holding a typical exercise routine all over the lifetime can help to live enjoyable life and relish the energy further.

A speedy mode to relax is to perform breathing exercises. It can be done anywhere to reduce stress in minutes and is highly sufficient for relieving tension before or even during examinations and other times when the pressure probes devastating. Music can help in relieving stress and calm yourself down or stimulate the mind as a suitable stress reliever that can result in numerous mental benefits. Students can harness the usefulness of music by hearing classical music while learning or comforting it with the support of their favourite melodies.

Diet plays a significant role in boosting brain power to increase concentration. Nutritious food intake can act as a stress managing approach and augment learning activity. Enhancing healthy food habits can keep students from encountering diet-related stress and other issues.

Students can generate a system of friends to interact and share thoughts when required. They should be able to believe in themselves and their potential. They should be able to recognise that numerous achievers from deprived stages have enjoyed remarkable victory in life. Students should get satisfied with the best that they perform. They should understand that "Nobody's" perfect. Even if mistakes are perceived, they should recognise that errors can be a good instructor.

Using the time-management tips, students should be able to decide on the work to be done today and wait for the other. It enables the students to recognise their performance based on the priority level and to evade stressful situations.

Rather than being swamped by several targets, creating a checklist and processing them are most acceptable. It helps the students to be compelling and persuasive with time.

Plan for holiday gaps in frequent timings, including amusements and entertaining schedule.

Contacting supportable family members, classmates, and social groups can help with stressful circumstances.

Water has been exhibited to have relaxing effects, causing hydration impact on the body. Ingesting sufficient water is a vital effort in controlling tension. Consuming adequate water can develop sensations for peace of mind among students.

Students can take a hot shower before sleep to make themselves relax.

Students on understanding their capacity limits should evade multiple plannings and registration of additional courses in a tight schedule during their course duration. They should allow breaks to grab their breath whenever they get stressed.

A counsellor can assist in analysing and apprehending the real reason for the stress. Students usually need counselling when they discern that they are not managing scholastic stress, and their academic performance begins to grieve. Students need cognitive help in these stressful conditions before something reaches of threshold level. Furthermore, the students can interact with counsellor to see precise responses that would help in recovering from the stress.

Altogether, when the students are free from stress, the body is physically supported by normal heart rate, blood pressure, muscle relaxation and with enriched oxygen supply to the brain. All these bodily impacts help the students to concentrate satisfactorily and lead to success in their life.



**AUTHOR:** Dr. Muthu P  
Assistant Professor  
Department of Biomedical  
Engineering



# DEPARTMENT HIGHLIGHTS

## MOUs & MENTORING



The Department of Biomedical Engineering has entered into or has commenced proceedings to create tie-ups and MoUs with established companies as well as up-and-coming entrepreneurial establishments such as vTitan Corporation (a subsidiary of Zoho), Happy Reliable Surgeries Pvt Ltd. and academic institutions such as the Kuwait college of Science & Technology.

In addition to industrial collaborations, Dr. Ashwin K has applied to join the Material Next 3.0 Hackathon organized by Tata Steel, as a mentor for the hackathon in association with the Chemical Engineering Department, SRM-IST.

➔ **LEGEND** (top left): Dr. Ashwin Kartik & Mr. Venkatesan, Founder of LEO Healthcare discussing new ventures in point of care diagnostics based on market strategy, market need and approach towards converting research into product during his visit to the department.



➔ **LEGEND** (lower left): Dr. Varshini Karthik, Dr. S. P. Angeline Kirubha, Dr. P. Muthu, Presented Project Proposal on "Transabdominal Ultrasound Imaging system for assessing GI tract of larger animals", on 27-04-2022 at Kerala Government Secretariat, had discussion with the Honorable Minister, Chinchu Rani, Minister for Animal Husbandry, Dairy Development, Milk Co-operatives, Zoos, Kerala Veterinary & Animal Sciences University, Government of Kerala. - Initiative taken by SRMIST alumnus Dr. Rakesh Ramachandran, state Lead (Kerala), NTEP-JEET 2.0.

➔ **LEGEND** (right): Faculty members and the Dean of Medical Research at the vTitan Corporation Limited, discuss possibilities of collaboration and joint ventures during the industrial visit to the Vallanchery branch in the month of January, 2022..



“As is the custom for the department, each semester involves conduction of a variety of technical and alumni events.”

## EVENTS *Organized*

A faculty development program on Smart Materials for Medical technology was organised by Dr T Jayanthi and co-convened by Dr Gnanavel and Dr Ashwin from 17th to 22nd January. On 5th of February, an expert lecture by Dr.Gopi Krishna, Design Lead, Cactus Communication on “Problem solving and ideation – a workshop on Design techniques for science communication”. Another expert lecture was delivered by Mr. Bhiman Chandra Dey, Area Sales Manager & Mr.Vineeth VP , Field application Specialist, Cepheid invited by Dr. Robita on “Molecular Diagnostics – A new paradigm in healthcare” and was held on Feb 11th.

Apart from these, a wide range of guest lectures were conducted in topics ranging from Biomaterials & Nanotechnology to Clinical Laboratory Techniques.



## ALUMNI *Connect*

An alumni connect event was organised on 29th January by Mrs Bhargavi and Mrs Robita titled Coding Career for Biomedical Engineers. The event was presided by our alumna B Krishna Chaitanya, a 2019 graduate who is now a Software engineer in Sigmoid, Bangalore. The Alumni connect was conducted on June 4th on “To analyse or to synthesize -Perspectives on Biomedical Research” by Dr. Varsha, a returning alumna.

