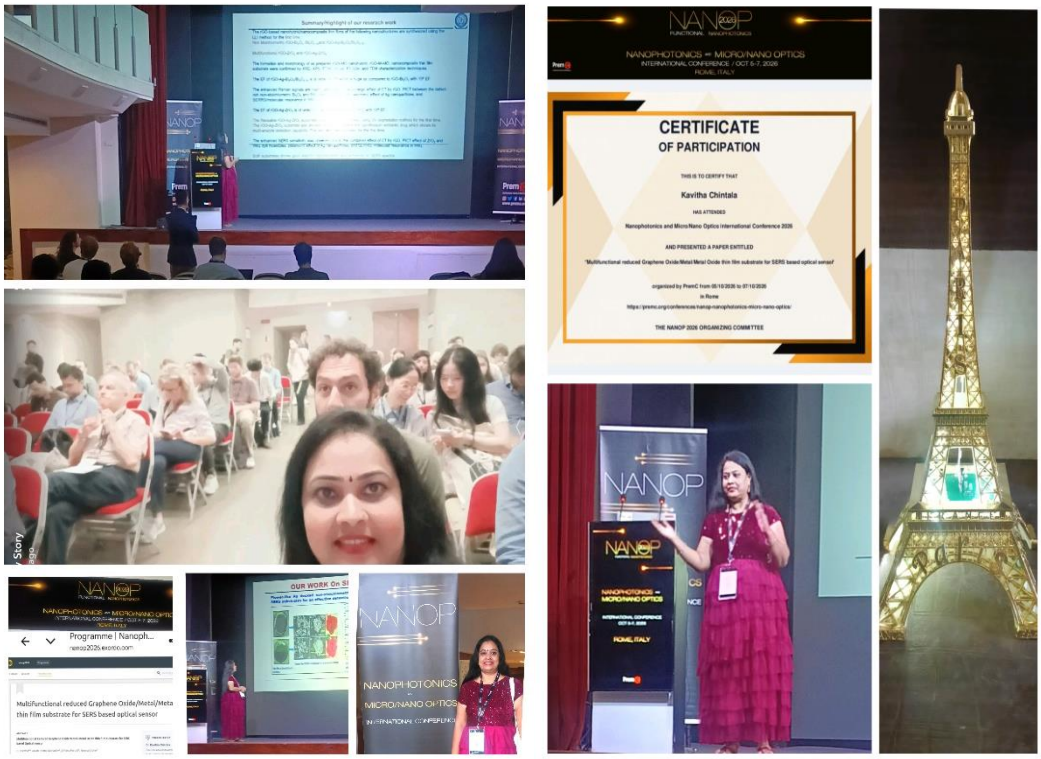
BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT
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Physics Faculty Achievements

2026

1. Dr. C. Kavitha gave oral presentation and attended the Nano photonics and Micro/Nano Optics International Conference 2026 (NANOP-2026) at Rome Italy on 5-7th October 2026.



2. Dr. C. Kavitha's VTU-Ph.D student Dr. Awati Prema Mahadev and Dr. Dhananjaya. N's VTU-Ph.D student Dr. Akshay have successfully defended their



Thesis and received Ph.D certification during VTU-Convocation ceremony on 26th September 2026.

3. Dr. Daruka Prasad completed NPTEL certification course on energy material and devices 2026.

4. Dr. Harish S.A. and Dr. Basavaraju R.B. purchased and installed Thermal evaporation deposition unit, Solar simulator AAA Class, UV-Visible spectrometer in the R&D lab. These equipements were purchased through sponsored projects from AICTE, DST and VGST, 2026.

5. Dr. C. Kavitha presented a poster on Home made affordable super capacitor model and attended at Lalit Ashok, 2-5 august 2026



