

S. ANANDHAN

Professor & Former Head,
Department of Metallurgical and Materials Engineering,
National Institute of Technology-Karnataka, Surathkal,
Srinivasnagar, Mangaluru – 575025, India
Phone: +91-824-2473762; Mobile: 9663054756
E-mail: anandhan@nitk.edu.in & anandtmq@gmail.com



EDUCATION

	Degree	Year	Subject	University/Institution	Class/Division
1.	B.Sc.	1995	Chemistry	Madurai Kamaraj University, Madurai, India	First class (first rank among 240 students)
2.	M.Sc.	1997	Applied Chemistry	Madurai Kamaraj University, Madurai, India	First class with distinction
3.	M.Tech.	1999	Polymer Technology	Cochin University of Science and Technology, Kochi, India	First Class
4.	Ph.D.	2004	Polymer Science and Technology	I.I.T. Kharagpur, West Bengal, India	N.A.

Research focus

My group works in the following frontier areas of Polymer Engineering and Nanotechnology:

- Advanced Functional Nanofibers (electrospun nanofibers based on inorganic oxides for sensing and catalytic applications, electrospun polymer nanocomposites for energy and biomedical applications)
- Energy Materials (gel polymer electrolytes/separators for Li-ion, Na-ion and Mg-ion batteries)
- Flexible Electronics (piezoelectric nanogenerators for energy harvesting, force/pressure sensors, gas sensors)
- Polymer Nanocomposites (from various polymers and nanofillers)
- Polymer Blends (specialty polymer blends, interaction between polymers)
- Waste Management (recycling of waste polymers, fly ash)

Fellowships of Academies

Admitted to the Fellowships of

- The Royal Society of Chemistry (London, UK) since 7th September 2021
- Indian Chemical Society since 31st May 2019
- Institution of Engineers (India) since 31st August 2017

Awards and Honors

1. National Merit Scholarship for qualifying in the National Talent Search Examination, Government of India (June 1990 – April 1997).
2. Awarded gold medals for securing first rank in both M.Sc. and B.Sc.
3. GATE Scholarship, Government of India (September 1997 – April 1999).
4. Doctoral Research Fellowship, Department of Science and Technology, Government of India (November 2000 – November 2003).
5. Australia-India Council Research Fellowship (for Visiting Research Associate), Australia-India Council, Canberra, Australia (February 2002 – May 2002).
6. Post-doctoral Research Fellowship, Inha University and KOSEF (April 2004 – February 2005).
7. ARCNN-ARNAM fellowship, the University of New South Wales, Australia, July 2006.
8. Fast Track Award for young scientists, Department of Science and Technology, Government of India (2012-2015).
9. Best poster award for the poster titled 'Electrospinning of Poly(styrene-co-acrylonitrile)' by T. Senthil and S. Anandhan, First Indo-US conference on Polymers for Packaging Applications, M.G. University, Kottayam, India, March 2012.

10. Best paper award for the paper titled 'Interparticle Interactions and Lacunarity of Mechano-Chemically Activated Fly Ash' by Akshata G. Patil and S. Anandhan, Two Days-International Seminar on Frontiers of Ceramic and Materials Technology for cement Industries, Indian Ceramic Society, Bangalore Chapter and Dept. of Ceramic and Cement Technology, PDA College of Engineering, Gulbarga, Karnataka, November 2014.
11. Innovative thesis award for the B.Tech. thesis titled 'Synthesis of carbon nanostructures through catalytic decomposition of polymer precursors' by Nanjunda Shanmuga Velu and Suchethan Kamath under my guidance, Borealis Corporation, Finland, May 2017.
12. Won the prize for runner up for the idea titled 'Ashes to ashes' in the NITK faculty innovation challenge for Effective Management of Plastic and other Waste, held during Swacchata Pakhwada (An initiative of Ministry of Education, Govt of India) on 13 September 2022.
13. My research paper titled 'A new multifunctional energy harvester based on mica nanosheets-dispersed PVDF nanofabrics featuring piezo-capacitive, piezoelectric and triboelectric effects' has been featured in a cross-journal collection [celebrating the scientific accomplishments of RSC Fellows \(RSC Applied Polymers, DOI: 10.1039/D3LP00080J\)](#).
14. Received invitation to submit an 'invited paper' to the prestigious RSC journal '*Dalton transactions*' in July 2023.
15. Received the IEI young engineer award on Engineers' day (15th Sep. 23) from the Institution of Engineers (India), Mangalore chapter.

International and National Research grants

Total research grants awarded (since 2009): ₹ 8.266 million + US\$ 269,333. Details of research projects are given below:

- **'Additive manufacturing of novel polymers and composites at industrial scale'**
Funding Agency: [National Science Foundation \(USA\)](#) International Research Experience for Students (IRES) grant
Amount: US \$ 269,333
Duration: 4 years (2020-2024)
Role: Co-PI (PIs: Prof. Nikhil Gupta, New York University, USA & Dr. Mrityunjay Doddamani, IIT Mandi)
- **'Mitigating Dendrite Growth Using Engineered Electrolyte Layers for the Development of High Energy Density, Long Cycle Life Lithium Batteries'**
Funding Agency: DST-MES-2018, India
Amount: ₹ 64,43,608
Duration: 4 years (2019-2024)
Role: Co-PI (PI: Dr. A.M.Shanmugharaj, VISTAS, Chennai)
- **'Novel Nanocomposites from bio-degradable polymers and nano-structured fly ash'**
Funding agency: DST-SERB, India (fast track scheme for young scientists)
Amount: ₹ 18,17,000
Duration: 3 years (2012-2015)
Role: PI
- **'Development of Nanofibers from Polymer Nanocomposites by Electrospinning'**
Funding agency: NITK, India (Seed grant)
Amount: ₹ 5,00,000
Duration: 2 years (2009-2011)
Role: PI

PROFESSIONAL EXPERIENCE:

A) Current (or most recent) role

Job Title	Professor in Metallurgical and Materials Engineering
Dates from/to	May 2018 – current (Head of Metallurgical and Materials Engineering from April 2018 – January 2020)

Employer's Name	National Institute of Technology Karnataka	
Employer's Address	Surathkal, Srinivasnagar (P.O.), Mangaluru-575025, Karnataka, India.	
Number of Staff Supervised	<i>directly</i>	<i>indirectly</i>
	27 (as Head of department; totally 16 Academic staff + 11 technical/non-teaching staff)	0
Description of Duties	<p>As Professor</p> <ul style="list-style-type: none"> • Teaching undergraduate (Metallurgical and Materials Engineering) and post-graduate (Nanotechnology and Materials Engineering) programmes • Supervision of research projects in Ph.D., PG and UG levels; • Co-PI of two externally funded research projects • Faculty in-charge of Micro Raman spectrometer at Central Research Facility of the institute • Academic responsibilities: Member of academic senate, member of PhD & PG student selection committee, Chairman of PG project evaluation committee, Chairman of class committee meetings, Professor in-charge of the following labs: Advanced fiber spinning, FTIR and piezoelectric measurement lab, ceramics and polymers lab, SEM lab. • Organizing Secretary of a National conference in 2018 • Examiner of 28 PhD theses from India • Member of doctoral committee for various departments • Convocation committee member <p>As Head of department</p> <ul style="list-style-type: none"> • Chairman of department undergraduate, postgraduate and research committees • Chairman of PhD and PG student selection committee • Chairman of curriculum revision committee • Chairman of academic audit in 2019 • Member of faculty selection committee • Member of staff selection committee • Member of academic senate, member of convocation committee • Member of Board of Studies • Organizing Chair of a National Seminar in 2018 • Established a new Conference Hall with complete infrastructure • Revamped the office of the Head and brought some reforms in the departmental administrative procedures 	

