

# Somaiya Vidyavihar University

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<b>Department:</b> Science and Humanities					
<b>College:</b> K J Somaiya College of Engineering					
<b>DOJ Somaiya:</b> 01/08/2002		<b>Career Experience:</b> 21 Yrs		<b>Industry Experience:</b> Nil	
				<b>Teaching Experience:</b> 21Yrs	
<b>Present Academic Designation:</b> Associate Professor			<b>Present Administrative Designation:</b> Joint Associate Dean Research and Development		

## Area of research/specialization and Courses Delivered

### Research domain/interests/areas

1. Soft Condensed Matter
2. Material Science
3. Polymer
4. Nanomaterial



### Courses Delivered

1. Engg./App. Physics
2. Soft Condensed Matter: Liquid Crystals
3. Material Science
4. Types of Materials
5. Energy Studies
6. Introductory Physics for Life Sciences

<b>Recognition as a teacher by any University</b>	UG: Yes	PG: Yes	Ph.D : Yes
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### Details of Recognitions

1. Recognized PhD Guide of Somaiya Vidyavihar University in Physics (SVU/DR0/PhDGL/22-23/064)
2. Recognized teacher of University of Mumbai for Post Graduate in Physics (University of Mumbai Approval No: PG/ICD/2018-19/2521)
3. Visiting Faculty at S.K. Somaiya College, Somaiya Vidyavihar University (2022-23)
4. Visiting faculty (after College hours) for M.Sc students at Department of Physics, University of Mumbai since 2016-17.
5. Visiting faculty (after College hours) for M.Sc students at School of Engineering and Applied Sciences, University of Mumbai sub Centre Kalyan since 2021-22

## Education

Examination	Name of the Degree	University/Board	Institute/College	Year	CPI/SPI/ %Marks
Ph.D	PhD(Physics)	University of Mumbai	Department of Physics	2017	A grade for course work
PG	M.Sc (Physics)	University of Mumbai	Department of Physics	2001	First Class
UG	B.Sc (Physics)	University of Mumbai	R. J. College, Mumbai	1999	First Class

## Somaiya Vidyavihar University

Notable Experience Details					
Sr. No.	Name of the organization	Designation	Date of Joining	Date of Leaving	Experience (Years)
1.	K. J. Somaiya College of Engineering, Mumbai	Lecturer	11.02.2002	31.05.2002	4 months
2.	R.J. College, Mumbai	Lecturer	17.08.2001	09.02.2001	6 months

Research Accomplishments and Projects		
No. of students pursuing Ph.D as on date: 03 (as a co-guide)		No of students completed Ph.D as on date: Nil
No of students completed PG thesis / Project work as on date: 02 (at Department of Physics, University of Mumbai)		No of students / groups completed UG projects as on date: 4 (mini projects)
Publications Total: 22	Number of Peer review Journal papers: 11	Number of Conference papers: 11 (Proceeding in Scopus/WoS)

### Details of selected Publications:

1. Effect of Quantum Dots Dispersion on the Structural, Optical, and Thermal Properties of Liquid Crystal System in Advanced Materials Research, Volume 1176, DOI: 10.4028/p-82i41e
2. Tuning of thermal and electrical properties of polymer dispersed cholesteric liquid crystal in Materials Science Forum, Volume 1070, DOI:10.4028/p-w7lky2
3. Investigations of Optical and Thermal Response of Polymer Dispersed Binary Liquid Crystals, Molecular Crystals and Liquid Crystals (Taylor and Francis).  
DOI: 10.1080/15421406.2017.1287478
4. Optical Characterization of Inorganic Nanoparticles doped in Polymer Dispersed Liquid Crystal Molecular Crystals and Liquid Crystals (Taylor and Francis).  
DOI: 10.1080/15421406.2017.1289603
5. Comparative study of nanoparticles doped in Liquid Crystal Polymer System in Journal of Molecular Liquids (Elsevier)  
DOI: 10.1016/j.molliq.2016.10.075.
6. Study of Optical, Thermal and Mechanical Properties of Nematic Liquid Crystal Elastomer in Journal of Information Display (Taylor and Francis)  
DOI:10.1080/15980316.2016.1241832
7. Spectroscopic and Thermo-mechanical studies of Liquid Crystal Elastomer in Key Engineering Materials, Volume 659, DOI: 10.4028/www.scientific.net/KEM.659.495

### Details of selected Conference Proceedings:

1. Enhanced optical and dielectric properties of polymer dispersed liquid crystal for display applications in Materials Today: Proceedings (Elsevier)  
DOI: 10.1016/j.matpr.2022.11.081
2. Optical properties of thermotropic liquid crystal dispersed with conducting polymer" in Materials Today: Proceedings (Elsevier)  
DOI:10.1016/j.matpr.2022.06.015
3. Wavelength and temperature dependent refractive index of polymer dispersed nematic liquid crystal in IEEE xplore pp. 1-4,  
DOI: 10.1109/ICEEICT53079.2022.9768652

4. The influence of polymer on optical and thermal properties of nematic liquid crystals” in Journal of Physics: Conference Series 2070 012055, IOP Publishing  
DOI:10.1088/1742-6596/2070/1/012055
5. A study of structural parameters and photoluminescence of Tb doped ZnO nanoparticles” in Materials Today: Proceedings, DOI: 10.1016/j.matpr.2019.05.377
6. Effect of CNT on Liquid Crystal Elastomer” in IEEE Xplore  
DOI: 10.1109/INDICON.2015.7443387.
7. Thermo-optical Studies of Nematic Liquid Crystal Elastomer in American Institute of Physics (AIP) Con. Pro.1620,456; DOI: 10.1063/1.4898281.