2025

1. Dr. C. Kavitha attended Bengalore Tech Submit-2025 on 18-20th Nov, 2025 at BIEC, Bangalore





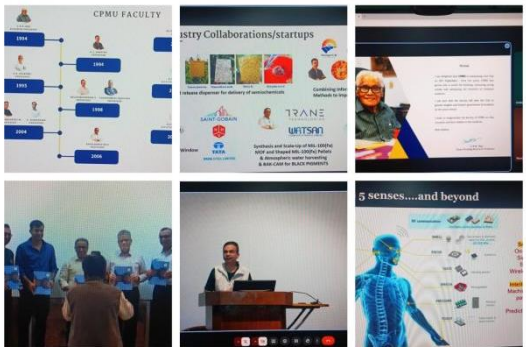






2. Dr. C. Kavitha attended CPMU online alumni meet on 20th Sept 2025 at JNCASR, Bangalore.

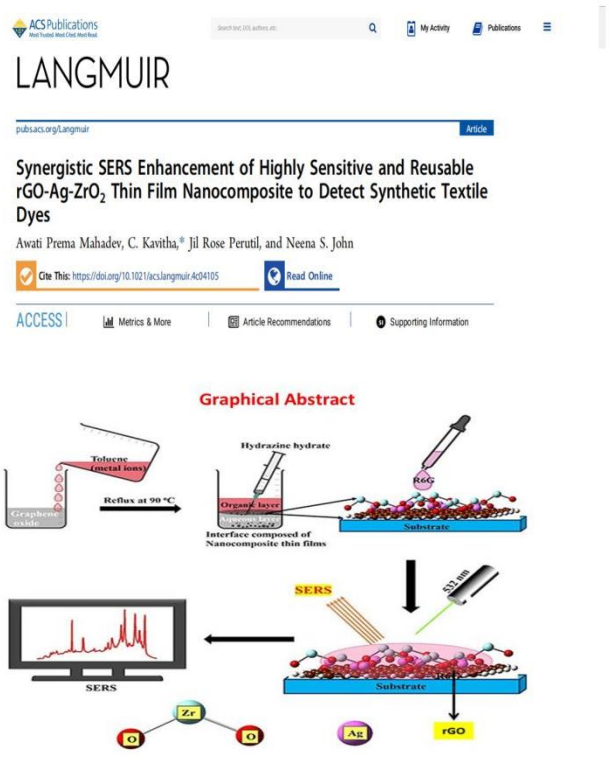




3. Dr. C. Kavitha acted as one of the organizer and chaired the session for "VTU-FDP program on Applied Physics (1st year syllabus 2025 scheme) was held on 30th August 2025 at BMSIT&M



4. Dr. C. Kavitha and her research group published reputed research articles from ACS-Langmuir and Springer Nature-Applied Physics A in the year 2025. the work is on multifunctional optical sensor and supercapacitor.





5. Published two reputed publications from **ACS-Langmuir and RSC Advances**
6. VTU-Ph.D student got best oral presentation at international conf at VIT Chennai
7. Started initiating to fabricate supercapacitor mini prototype.
8. Ph.D student completed pre submission colloquim and initiated thesis submission.
9. BOS at BMSIT&M, BOE at AIT, Bangalore

Dr. C. Kavitha's one of the reputed international research publications is recognized by Department of Science and Technology website from April 23 to **still available** at whats new>S&T articles (2025)

Dr. Dhananjaya

- BoS member for the department of Physics, BMS College of Engineering.
- Chaired the Session at the International conference on computing for sustainability and intelligent future (COMPSIF-2025) held on 21-22 March 2025 at BMSIT&M.
- Chaired the Session at the 2nd International Conference on Applied Research in Engineering Sciences-ICARES2025 held on 20&21st February 2025 at Ramaiah Institute of Technology.

Dr. Daruka Prasad B

1. Resource person for the one-day faculty development program on "Applied Physics" organized by the VTU, in association with VVVE, Mysore held on 30th August 2025.
2. BoS Member for JNTUA college of Engineering, Pulivendula. AP
3. BoS Member at Sri Venkateshwara College of Engineering, Bangalore.
4. Department Advisory Committee member for Ph.D. program at Manipal University, Bangalore
5. Reviewer for the M.Phil thesis submitted to New Castle University, Australia.

Dr. Harish Sharma A

- Presented paper in 2025 **International Thin Films conference (TACT 2025)**

All faculties of Physics department were organized the one-day faculty development program on "Applied Physics" organized by the VTU, in association with BMSIT&M held on 30th August 2025.





One-day faculty development program on **"Applied Physics"** organized by the VTU, in association with BMSIT&M held on 30th August 2025.

Dr. Basavaraju R.B.

- Received Research excellence award from BMSIT&M, Bangalore
- One of the researcher of Top 20% scientist list survey given by Stanford university

2024

10. Dr. C. Kavitha was invited to attend Bangalore Tech Submit 2024 which was held on 19-21 Nov 2024.







11. Dr. C. Kavitha attended and presented a research paper on super capacitor at prestigious Bangalore India Nano conference which was held on 1-3 August 2024.