B) Previous role

Job Title	Associate Professor in Metallurgical and Materials Engineering	
Dates from/to	February 2012 – May 2018	
Employer's Name	National Institute of Technology Karnataka	
Employer's Address	Surathkal, Srinivasnagar (P.O.), Mangaluru-575025, Karnataka, India.	
Number of Staff Supervised	<i>directly</i>	<i>indirectly</i>
	0	7

Description of Duties	<ul style="list-style-type: none"> • Teaching undergraduate (Metallurgical and Materials Engineering) and post-graduate (Nanotechnology and Materials Engineering) programmes • Supervision of research projects in Ph.D., PG and UG levels; • PI of an externally funded research project • Academic responsibilities: member of PhD & PG student selection committee, Chairman of PG project evaluation committee, Chairman of class committee meetings, Professor in-charge of the following labs: Advanced fiber spinning, FTIR lab, ceramics and polymers lab. • Examiner of 9 PhD theses from India and abroad • Examiner of 3 Master's theses from UNSW, Australia • Member of doctoral committee for various departments • Convocation committee member
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c) Role prior to B

Job Title	Assistant Professor in Metallurgical and Materials Engineering	
Dates from/to	February 2009 – February 2012	
Employer's Name	National Institute of Technology Karnataka	
Employer's Address	Surathkal, Srinivasnagar (P.O.), Mangaluru-575025, Karnataka, India.	
Number of Staff Supervised	<i>directly</i>	<i>indirectly</i>
	0	7
Description of Duties	<ul style="list-style-type: none"> • Teaching undergraduate (Metallurgical and Materials Engineering) and post-graduate (Nanotechnology and Materials Engineering) programmes • Supervision of research projects in Ph.D., PG and UG levels; • PI of an internally funded research project • Academic responsibilities: member of PhD & PG student selection committee, Secretary of class committee meetings, Professor in-charge of the following labs: Advanced fiber spinning, FTIR lab, ceramics and polymers lab. • Examiner of a Master's thesis from UNSW, Australia • Member of doctoral committee for various departments • Convocation committee member 	

d) Role prior to C

Job Title	Assistant Professor in Materials Science	
Dates from/to	July 2005 – August 2008	
Employer's Name	AIMST University	
Employer's Address	Bedong, Kedah, Malaysia.	
Number of Staff Supervised	<i>directly</i>	<i>indirectly</i>
	0	0

Description of Duties	<ul style="list-style-type: none"> Teaching undergraduate programme in Materials Technology with Management Supervision of research projects in UG level Academic responsibilities: Faculty in-charge of the Materials Characterization laboratory Member of the following committees: quotations and purchase committee; safety and security committee
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e) Role prior to D

Job Title	Postdoctoral Fellow and Lecturer in Textile Engineering	
Dates from/to	April 2004 – February 2005	
Employer's Name	Inha University	
Employer's Address	Incheon, Korea.	
Number of Staff Supervised	<i>directly</i>	<i>indirectly</i>
	0	0
Description of Duties	<ul style="list-style-type: none"> Carried out research on enhancing the physicochemical characteristics of thermoplastic polyurethane/nanostructured clay composites for developing textile fibers for sports and leisure applications. This project was funded by Hyosung Corporation, the second largest manufacturer of Spandex fibers based on thermoplastic polyurethane Offered intensive training to PG and PhD students on ultracryomicrotoming and transmission electron microscopy of polymeric materials Designed and taught a course titled 'Elastomer Science and Technology' to UG, PG and PhD students 	

RESEARCH OUTPUT

Papers in WoS-Indexed International Journals

- S. Anandhan, P. P. De, S. K. De, A. K. Bhowmick*, 'Thermoplastic elastomeric blend of nitrile rubber and poly(styrene-co-acrylonitrile).I. Effect of blend ratio and mixing sequence on mechanical properties', [*Journal of Applied Polymer Science*, **88**, 1976 \(2003\)](#).
- S. Anandhan, P. P. De, S. K. De*, S. Bandyopadhyay, A. K. Bhowmick, 'Thermoplastic elastomeric blend of nitrile rubber and poly(styrene-co-acrylonitrile).II. Replacement of nitrile rubber by its vulcanizate powder', [*Journal of Applied Polymer Science*, **90**, 2348 \(2003\)](#).
- S. Anandhan, P. P. De, S. K. De, S. Bandyopadhyay, A. K. Bhowmick*, 'Mapping of thermoplastic elastomeric nitrile rubber/poly(styrene-co-acrylonitrile) blends using tapping mode atomic force microscopy and transmission electron microscopy', [*Journal of Materials Science*, **38**, 2793 \(2003\)](#).
- S. Anandhan, P. P. De, S. K. De, S. Bandyopadhyay, A. K. Bhowmick*, 'Novel thermoplastic elastomers based on acrylonitrile-butadiene-styrene terpolymer (ABS) from waste computer equipment and nitrile rubber', [*Rubber Chemistry and Technology*, **76**, 1145 \(2003\)](#).
- S. Anandhan, P. P. De, S. K. De*, S. Swayajith, A. K. Bhowmick, 'Thermorheological studies of novel thermoplastic elastomeric blends of nitrile rubber (NBR) and scrap computer plastics (SCP) based on acrylonitrile-butadiene-styrene terpolymer (ABS)', [*Plastics, Rubber and Composites: Macromolecular Engineering*, **32**, 377 \(2003\)](#).
- S. Anandhan, P. P. De, S. K. De*, S. Swayajith, A. K. Bhowmick, 'Thermorheological properties of thermoplastic elastomeric blends of nitrile rubber/poly(styrene-co-acrylonitrile) containing waste nitrile rubber vulcanizate powder', [*Kautschuk Gummi Kunststoffe*, **57**, 599 \(2004\)](#).
- M. Y. Choi, S. Anandhan, J. H. Youk, D. H. Baik, S. W. Seo, H. S. Lee*, 'Synthesis and characterization of in-situ polymerized segmented TPU/layered silicate clay nanocomposites', [*Journal of Applied Polymer Science*, **102**, 3048 \(2006\)](#).