This month also saw the Orientation Program, welcoming first year students into the department. The department also organised a Freshers party on 29th to celebrate the first-year students and provide them with an opportunity to showcase their talents. A farewell event was conducted for the departing students of the undergraduate and postgraduate programs of the department. The photos for these events can be seen in the gallery pages.





# LABORATORY INAUGURATION



A new focus of emerging field established this year in Biomedical engineering is "Biomaterials Lab". This lab primarily develops innovative materials and products for biological environment to improve human health. Major themes of the lab focuses on Tissue engineering, Bioimaging, Nanomedicine, Point of Care Diagnostics, Medical implants & Regenerative Medicine. The Biomaterials lab is led by two active researchers of our department are Dr. S Gnanavel and Dr. Ashwin Kumar N.

➔ **LEGEND:** Pictured on the left, is research being carried out by a research scholar under the watchful guidance of a faculty supervisor, at the newly established Biomaterials Laboratory.

## INTERNSHIPS PLACEMENTS & HIGHER EDUCATION

We wish a hearty congratulations to all our students who have secured internships and have been placed in a variety of companies. In this academic year of 2022, 5 students have undertaken internships in companies such as Capgemini, PPDC Agra. 4 students have been offered positions in companies such as High Radius, Electro Rhythms, Byju's, Lead Squared, etc.

We also congratulate the many students who have been accepted into graduate, post-graduate and professional programmes at various educational institutions, both in India and abroad, We wish you the very best as well and are joyful to learn of your success.





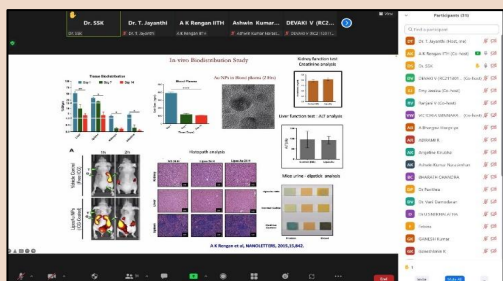
# GALLERY

From seminars and workshops to fresher orientations and farewells, take a moment and walk down the memory lane of the last few months with us through these pictures.



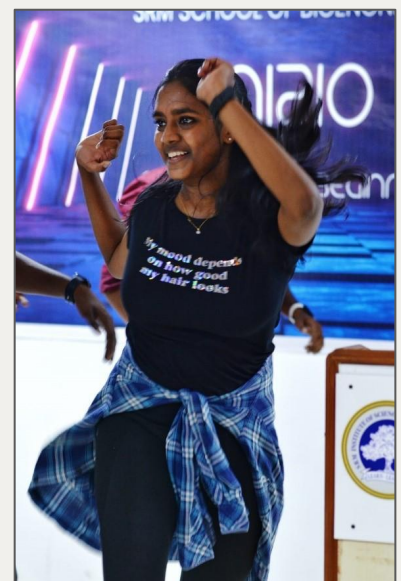
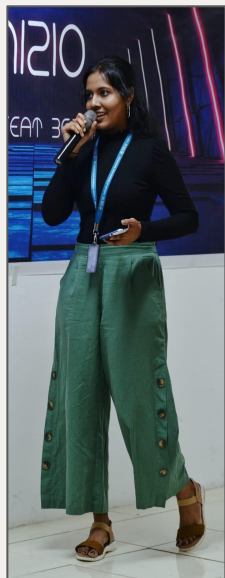


# DEPARTMENT ORGANIZED EVENTS & GUEST LECTURES





# FRESHER INDUCTION & ORIENTATION





# ALUMNI CONNECT & FAREWELL CELEBRATIONS






DEPARTMENT OF BIOMEDICAL ENGINEERING  
AND  
DIRECTORATE OF ALUMNI AFFAIRS

**ALUMNI CONNECT**

"To analyze or to synthesize :  
Perspectives on biomedical research "

04/05/2022 11:00 am

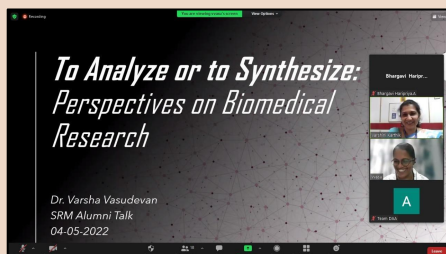
ONLINE ZOOM PLATFORM



ORGANISING COMMITTEE  
Dr. A. Rathinam, Director of Alumni affairs  
Dr. Varshini Karthik, HOD - BME  
Mrs. Bhargavi Haripriya, Asst. Prof - BME  
Mrs. Oinam Robita Chanu, Asst. Prof - BME



**DR VARSHA VASUDEVAN**  
PROJECT CONSULTANT  
ALIEN TECHNOLOGY  
TRANSFER, HYDERABAD  
BME, B.TECH, M.TECH, PHD







**SRM**  
INSTITUTE OF SCIENCE & TECHNOLOGY  
(Deemed to be University u/s 3 of UGC Act, 1956)



**“SCIENTISTS HAVE BECOME THE BEARERS  
OF THE TORCH OF DISCOVERY IN OUR QUEST  
FOR KNOWLEDGE.”**

– Dr. Stephen Hawking

For enquiries & suggestions,  
Email us at: [secy.hod.biomed.ktr@srmist.edu.in](mailto:secy.hod.biomed.ktr@srmist.edu.in)  
Contact us at: 044-27417854

For more information about the department, please visit  
<https://www.srmist.edu.in/engineering/department-of-biomedical-engineering>



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