12. Dr. C. Kavitha attended National Physics Conclave-2024 conference at SRM Institute of Science and Technology on 7-10 Feb 2024. and presented a poster on Binder free supercapacitor.





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SRM

National Physicists' Conclave 2024

(A Premier Gathering of Indian Physicists)

Organized by
Department of Physics and Nanotechnology
SRM Institute of Science and Technology
Kattankulathur – 603 203, Tamilnadu

Certificate of Participation

This is to certify that Mr./Ms/Dr./Prof. **C.KAVITHA, BMSIT&M, Bangalore** has participated and presented a paper entitled **Binder Free, Metal decked rGO/metal oxide hybrid nanocomposite modified stainless electrode for high performance ultra capacitor devices** at the National Physicists' Conclave 2024, organized by SRM Institute of Science and Technology, Kattankulathur, during February 7-10, 2024, in association with Indian Institute of Science (IISc) Bengaluru, Materials Research Society of India (MRSI), IIT Bombay, IIT Tirupati, IIT Hyderabad, IIT Palakkad, IISER Tirupati, Indian Physics Association, Indian Ceramic Society, Indian Science Congress Association Chennai Chapter, co-sponsored by DRDO, IOP Publishing and Applied Physics Letters.

CO-CONVENER
Prof. A. Karthigeyan
Head, Department of Physics and Nanotechnology, SRMIST

CONVENOR
Prof. John D. Thiruvadigal
Chairperson (School of Applied Sciences), SRMIST

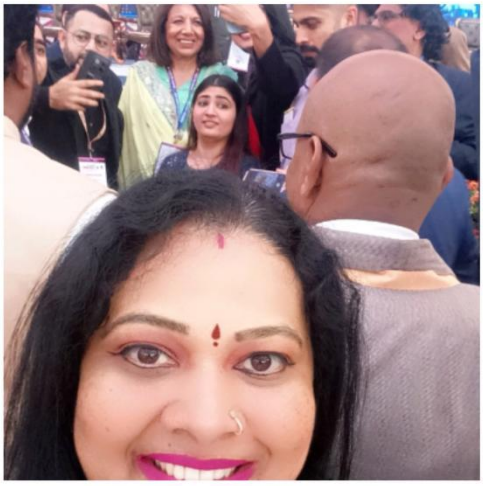
DIRECTOR
Dr. Kiran Mangalampalli
Department of Physics and Nanotechnology, SRMIST

Sanne instruments ants ATOS Applied Physics Letters IOP Publishing PFEIFFER VACUUM

13. Dr. C. Kavitha's interaction with eminent ISRO women Scientist and our own material scientists and outstanding Techonological experts in different scientific and technology conferences.









Dr. Dhananjaya N

Received the best Researcher 2023-2024 award from BMSIT&M.

Dr. Harish Sharma A

- Received Project amount 32,72,641 INR from Anusandhan National Research Foundation-Science and Engineering Research Board-Core Research grant (**ANRF-SERB-CRG**) Ongoing (2024-2027).

Dr. Daruka Prasad B

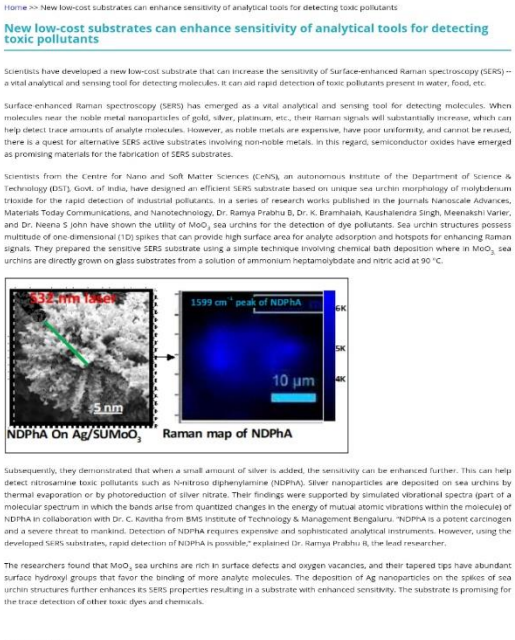
1. Received the best Researcher 2023-2024 award from BMSIT&M.
2. Convener for the one-day faculty development program on "Applied Physics" organized by the VTU, in association with BMSIT&M held on 30th August 2025.
3. BoS Member for JNTUA college of Engineering, Pulivendula. AP
4. Department Advisory Committee member for Ph.D. program at Manipal University, Bangalore.
5. Reviewer for the project proposals submitted at National Science Centre, Poland.