8. S. Guhathakurta, S. Anandhan, N. K. Singha, R. N. Chattopadhyay, A. K. Bhowmick*, 'Use of a waste natural gum as a multi-functional additive in rubber', [*Journal of Applied Polymer Science*, **102**, 4897 \(2006\).](#)
9. S. Anandhan*, P. P. De, S. K. De, R. S. Rajeev, A. K. Bhowmick, 'Thermal degradation and swelling of thermoplastic vulcanizates from NBR/poly(styrene-co-acrylonitrile) and NBR/scrap computer plastics blends', [*Kautschuk Gummi Kunststoffe*, **62**, 529 \(2009\).](#)
10. S. Anandhan*, C. J. Viknesh, N. Othman and S. Sasidharan, 'A new processing additive for natural rubber from agricultural waste', [*Kautschuk Gummi Kunststoffe*, **64**, 44 \(2011\).](#)
11. S. Anandhan*, H. G. Patil, R. R. Babu, 'Characterization of poly(ethylene-co-vinyl acetate-co-carbon monoxide)/layered silicate clay hybrids obtained by melt mixing', [*Journal of Materials Science*, **46**, 7423 \(2011\).](#)
12. S. Anandhan*, S. M. Sundar, T. Senthil, A. R. Mahendran, G. S. Shibulal, 'Extruded Poly(ethylene-co-octene)/Fly Ash Composites – Value added Products from an Environmental Pollutant', [*Journal of Polymer Research*](#), DOI: 10.1007/s10965-012-9840-6.
13. S. Anandhan*, K. Ponprapakaran, T. Senthil, G. George, 'Parametric study of Manufacturing Ultrafine Polybenzimidazole Fibers by Electrospinning', [*International Journal of Plastics Technology*, **16**, 101 \(2012\).](#)
14. B. Shivamurthy, K. U. Bhat, S. Anandhan*, 'Mechanical and Sliding Wear Properties of Multi-layered laminates from Glass fabric/graphite/epoxy Composites', [*Materials and Design*, **44**, 136 \(2013\).](#)
15. S. Anandhan*, A. K. Bhowmick, 'Thermoplastic Vulcanizates from Post Consumer Computer Plastics/Nitrile Rubber Blends by Dynamic Vulcanization', [*Journal of Material Cycles and Waste Management*, **15**, 300 \(2013\).](#)
16. T. Senthil, G. George, S. Anandhan*, 'Chemical resistant Ultrafine Poly(styrene-co-acrylonitrile) fibers by Electrospinning: Process optimization by Design of Experiment', [*Polymer-Plastics Technology and Engineering*, **52**, 407 \(2013\).](#)
17. G. George, S. Anandhan*, 'Structural characterization of nano-crystalline Co₃O₄ ultra-fine fibers obtained by sol-gel electrospinning', [*Journal of Sol-gel Science and Technology*, **67**, 256 \(2013\).](#)
18. T. Senthil, S. Anandhan*, 'Solution Electrospinning of Styrene-Acrylonitrile Random Copolymer from Dimethyl Sulfoxide', [*International Journal of Plastics Technology*, **17**, 123 \(2013\).](#)
19. S. Anandhan*, H. S. Lee, 'Influence of Organically Modified Clay Mineral on Domain Structure and Properties of Segmented Thermoplastic Polyurethane Elastomer', [*Journal of Elastomers and Plastics*, **46**, 217 \(2014\).](#)
20. G. George, A. Mahendran, S. Anandhan*, 'Use of Nano-ATH as a Multifunctional Additive for Poly(ethylene-co-vinyl acetate-co-carbon monoxide)', [*Polymer Bulletin*, **71**, 2081 \(2014\).](#)
21. B. Shivamurthy, G. George, K. U. Bhat, S. Anandhan*, 'Influence of nano-aluminum hydroxide on tribological, mechanical and flammability properties of E-glass fabric/epoxy multi-layered laminates', [*Kautschuk Gummi Kunststoffe*, **67**, 22 \(2014\).](#)
22. T. Senthil, S. Anandhan*, 'Structure-Property Relationship of Sol-gel Electrospun ZnO Nanofibers developed for Ammonia Gas Sensing', [*Journal of Colloid and Interface Science*, **432**, 285 \(2014\).](#)
23. G. George, S. Anandhan*, 'Glass Fiber Supported NiO Nanofiber Webs for Reduction of CO and Hydrocarbon Emissions from Diesel Engine Exhaust', [*Journal of Materials Research*, **29**, 2451 \(2014\).](#)
24. G. George, S. Anandhan*, 'Synthesis and characterisation of nickel oxide nanofibre webs with alcohol sensing characteristics', [*RSC Advances*, **4**, 62009 \(2014\).](#)
25. G. George, S. Anandhan*, 'Electrospun Nickel Oxide Nanofiber Webs for Thermistor Applications', [*International Journal of Plastics Technology*, **18**, 374 \(2014\).](#)
26. M. Selvakumar, A. Mahendran, P. Bhagabati, S. Anandhan*, 'Thermodynamic Miscibility and Thermal and Mechanical Properties of Poly(ethylene-co-vinyl acetate-co-carbon monoxide)/Poly(vinyl chloride) Blends', [*Advances in Polymer Technology*, **34**, 1 \(2015\).](#)
27. B. Shivamurthy, K. Murthy, P. C. Joseph, K. Rishi, K. U. Bhat, S. Anandhan*, 'Mechanical Properties and Sliding Wear Behavior of Jatropha Seed Cake Waste/Epoxy Composites', [*Journal of Material Cycles and Waste Management*, **17**, 144 \(2015\).](#)
28. T. Senthil, S. Anandhan*, 'Electrospinning of Non-woven Poly(styrene-co-acrylonitrile) Nanofibrous Webs for Corrosive Chemical Filtration: Process Evaluation and Optimization by Taguchi and Multiple Regression Analyses', [*Journal of Electrostatics*, **73**, 43 \(2015\).](#)
29. T. Senthil, S. Anandhan*, 'Fabrication of styrene-acrylonitrile random copolymer nanofiber membranes from N,N-dimethyl formamide by electrospinning', [*Journal of Elastomers and Plastics*, **47**, 327 \(2015\).](#)

30. A. G. Patil, A. M. Shanmugaraj, S. Anandhan*, 'Interparticle Interactions and Lacunarity of Mechano-chemically Activated Fly Ash', [*Powder Technology*, **272**, 241 \(2015\)](#).
31. G. George, S. Anandhan*, 'Comparison of Structural, Spectral and Magnetic Properties of NiO Nanofibers Obtained by Sol-Gel Electrospinning from Two Different Polymeric Binders', [*Materials Science in Semiconductor Processing*, **32**, 40 \(2015\)](#).
32. G. George, L. Elias, A.C. Hegde, S. Anandhan*, 'Morphological and structural characterisation of sol-gel electrospun Co₃O₄ nanofibres and their electro-catalytic behaviour', [*RSC Advances*, **5**, 40940 \(2015\)](#).
33. A. G. Patil, S. Anandhan*, 'Influence of Planetary Ball Milling Parameters on the Characteristics of Mechano-chemically Activated Fly Ash', [*Powder Technology*, **281**, 151 \(2015\)](#).
34. G. George, S. Anandhan*, 'A Comparative Study on the Physico-chemical Properties of Sol-gel Electrospun Cobalt Oxide Nanofibers from Two Different Polymeric Binders', [*RSC Advances*, **5**, 81429 \(2015\)](#).
35. B. Shivamurthy, S. Anandhan, K. U. Bhat*, 'Sliding wear and Mechanical Properties of Alumina/glass fabric/epoxy Composites', [*Kautschuk Gummi Kunststoffe*, **68**, 46 \(2015\)](#).
36. A. G. Patil, A. Mahendran, S. Anandhan*, 'Nanostructured Fly Ash as Reinforcement in a Plastomer-Based Composite: A New Strategy in Value Addition to Thermal Power Station Fly Ash', [*Silicon*, **8**, 159 \(2015\)](#).
37. A. G. Patil, M. Selvakumar, S. Anandhan*, 'Characterization of Composites based on Biodegradable Poly(vinyl alcohol) and Nanostructured Fly Ash with an Emphasis on Polymer-Filler Interaction', [*Journal of Thermoplastic Composite Materials*, **29**, 1392 \(2016\)](#).
38. R. Roopesh, K. Geedhika, J. D'Souza, S. Anandhan, K. U. Bhat, M.J. Jaya, S. B. Fathima, R. M. Balakrishnan*, 'Optimized Microwave assisted Biosynthesis of Silver Nanoparticles from *Nothapodytes foetida* Leaf Extracts and its Anti-microbial Activities', [*Journal of Experimental Nanoscience*, **11**, 840 \(2016\)](#).
39. G. George, S. Anandhan*, 'Tuning Characteristics of Co₃O₄ Nanofiber Mats Developed for Electrochemical Sensing of Glucose and H₂O₂', [*Thin Solid Films*, **610**, 48 \(2016\)](#).
40. S. Janakiraman, A. Surendran, S. Ghosh, S. Anandhan, A.Venimadhav*, 'Electroactive poly(vinylidene fluoride) separator for sodium ion battery with high coulombic efficiency', [*Solid State Ionics*, **292**, 130 \(2016\)](#).
41. N.R.Reddy, S.Anandhan*, 'Polyaniline/Poly(styrene-co-acrylonitrile) blend nanofibers Exhibit Enhanced Ammonia and Nitrogen dioxide Sensing Characteristics', [*Journal of Materials Science: Materials in Electronics*, **27**, 13329 \(2016\)](#).
42. M. Khalifa, A. Mahendran, S. Anandhan*, 'Probing the Synergism of Halloysite Nanotubes and Electrospinning on Crystallinity, Polymorphism and Piezoelectric Performance of Poly(vinylidene fluoride)', [*RSC Advances*, **6**, 114052 \(2016\)](#).
43. A. G. Patil, Poornachandra, R.Gumageri, K.Rajkumar, S. Anandhan*, 'Chitosan Composites Reinforced with Nanostructured Waste Fly Ash', [*Journal of Material Cycles and Waste Management*, **19**, 870 \(2017\)](#).
44. G. George, M. Selvakumar, A. Mahendran, S. Anandhan*, 'Structure-Property Relationship of Halloysite Nanotubes/Ethylene-Vinyl Acetate-Carbon Monoxide Terpolymer Nanocomposites', [*Journal of Thermoplastic Composite Materials*, **30**, 121 \(2017\)](#).
45. S. K. Jaganathan*, A. Balaji, H. Mohandas, G. Sivakumar, P. Kasi, M. Selvakumar, S. B. Kadiman, S. Anandhan, A. A. Mohd Faudzi, E. Supriyanto, M. Mandal, 'Hemocompatibility of Sulfuric Acid-Treated Metallocene Polyethylene and its Application in Reducing the Quantity of Medical Plastic Waste', [*Polymer-Plastics Technology and Engineering*, **56**, 240 \(2017\)](#).
46. B. Sachin Kumar, A.M.Shanmugaraj, S.K.Kalpathy, S. Anandhan*, 'Some New Observations on the Structural and Phase Evolution of Nickel Titanate Nanofibers', [*Ceramics International*, **43**, 6845 \(2017\)](#).
47. C. Shamitha, T. Senthil, Lixin Wu, B. Sachin Kumar, S. Anandhan*, 'Sol-gel Electrospun Mesoporous ZnMn₂O₄ nanofibers with High Specific Surface area', [*Journal of Materials Science: Materials in Electronics*, **28**, 15846 \(2017\)](#).
48. T. Senthil, S. Anandhan*, 'Effect of Solvents on the Solution Electrospinning of Poly(styrene-co-acrylonitrile)', [*Kautschuk Gummi Kunststoffe*, **70**, 44 \(2017\)](#).
49. B. Sachin Kumar, S.K.Kalpathy, S. Anandhan*, 'Synergism of Fictitious Forces on Nickel Cobaltite Nanofibers: Electrospinning Forces Revisited', [*Physical Chemistry Chemical Physics*, **20**, 5295 \(2018\)](#).
50. B. Sachin Kumar, A. N. Prakrthi, T. Senthil, K. U. Bhat, S. Anandhan*, 'Organoclay enabled Nanofiber formation from a Polyolefin Elastomer', [*Advances in Polymer Technology*, **37**, 1278 \(2018\)](#).