Dr. Chandra Shakher Pathak

Received seed grant of 2 lakhs from BMSIT&M.

2023

14. Dr.C. Kavitha's one of the reputed international research publications is recognized by Department of Science and Technology website from April 23 to still available at whats new>S&T articles.



Home >> New low-cost substrates can enhance sensitivity of analytical tools for detecting toxic pollutants

New low-cost substrates can enhance sensitivity of analytical tools for detecting toxic pollutants

Scientists have developed a new low-cost substrate that can increase the sensitivity of Surface-enhanced Raman spectroscopy (SERS) -- a vital analytical and sensing tool for detecting molecules. It can aid rapid detection of toxic pollutants present in water, food, etc.

Surface-enhanced Raman spectroscopy (SERS) has emerged as a vital analytical and sensing tool for detecting molecules. When molecules near the noble metal nanoparticles of gold, silver, platinum, etc., their Raman signals will substantially increase, which can help detect trace amounts of analyte molecules. However, as noble metals are expensive, have poor uniformity, and cannot be reused, there is a quest for alternative SERS active substrates involving non-noble metals. In this regard, semiconductor oxides have emerged as promising materials for the fabrication of SERS substrates.

Scientists from the Centre for Nano and Soft Matter Sciences (CeNS), an autonomous institute of the Department of Science & Technology (DST), Govt. of India, have designed an efficient SERS substrate based on unique sea urchin morphology of molybdenum trioxide for the rapid detection of industrial pollutants. In a series of research works published in the journals Nanoscale Advances, Materials Today Communications, and Nanotechnology, Dr. Ramya Prabhu B, Dr. K. Bramhaiah, Kaushalendra Singh, Meenakshi Varier, and Dr. Neena S John have shown the utility of MoO_3 sea urchins for the detection of dye pollutants. Sea urchin structures possess multitude of one-dimensional (1D) spikes that can provide high surface area for analyte adsorption and hotspots for enhancing Raman signals. They prepared the sensitive SERS substrate using a simple technique involving chemical bath deposition where in MoO_3 sea urchins are directly grown on glass substrates from a solution of ammonium heptamolybdate and nitric acid at 90 °C.

Subsequently, they demonstrated that when a small amount of silver is added, the sensitivity can be enhanced further. This can help detect nitrosamine toxic pollutants such as N-nitroso diphenylamine (NDPhA). Silver nanoparticles are deposited on sea urchins by thermal evaporation or by photoreduction of silver nitrate. Their findings were supported by simulated vibrational spectra (part of a molecular spectrum in which the bands arise from quantized changes in the energy of mutual atomic vibrations within the molecule) of NDPhA in collaboration with Dr. C. Kavitha from BMS Institute of Technology & Management Bengaluru. "NDPhA is a potent carcinogen and a severe threat to mankind. Detection of NDPhA requires expensive and sophisticated analytical instruments. However, using the developed SERS substrates, rapid detection of NDPhA is possible," explained Dr. Ramya Prabhu B, the lead researcher.

The researchers found that MoO_3 sea urchins are rich in surface defects and oxygen vacancies, and their tapered tips have abundant surface hydroxyl groups that favor the binding of more analyte molecules. The deposition of Ag nanoparticles on the spikes of sea urchin structures further enhances its SERS properties resulting in a substrate with enhanced sensitivity. The substrate is promising for the trace detection of other toxic dyes and chemicals.

Publication links:

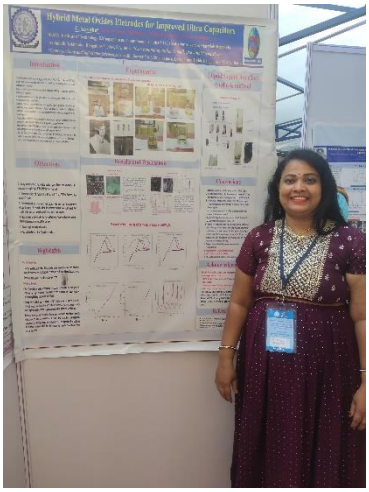
https://doi.org/10.1039/C9NA00115H

https://doi.org/10.1016/j.mtcomm.2022.104995

https://doi.org/10.1088/1361-6528/acbcdb

For more details, contact Dr. Neena S John jsneena[at]cens[dot]res[dot]in

15. Dr. C. Kavitha Presented poster on ultracapacitor research at ECSI-IISc international conference on women in electrochemistry 7-8 April 2023.