51. M. Khalifa, B. Deeksha, A. Mahendran, S. Anandhan*, 'Synergism of Electrospinning and Nano-Alumina trihydrate on polymorphism, crystallinity and piezoelectric performance of PVDF nanofibers', [*JOM: the Journal of the Minerals, Metals & Materials Society*, **70**, 1313 \(2018\).](#)
52. B. Sachin Kumar, V. C. Gudla, R. Ambat, S.K.Kalpathy, S. Anandhan*, 'A Mechanistic Study on the Structure Formation of NiCo₂O₄ Nanofibers decorated with In-Situ formed Graphene-like Structures', [*Journal of Inorganic and Organometallic Polymers and Materials*, **28**, 1885 \(2018\).](#)
53. B. Sachin Kumar, C. Dhanasekhar, A. Venimadhav, S. K. Kalpathy, S. Anandhan*, 'Pyrolysis-controlled synthesis, and magnetic properties of sol-gel electrospun nickel cobaltite nanostructures', [*Journal of Sol-Gel Science and Technology*, **86**, 664 \(2018\).](#)
54. B. Shivamurthy*, K. Murthy, S. Anandhan, 'Tribology and Mechanical Properties of Carbon Fabric/MWCNT/Epoxy Composites', [*Advances in Tribology*](#), DOI: 10.1155/2018/1508145.
55. A. G. Patil, A. Mahendran, M. Selvakumar, S. Anandhan*, 'Ductility and Flame Retardancy Enhancement of PVC by Nanostructured Fly Ash', [*Silicon*, **11**, 2241 \(2019\).](#)
56. M. Khalifa, A. Mahendran, S. Anandhan*, 'Durable, Efficient and Flexible Piezoelectric Nanogenerator from Electrospun PANi/HNT/PVDF Blend Nanocomposite', [*Polymer Composites*, **40**, 1663 \(2019\).](#)
57. M. Khalifa, S. Janakiraman, S. Ghosh, A. Venimadhav, S. Anandhan*, 'High Performance Gel Polymer Electrolyte for Lithium Ion Battery from PVDF/Halloysite Nanocomposite-based Non-Wovens', [*Polymer Composites*, **40**, 2320 \(2019\).](#)
58. S. Janakiraman, A. Surendran, S. Ghosh, S. Anandhan, A. Venimadhav*, 'A new strategy of PVDF based Li-salt polymer electrolyte through electrospinning for lithium battery application', [*Materials Research Express*, **6**, 35303 \(2019\).](#)
59. S. Janakiraman, A. Surendran, R. Biswal, S. Ghosh, S. Anandhan, A. Venimadhav*, 'Electrochemical characterization of a polar β -phase poly (vinylidene fluoride) gel electrolyte in sodium ion cell', [*Journal of Electroanalytical Chemistry*, **833**, 411 \(2019\).](#)
60. M. Khalifa, A. Mahendran, S. Anandhan*, 'Synergism of Graphitic-carbon nitride and Electrospinning on the Physico-chemical characteristics and Piezoelectric Properties of Flexible Poly(vinylidene fluoride) based Nanogenerator', [*Journal of Polymer Research*, **26**, 1 \(2019\).](#)
61. B. Sachin Kumar, V. C. Gudla, R. Ambat, S.K.Kalpathy, S. Anandhan*, 'Graphene Nanoclusters Embedded Nickel Cobaltite Nanofibers as Multifunctional Electrocatalyst for Glucose Sensing and Water-splitting Applications', [*Ceramics International*, **45**, 25078 \(2019\).](#)
62. S. Janakiraman, A. Surendran, R. Biswal, S. Ghosh, S. Anandhan, A. Venimadhav*, 'Electrospun electroactive polyvinylidene fluoride-based fibrous polymer electrolyte for sodium ion batteries', [*Materials Research Express*, **6**, 86318 \(2019\).](#)
63. B. Sachin Kumar, K. Tarafder, A. R. Shetty, A. C. Hegde, V. C. Gudla, R. Ambat, S.K. Kalpathy, S. Anandhan*, 'Polymorph Nickel Titanate Nanofibers as Bifunctional Electrocatalyst towards Hydrogen and Oxygen Evolution Reactions', [*Dalton Transactions*, **48**, 12684 \(2019\).](#)
64. R. Singh, S. Janakiraman, M. Khalifa, S. Anandhan, S. Ghosh, A. Venimadhav, K. Biswas*, 'An electroactive β -phase polyvinylidene fluoride as gel polymer electrolyte for magnesium-ion battery application', [*Journal of Electroanalytical Chemistry*, **851**, 113417 \(2019\).](#)
65. M. Khalifa, S. Anandhan*, 'PVDF Nanofibers with Embedded Polyaniline-Graphitic Carbon Nitride Nanosheet Composites for Piezoelectric Energy Conversion', [*ACS Applied Nanomaterials*, **2**, 7328 \(2019\).](#)
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51. S. Anandhan, 'Piezoelectric smart textiles based on PVDF nanocomposites for energy harvesting and sensing applications', *National Conference on New Developments in Polymeric Materials (DPM-2023), SPS India, March 2-3, 2023* (Invited paper).
52. G. S. Ekbote, S. Anandhan, 'Design and Development of Barium Tungstate Nanorods dispersed Electroactive Polymer Nano fabrics for Piezoelectric and Triboelectric Energy Harvesting', *International Conference on 'Advancements in Polymeric Materials APM-2023', CIPET-Bengaluru, India, March 17-19, 2023* (Keynote paper).

OTHER DETAILS

Notable achievements within my organization

1. Research Mentored
 - Post-docs: 1 (ongoing)
 - Ph.D.: 9 (completed) + 3 (ongoing)
 - Master's by research: 1 (completed)
 - Master's: 44 (completed) + 4 (ongoing)
 - Undergraduate: 29 (completed) + 1 (ongoing)
 - UG interns: 1
 - Master's student from collaborating institutions: 1
 - INSA visiting scientist: 1
2. Established the following laboratories for research and teaching:
 - Advanced Nanofiber lab
 - Piezoelectric and triboelectric testing lab
 - FTIR and Micro-Raman spectroscopy labs
3. Introduced Microsoft PowerPoint based teaching for the first time in my department in 2009.
4. Introduced research-oriented approach in teaching for polymers, nanomaterials and characterization related courses in my department in 2009.
5. Introduced the online PhD defense for the first time ever in 2019.
6. Introduced the following courses for UG & PG programs:
 - Science and Technology of Nanomaterials (introduced in 2009).
 - Advanced Polymeric Materials and Technology (introduced in 2015).
7. The article 'Collaboration Trends in National Institute of Technology Karnataka (NITK), Surathkal, India: An Analysis Based on Network Mapping' revealed that I am among the top 10 **most prolific authors of NITK**, based on international publications in Web of Science indexed journals and citations received, during 2010-19 (source: <https://digitalcommons.unl.edu/libphilprac/4573>).
8. Dr. Mohammed Khalifa, Ex-research Scholar of my group, was appointed in 2019 as a Senior Scientist by Kompetenzzentrum Holz GmbH, Austria, in recognition of my group's collaborative research with their company since 2010.
9. Materialized Memoranda of Understanding between my institute and Kompetenzzentrum Holz GmbH, Austria, for research collaboration and exchange of faculty and research students (2014 – current). Dr. Mohammed Khalifa, Ex-research Scholar of my group, was appointed in 2019 as a Senior Scientist by Kompetenzzentrum Holz GmbH, Austria, in recognition of my group's collaborative research with their company since 2010.

Details of Doctoral Theses Supervised

1. T. Senthil, 'Studies on Electrospinning of poly(styrene-co-acrylonitrile)', defended thesis on 9th February 2015.

2. B. Shivamurthy, 'Structure-property Relationship of Glass fabric/Epoxy Composites containing some Micro and Nano Fillers', defended thesis on 18th February 2015 (Joint supervisor: Dr. K. Udaya Bhat).
3. Gibin George, 'Influence of Polymeric Binders on the Physico-chemical Properties of Sol-gel Electrospun Nickel Oxide and Cobalt Oxide Nanofibers', defended thesis on 13th November 2015.
4. Akshata G. Patil, 'Utilization of Nanostructured Fly ash in Polymer Matrix Composites', defended thesis on 11th March 2016.
5. Sachin Kumar B, 'Physico-chemical Characteristics and Application Potential of Advanced Nickel Titanate and Nickel Cobaltite Nanofibers', defended thesis on 25th January 2019 (Joint supervisor: Dr. Sreeram K. Kalpathy, IIT Madras).
6. Mohammed Khalifa, 'Synthesis, Structure, Properties and Applications of Electrospun Poly(vinylidene fluoride)-Functional Nanofiller Composites', defended thesis on 4th October 2019.
7. Shamitha. C, 'Synthesis and Characterization of ZnMn₂O₄ and PVDF/Ca-Al LDH nanofibers for Sustainable Energy Applications', defended thesis on 9th June 2020.
8. Sawan Shetty, 'Development of Flexible Piezoelectric Nanogenerators from Electrospun Nanofabrics of Poly(vinylidene fluoride)/Nanosheets Composites', Defended thesis on 31st December 2021.
9. Govind S. Ekbote 'Development of poly(vinylidene fluoride) based nanotextiles for piezoelectric and triboelectric energy harvesting', defended thesis on 14th November 2023.

Courses taught

Master's/PhD Courses

- Polymer Technology
- Synthesis Techniques for Nanomaterials
- Advanced Characterization Techniques
- Nanocomposites
- Plastics Engineering
- Science and Technology of Nanomaterials
- Introduction to Nanoscience and Nanotechnology
- Nanomaterials Synthesis Laboratory
- Materials Testing Laboratory

Undergraduate Courses

- Polymer Science and Technology
- Instrumental Methods of Analysis
- Science and Technology of Nanomaterials
- Ceramics and Refractories
- Ceramics and Polymers Laboratory
- Extractive Metallurgy Laboratory

New Courses Introduced at NITK

- Science and Technology of Nanomaterials (introduced in 2009).
- Advanced Polymeric Materials and Technology (introduced in 2015).

Refereeing of Master's and Ph.D. theses (numbers of theses are given in parentheses)

Refereed Ph.D. theses from

- The University of New South Wales, Australia (1)
- Kyung Hee University, Korea (1)
- Cochin University of Science and Technology, India (9)
- Visvesvaraya Technological University, India (4)
- Anna University, India (5)
- Madurai Kamaraj University, India (1)
- Mahatma Gandhi University, India (6)
- National Institute of Technology Trichy, India (1)
- Vels University, India (1)
- SRM University, India (4)
- Chettinad Academy of Research & Education, India (1)
- National Institute of Technology Calicut (1)

- Academy of Scientific and Innovative Research (1)
- University of Mumbai (1)
- CHRIST University (1)

Refereed master's theses (4) from School of Materials Science and Engineering, the University of New South Wales, Sydney, Australia.

Editorial and Refereeing activity

- Guest editor, special issue: Catalysis for sustainable energy and fuel production, *Results in Engineering*, Elsevier, 2022.
- Referee by invitation for more than 50 international journals from ACS, RSC, Elsevier, IOP, Taylor & Francis, Wiley, Springer Nature, and SAGE. Representative list of journals for which services are rendered: *Advanced Functional Materials*, *CrystEngComm*, *Soft Matter*, *Nanoscale*, *ACS Applied Materials and Interfaces*, *ACS Nano*, *Composites Part-A*, *Journal of Colloid and Interface Science*, *Electrochimica Acta*, *Ceramics International*, *Small Methods*, *Journal of Applied Polymer Science*, *IOP Nanotechnology*, *Surface Topography: Metrology and Properties*, *JOM*, *Journal of Materials Science: Materials in Electronics*, *Polymer-Plastics Technology and Materials*, *Journal of Thermoplastic Composite Materials*.
- Reviewer for book proposals by: Springer-Verlag, 2014, CRC press, 2019, and Elsevier Science, 2019.

Other academic services

- Doctoral advisory committee member for Manipal University, Manipal and Yenepoya University, Mangaluru since 2018.
- Question paper auditor for Dr. Vishwanath Karad MIT World Peace University, Pune, 2022.
- Reviewer for proposals submitted to KSCSTE (Kerala State Council for Science, Technology & Environment)'s Emeritus Scientist Scheme and BLP Post-Doctoral Fellowship, 2023.
- Examiner for PhD course work, Department of Chemistry, University of Calicut, 2023.

Professional Memberships

1. Life Member - Materials Research Society of India, since 2010
2. Life Member - Asian Polymer Association, since November 2011
3. Life Member - Society for Materials Chemistry, India, since December 2022

Membership in National Level Committees

- Expert committee member of National Assessment and Accreditation Council
- Expert for evaluation and assessment of proposals received for NRDC National Innovation Award 2020
- Referee for research proposals submitted for funded projects to Board of Research in Nuclear Sciences (BRNS).

Contribution to Conferences/Workshops/Short term Courses

1. Organization of workshops/conferences
 - Coordinator and resource person for "Short course on Basic Rubber Technology", AIMST University, Malaysia, 06 August, 2007.
 - Co-convener for the symposium on "Selected Topics in Metallurgical and Materials Engineering", NITK, India, 22-24 January, 2014.
 - Convener for the workshop on "Raman Spectroscopy and Microscopy" in collaboration with Renishaw India, NITK, India, 24 September, 2015.
 - Convener for a two-day workshop on "Materials for Biomedical and Specialty Applications", NITK, India, 23-24 January, 2017.
 - Organizing Secretary for National Conference on Processing of Materials (NCOPOM-18), NITK, India, 19-21 September, 2018.
2. Resource person for the following workshops/colloquia/seminars
 - 'Winter School on Nanotechnology', Kadi Sarva Vishwavidyalaya University, Gujarat, India, 28 Jan-1 Feb, 2008.
 - 'National Workshop on Current trends in Advanced Polymer Composites', Kamaraj College of Engineering, Virudhunagar, India, 4-5 December, 2008.

- 'National Workshop on Research Methodology', University of Calicut, Kerala, India, 23-24 February, 2010.
 - 'Winter school on Nanoscience and Nanotechnology', N.I.T.K., India, 22-28 February, 2010.
 - Short term training program on 'Recent Advances in Polymer Science', N.I.T.K., India, 1-5 August, 2011.
 - National Seminar on 'Frontiers in Chemistry', the Madura College, Madurai, India, 17 February, 2012.
 - Workshop on 'Recent Trends in Monitoring, Control and Abatement of Air Pollution', N.I.T.K., India, 26-28 December, 2012.
 - International workshop on 'Color control in fly ash as a combined function of particle size and chemical composition', Coimbatore Institute of Technology, Coimbatore, India, February 2013.
 - National workshop on 'Advanced Materials Research for Device Applications', NMAM Institute of Technology, Nitte University, Karkala, India, 25-26 July 2013.
 - Faculty Development Programme on 'Recent Advances in Materials Processing, Characterization and Applications' (RAMCA-2017), Dr. Ambedkar Institute of Technology, Bangalore, India, 20-24 March 2017.
 - DRDO-ARMREB sponsored two days workshop on 'Fire retardant composites for advanced vehicle armour', Selvam College of Technology, Namakkal, India, 27-28 February 2019.
 - Faculty Development Programme on 'Impact of Nanomaterials on the Environment', MEPCO Schlenk Engineering College, Sivakasi, India, 17-21 August 2020.
 - International online FDP on 'Smart and Nano Materials', Department of Physics, SRM Easwari Engineering College, Chennai, India, 14-18 September 2020.
 - Online Refresher course in Chemistry, UGC-Human Resource Development Centre, University of Mumbai and Department of Chemistry, University of Mumbai, India, 25 Sep 2021.
 - Faculty Development Programme on 'Nanotechnology', Jyothi Engineering College, Thrissur, India, 9-13 January 2023.
 - SERB-funded High-end Workshop on Next-Generation Energy Storage Materials, Department of Mechanical Engineering, Indian Institute of Technology-Indore, (3 – 10 July 2023).
 - Online Refresher Course in Chemistry on the theme "Applications of Advanced Analytical Techniques in Chemical Sciences", UGC-Human Resource Development Centre, University of Mumbai and Department of Chemistry, University of Mumbai, November 22 to December 5, 2023.
3. Scientific advisory committee member for
- International Composites Conference ACUN-5, University of New South Wales, Australia, July 2006.
 - International Composites Conference ACUN-6, Monash University, Australia, November 2012.
 - International Conference on Polymers and Allied Materials (ICPAM 2014), IIT-Patna, India, May 30-31, 2014.
 - International Conference on Material Science and Technology (ICMST-2016), St. Thomas College, Kerala, India, 5-8 June 2016.
 - International Conference on Chemical Engineering and Advanced Polymeric Materials, BIT-Mesra, 18-20 August 2016.
 - International Conference on Contemporary Design and Analysis of Manufacturing and Industrial Engineering Systems, NIT-Tiruchirappalli, 18-20 January 2018.
 - National Conference on Advances in Mechanical Engineering, JNNCE-Shivamogga, 20-21 April 2018.
 - Second International Conference on Polymer Composites 2018 (ICPC 2018), NITK, India, December 2018.
 - International Conference on Advances in Mechanical Engineering, JNNCE-Shivamogga, 06-07 November 2020.
 - Workshop on Sustainable Approach on Automotive Brake Friction Materials for Electric Mobility, SRMIST-Chennai, 02-03 November 2023.
 - Second International Conference on Functional Materials for NexGen Applications (ICFMNA-2024), SSN College of Engineering, Chennai, 23-24, January 2024.