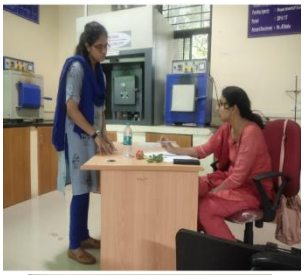
Dr. Daruka Prasad B

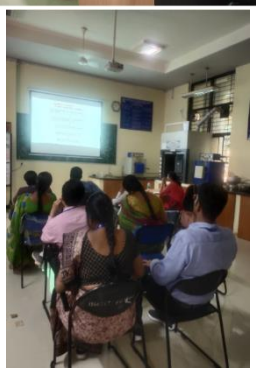
1. BoS Member for JNTUA college of Engineering, Pulivendula.
2. Department Advisory Committee member for Ph.D. program at Manipal University, Bangalore.
3. Reviewer for the project proposals submitted at National Science Centre, Poland.

Dr. Dhananjaya N

16. Under the Supervision Ph. D degree was awarded to Yashodha R from VTU

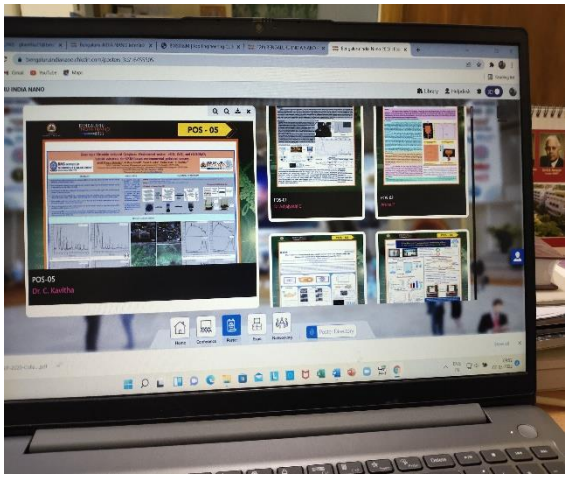
Dr. C. Kavitha conducted VTU-Pre-Ph.D viva voce and open seminar 1 for her interdisciplinary chemistry student on 18th March 2022 and Dr. Dhananjaya also conducted final viva voce exam for his two of his part-time VTU-students.






17. Dr. C. Kavitha attended virtual Bangalore-India Nano-22 conference on 7-8 March 2022 along with student





and presented a virtual interactive Poster.

18. Dr. C. Kavitha Received **outstanding women scientist award** in Materials Scicence at VIWA-2022, International Women Conference at Green Park, Chennai on 5th March 2022.





Dr. Dhananjaya N

19. Under the Supervision Ph. D degree was awarded to Sowmya N and Pratibha S from VTU.

Dr. Daruka Prasad B

20. BoS Member for JNTUA college of Engineering, Pulivendula.
21. BoS Member for JNTUA college of Engineering, Ananthapuramu.
22. Department Advisory Committee member for Ph.D. program at Manipal University, Bangalore.
23. Reviewer for the project proposals submitted at National Science Centre, Poland.

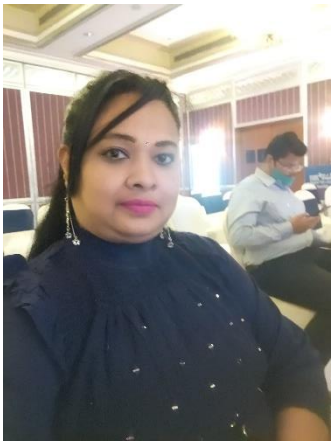
Dr. Basavarau R.B.

- Received VGST-K-FIST-L1 worth Rs.15 Lacs from VGST, GoK.

2021

24. Dr. C. Kavitha received **VGST-K-FIST-L2** sponsored project worth Rs. 20 Lacs by VGST-GOK for the year 2022-2024 and it was announced on august 2021.

25. Dr. C. Kavitha invited to attend Bangalore –Tech Summit inaugural function which was held on 17th Nov 2021.

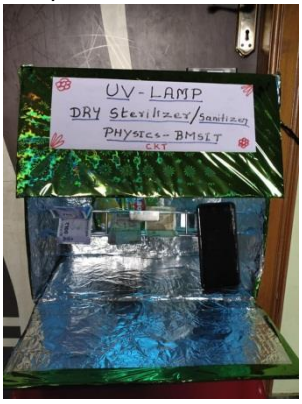



Dr. Daruka Prasad B

26. Delivered the **keynote speech** at National conference on RANN-2021, held at Vidyavardhaka College of Engineering, Mysuru - 570 002, in association with KSTA, Government of Karnataka.
27. BoS Member for JNTUA college of Engineering, Pulivendula.
28. BoS Member for JNTUA college of Engineering, Ananthapuramu.
29. Department Advisory Committee member for Ph.D. program at Manipal University, Bangalore
30. Completed the VTU-RFTT, Research project worth of Rs. 5 Lakhs.
31. Reviewer for the project proposals submitted at National Science Centre, Poland.

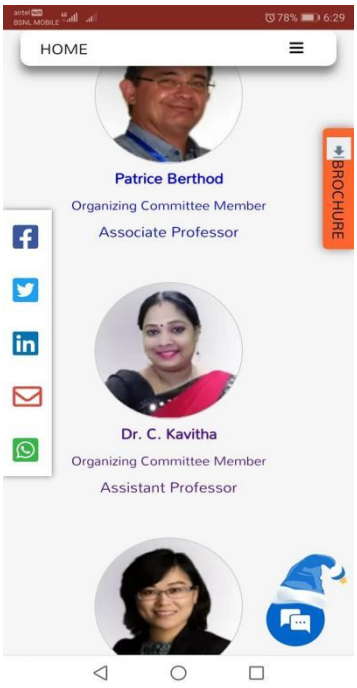
2020

32. Dr. C. Kavitha developed Covid 19 innovative product called " UV-C light based Dry sterilizer and Sanitizer to disinfect all type of Viruses and Bacteria for non-wettable items like currencies, groceries, electronic gadgets, bags, watches, N-95 masks etc. Sept 2020

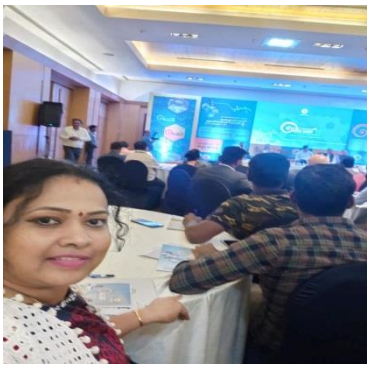




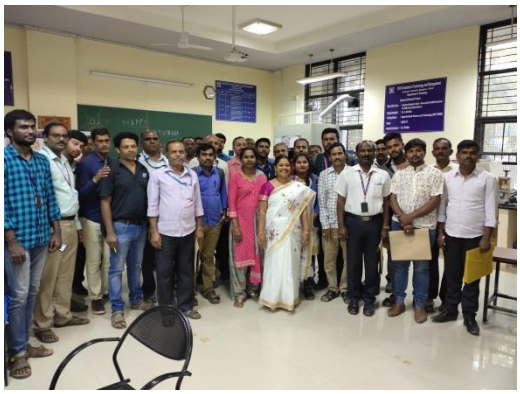

33. Dr. C. Kavitha is invited by University of Lorraine, Vandoeuvre-Lès-Nancy, France to act as Editorial Board Member of the Journal of Material Science and Technology Research Aug(2020).
34. Dr. C. Kavitha is invited as organizing committee member and editorial member for the journal of international conference on material science exhibition and engineering will be conducted at Seol, South Korea. June 2020.



8. Dr. C. Kavitha is invited to attend 11th Bangalore India Nano 2020 curtain raiser event and international conferences 2-4 March, 2020.


9. Dr. Kavitha acted as a resource person for 4 days staff development program on Material Testing and measurement techniques organized by Mech dept, BMSIT&M, Bangalore Jan 2020





10. Dr. C. Kavitha is invited to attend Industry-academic interaction Organized by NMR centre, IISc and JEOL scientific company, Japan. Thanks to eminent NMR Prof. Surya Prakash for inviting us to attend this wonderful workshop. Dec-2019.





11. One of Dr. C. Kavitha's first author Materials Today research articles have been cited by very high impact factor **Nature: Scientific Reports**.**2019.**