4. Chaired technical sessions in
 - International conference on Recent Advances and Challenges in Energy (RACE-2012), MIT-Manipal, India, January 2012.
 - International Conference on 'Advancements in Polymeric Materials APM-2014', CIPET-Bhubaneswar, India, February 2014.
 - International Conference on Polymer Composites (ICPC 2014), NITK, India, December 2014.
 - Fourth International Conference on 'Nanotechnology for Better Living', IIT Kanpur, India, April, 2019.
 - Second International Conference on Design, Materials and Manufacture (ICDEM 2019), NITK, India, December 2019.
 - International Conference on 'Advancements in Polymeric Materials APM-2021', CIPET-Bhubaneswar, India, March 2021.
 - International Conference on 'Advancements in Polymeric Materials APM-2023', CIPET-Bengaluru, India, March 2023 (A plenary session and another session on circular economy).
5. Member of the panel of judges for poster and oral presentations in
 - International Conference on Polymers and Allied Materials (ICPAM 2014), IIT-Patna, India, May 30-31, 2014.
 - International Conference on Advanced Materials (SCICON '16), Amrita University, Coimbatore, December 2016.
 - Fourth International Conference on 'Nanotechnology for Better Living', IIT Kanpur, India, April, 2019.
 - 3rd Commonwealth Chemistry Posters - Building Networks to Address the Goals Virtual Event, Royal Society of Chemistry, 28 – 29 September 2022.
 - International Conference on 'Advancements in Polymeric Materials APM-2023', CIPET-Bengaluru, India, March 2023.
 - 4th Commonwealth Chemistry Posters, Royal Society of Chemistry, 4 – 5 October 2023.

Details of Invited Talks Delivered

Total number of Invited/Keynote talks delivered in International conferences, workshops and colloquia=52 (47 talks since 2009).

Plenary talk

1. 'Challenges in Energy: Some Efforts in Search of Solutions', **International conference on Recent Advances and Challenges in Energy (RACE-2012)**, MIT-Manipal, India, January 2012.

Keynote talks

1. 'On Interfaces in Polymer Composites', **National Workshop on Current trends in Advanced Polymeric Composites**, Kamaraj College of Engineering and Technology, Virudhunagar, India, December 2008.
2. 'Role of Electrospinning Technology in Sustainable Development', **International Symposium on Emerging Technologies for Sustainable Development**, Basaveshwar Engineering College, Bagalkot, February 2017.
3. 'Fire retardancy in polymer-based systems: an overview', **DRDO-ARMREB sponsored two days workshop on 'Fire retardant composites for advanced vehicle armour'**, Selvam College of Technology, Namakkal, India, 27-28 February, 2019.
4. 'Enhancement of Dielectric and Piezoelectric Properties of PVDF nanofibers for Energy Harvesting Application: Role of Nanofillers', **International e-Conference on 'Advancements in Polymeric Materials APM-2021'**, CIPET-Bhubaneswar, India, March 2021.
5. 'PVDF Nanocomposite-based Electrospun Fabrics for Various Applications', **International e-Conference on 'Advancements in Polymeric Materials APM-2022'**, CIPET-Chennai, India, March 2022.
6. 'Design and Development of Barium Tungstate Nanorods dispersed Electroactive Polymer Nano fabrics for Piezoelectric and Triboelectric Energy Harvesting', **International Conference on 'Advancements in Polymeric Materials APM-2023'**, CIPET-Bengaluru, India, March 2023.

Invited talks

1. 'Effect of layered silicate clay on microphase structure of TPU', **International Conference on Advances in Polymer Blends, Composites, IPNs and Gels: Macro to Nano Scales [ICBC 2005]**, M.G. University, Kottayam, India, March 2005.
2. 'Synthesis and characterization of polyurethane/layered silicate clay nanocomposites', **International Composites Conference ACUN-5**, the University of New South Wales, Sydney, Australia, July 2006.
3. 'Use of a Natural Antioxidant from *Elaeis oleifera* leaves as an Ageing Retardant for Rubber' and 'An introduction to electrospinning' in a seminar for post graduate students and researchers, S.F.R. College for women, Sivakasi, India, January 2009.
4. 'Three Body Abrasive Wear Study of a Hybrid Composite based on Epoxy', **International Conference 'Advancements in Polymeric Materials APM-2010'**, CIPET-Bhubaneswar, India, February 2010.
5. 'An Introduction to Nano- Science and Technology', **National Workshop on Research Methodology**, University of Calicut, India, February 2010.
6. 'Polymer Nanocomposites: An overview', **Winter school on Nanoscience and Nanotechnology**, N.I.T.K., India, February 2010.
7. 'An Introduction to Thermal Analysis', **online invited lecture**, Department of Chemistry, PSGR Krishnammal College for Women, Peelamedu, Coimbatore, Tamil Nadu, 12th October 2010.
8. 'Synthesis and characterization of nanocomposites based on ethylene-vinyl acetate-carbon monoxide terpolymer and layered silicate clay', **International Conference on Recent Trends in Materials Science and Technology ICMST-2010**, IIST, Thiruvananthapuram, India, October 2010.
9. 'Processing of Plastics and Rubbers: an Overview' and 'Electrospinning of polymers: an Introduction', **short term training program on 'Recent Advances in Polymer Science'**, N.I.T.K., India, August 2011.
10. 'Polymer Nanocomposites: Synthesis, Characterization and Applications', **National Seminar on 'Frontiers in Chemistry'**, the Madura College, Madurai, India, February 2012.
11. 'Valorization of Fly Ash: Utilization in Polymer Matrix Composites', **workshop on 'Recent Trends in Monitoring, Control and Abatement of Air Pollution'**, N.I.T.K., India, 26-28 December, 2012.
12. 'Utilization of Fly Ash in Polymer Matrix Composites: Opportunities and Challenges', **International workshop on 'Color control in fly ash as a combined function of particle size and chemical composition'**, Coimbatore Institute of Technology, Coimbatore, India, February 2013.
13. 'Multifunctional cobalt oxide nanofibers: synthesis and characterization', **National workshop on 'Advanced Materials Research for Device Applications'**, NMAM Institute of Technology, Nitte University, Karkala, India, 26th July 2013.
14. 'Development of Nanocrystalline Zinc Oxide Nanofibrous Webs for ammonia sensing application', **International Conference on 'Advancements in Polymeric Materials APM-2014'**, CIPET-Bhubaneswar, India, February 2014.
15. 'Influence of Polymeric Binders on Structural, Spectral and Magnetic Properties of NiO Nanofibers Obtained by Sol-Gel Electrospinning', **International Conference on 'Advancements in Polymeric Materials APM-2015'**, CIPET-Chennai and IISc, Bangalore, India, February 2015.
16. 'Electrospinning: a Versatile Technique for Interdisciplinary Research', **Institution of Engineers (India) local centre meeting**, Mangaluru, 23rd February 2016.
17. 'Some New Observations on the Structural and Phase Evolution of Nickel Titanate Nanofibers', **International Conference on Advanced Materials (SCICON '16)**, Amrita University, Coimbatore, December 2016.
18. 'Fundamentals of Nanocomposites', **a Colloquium in Mechanical Engineering**, SECAB Institute of Engineering and Technology, Vijayapura, February 2017.
19. 'Electrospinning: A versatile Nanostructuring tool for various Applications', **IIM Surathkal Chapter**, NITK, 17 March 2017.
20. 'Electrospinning: An Advanced Polymer Processing Technique', **Faculty Development Programme on 'Recent Advances in Materials Processing, Characterization and Applications' (RAMCA-2017)**, Dr. Ambedkar Institute of Technology, Bangalore, 21 March 2017.
21. 'Electrospinning research @ NITK', **Research Scholars Forum, Department of Polymer Science and Rubber Technology**, Cochin University of Science and Technology, Kochi, 24 March 2017.

22. 'Durable, Efficient and Flexible Piezoelectric Nanogenerator from Electrospun PANi/HNT/PVDF Nanocomposite', **International Conference on 'Advancements in Polymeric Materials APM-2018'**, CIPET-Bhubaneswar, India, February 2018.
23. 'Piezoelectric Nanogenerator from Electrospun PANi/HNT/PVDF Nanocomposite', **MEA lecture series, Department of Metallurgical and Materials Engineering**, NITK, February 2018.
24. 'Piezoelectric Nanogenerator from Electrospun PANi/HNT/PVDF Nanocomposite', **Research Scholars Forum, Department of Polymer Science and Rubber Technology**, Cochin University of Science and Technology, India, 3 March 2018.
25. 'Synergism in Material Systems: Polymer Matrix Composites', **Department of Mechanical Engineering**, Alva's Institute of Engineering and Technology, Moodbidri, 12 October 2018.
26. 'Piezoelectric nanogenerators based on Electrospun PVDF Nanocomposites', **Fourth International Conference on 'Nanotechnology for Better Living'**, IIT Kanpur, India, 6-7 April, 2019.
27. 'Electrospinning: a Versatile tool for Materials Scientists', **Department of Physics**, A.J. College, Sivakasi, India, 9 September 2019.
28. 'Energy Harvesting by Electrospun Nanofabric-based Nanogenerators', **Faculty Development Programme on 'Impact of Nanomaterials on the Environment'**, **Department of Physics**, MEPCO Schlenk Engineering College, Sivakasi, India, 17-21 August 2020.
29. 'Role of Polymer Nanotechnology in Energy Harvesting & Storage', **Webinar by Department of Electrical and Electronics Engineering**, Velammal College of Engineering and Technology, Madurai, India, 16 September 2020.
30. 'Flexible self-poled piezoelectric nanogenerators based on electrospun PVDF nanocomposites', **International online FDP on 'Smart and Nano Materials'**, **Department of Physics**, SRM Easwari Engineering College, Chennai, India, 14-18 September 2020.
31. 'Gel polymer electrolytes from electrospun nanofabrics for rechargeable batteries', webinar on **'Thin Film Solid State Batteries'**, IIT Kharagpur and University of Cambridge, 30 September 2020.
32. 'Piezoelectric Nano-generators based on Nano-fabrics for Energy Harvesting', **e-short term course on New Generation Functional Materials and Their Applications (NFMA-2021)**, **Department of Materials Science & Engineering**, NIT Hamirpur, 3-7 February, 2021.
33. 'Self-powered nanogenerators based on PVDF nanotextiles for piezoelectric energy harvesting', **International Conference on Advances in Polymer Technology APT-2021**, Department of Polymer Science & Rubber Technology, Cochin University of Science and Technology, India, 27-29 May 2021.
34. 'Characterization of Polymers', **online lecture to the student interns from India and USA of NSF-IRES (USA) – funded project 'Additive manufacturing of novel polymers and composites at industrial scale'**.
35. 'Electrospinning: a Fascinating Nanofiber Fabrication Technique', **online Refresher course in Chemistry**, UGC-Human Resource Development Centre, University of Mumbai and Department of Chemistry, University of Mumbai, India, 25 Sep 2021.
36. 'PVDF Nanocomposites-based Non-wovens for Energy Harvesting and Storage', **National Conference on Current Trends in Polymer Science (CTPS 2022)**, Department of Polymer Science & Rubber Technology, Cochin University of Science and Technology, India 6 & 7, May 2022.
37. 'Electroactive Nanofabrics for Sustainable Energy Applications', **International Conference on 'Sustainability: Integrated and Scientific Approach (ICS-2022)'**, University of Mumbai, India, August 4 - 6, 2022.
38. 'Electrospinning: The Marvelous Tool of a Nanotechnologist', **SERB-sponsored Research Facility Training Program**, Department of Materials Science, Mangalore University, India, 21 October 2022.
39. 'An Expedition in Electrospinning', **online invited lecture under SOAWAL-2022**, Department of Chemistry, Siksha 'O' Anusandhan University, India, 12 November 2022.
40. 'Synthesis, Properties and Applications of Electrospun Nanofibers', **Faculty Development Programme on 'Nanotechnology'**, Jyothi Engineering College, Thrissur, India, 12 January 2023.
41. 'Piezoelectric smart textiles based on PVDF nanocomposites for energy harvesting and sensing applications', **National Conference on New Developments in Polymeric Materials (DPM-2023)**, Thiruvananthapuram, Society of Polymer Science India, March 2-3, 2023.
42. 'Polymer based piezoelectric and triboelectric nanosystems for energy harvesting', **International Faculty Development Programme on Advanced Functional**

Materials - 2023 (online event), Department of Physics, SRM TRP Engineering College, Trichy, 28 February - 9 March 2023.

43. 'PVDF based nanotextiles for piezoelectric and triboelectric energy harvesting', **SERB-funded High-end Workshop on Next-Generation Energy Storage Materials**, Department of Mechanical Engineering, Indian Institute of Technology-Indore, 3 – 10 July 2023.
44. 'Electrospun polymer nanocomposites for functional applications', **International FDP on 'Modelling, Processing, and Characterization of Composites' (IFDP-MPCC)**, NITK & Central University of Karnataka, 13 – 17 September 2023.
45. 'Electrospun nanofibers for functional applications: Some examples from my group's research', **Online Refresher Course in Chemistry on the theme "Applications of Advanced Analytical Techniques in Chemical Sciences"**, UGC-Human Resource Development Centre, University of Mumbai and Department of Chemistry, University of Mumbai, November 22 to December 5, 2023.

The information provided here is true to the best of my knowledge.