#### **Books/Book Chapters**

1. Investigation of Electrical, Acoustical and Optical Properties of Nanopowder Dispersed Cholesteric Liquid Crystal in Recent Trends in Chemical and Material Sciences Vol. 5, B P International (U.K). DOI:10.9734/bpi/rtcams/v5/13270D Print ISBN: 978-93-5547-420-9, eBook ISBN:978-93-5547-425-4
2. Synthesis of Liquid Crystal Elastomer and Investigation of its Optical, Thermal and Mechanical Properties in New Insights into Physical Science Vol. 2, Book Publisher International (U.K)  
DOI: 10.9734/bpi/nips/v2 Print ISBN: 978-93-90149-54-4, eBook ISBN: 978-93-90149-53-7

#### **Patents/Copy Rights**

1. Synthesis and Characterization of Liquid crystal Elastomers (Indian Innovation Patent, Application No. 202321026355A, Published in May 2023)
2. Ultrasonic Velocity Monitoring Device (Indian Design Patent, Application No. 371861-001 issued on 19/01/2023)
3. Deep Learning with Nanotechnology Approach to the Effect of Topical Creams for Treating Blood Cancer Nodes (Indian Innovation Patent, Application No. 202221058459, Published in October 2022)
4. Lightweight and outstanding mechanical strength of agave fiber reinforced silica aerogel blanket (Indian Innovation Patent, Published Application No. 202221065528, Published in November 2022)

No. of Research / consultancy / projects completed: 02

No of Research / consultancy / projects on-going: Nil

No of Research / consultancy / projects on applied as on date: 01

#### **Details of Research / consultancy / projects:**

##### **Completed**

1. Thermal and optical characterization of quantum dots dispersed in liquid crystal system.
2. Characterization of carbon nano-tubes in liquid crystal mixtures

##### **Applied**

1. Binary Liquid crystal system dispersed with nano-sized particles for display and photonic applications

## Somaiya Vidyavihar University

FDPs/Seminars/Workshops/Training Programs Attended/ Organized/ Delivered
<p><b>Attended</b> (more than 50)</p> <p><b>Details of selected FDP/Seminar</b></p> <ol style="list-style-type: none"> <li>1. Participated in four months course in Classical Electromagnetism-2 (Magnetostatics) organized by Centre for Continuing Education, IIT Kanpur, during August 15<sup>th</sup> to December 25<sup>th</sup>, 2022</li> <li>2. STTP on Computational Techniques for Physical Science &amp; Engineering (CTPSE-2022) organized by SVNIT, Surat September, 19<sup>th</sup> to 23<sup>rd</sup> 2022.</li> <li>3. STUTI program of DST on "Advanced Research Instruments" organized by University of Allahabad during August 23<sup>rd</sup> to 29<sup>th</sup>, 2022.</li> <li>4. AICTE Training And Learning (ATAL) Academy FDP on " Current Trend in Engineering Nano-Materials, Characterizations &amp; Their Applications " organized by Indira Gandhi National Tribal University (Central University), Amarkantak, during December 6<sup>th</sup> to 10<sup>th</sup> 2021.</li> <li>5. TEQIP III sponsored Workshop on “Advanced Techniques for Materials Characterization” organized by Malviya National Institute of Technology (MANIT) Jaipur, during July 6<sup>th</sup> to 10<sup>th</sup> 2020.</li> <li>6. STTP on “Recent Advancement in Chemical Engineering and Material Sciences" (RACEMS2019) organized by Maulana Azad National Institute of Technology (MANIT), Bhopal, during December 25<sup>th</sup> to 29<sup>th</sup>, 2019.</li> <li>7. Completed One week TEQIP-II sponsored STTP on “Nanoscience and Nanotechnology: Fundamentals, Synthesis and Application” at Sardar Patel College of Engineering, Mumbai during January, 2<sup>nd</sup> to 7<sup>th</sup> 2017.</li> </ol>
<p><b>Organized</b></p> <ol style="list-style-type: none"> <li>1. Two days webinar on “Challenges, Innovations And Adaptations of COVID-19: Science &amp; Society Perspectives” jointly organized by K. J. Somaiya College of Engineering and S. K. Somaiya College, Somaiya Vidyavihar University during October 29<sup>th</sup> to 30<sup>th</sup> 2021.</li> <li>2. International Conference on Nanomaterials and Nanotechnology organized by Department of Physics, University of Mumbai, during March 25<sup>th</sup> to 27<sup>th</sup> 2021.</li> <li>3. One Week AICTE-ISTE Approved STTP on “Linear Algebra, Statistics, Mathematical Modeling: Hands On” held at K. J. Somaiya College of Engineering, Mumbai during January, 8<sup>th</sup> to 12<sup>th</sup> , 2019.</li> <li>4. Organized Guest Lecture on “Sensors and their Applications in emerging Technology” by Dr. Philip B. Kassey, Head R &amp; D, Eagle Photonics Pvt. Ltd. Vashi, Navi Mumbai at K. J. Somaiya College of Engineering on March 22<sup>nd</sup> , 2017.</li> <li>5. Organized Guest Lecture on “Advances in Optics: Michelson’s Interferometer to LASER Interferometer Gravitational-Wave Obervatory (LIGO)” by Dr. Radha Srinivasan, Associate Professor, Department of Physics, University of Mumbai at K. J. Somaiya College of Engineering on March, 1<sup>st</sup> 2016.</li> </ol>
<p><b>Delivered</b></p> <ol style="list-style-type: none"> <li>1. Delivered talk as invited speaker at Multicon 2023 organized by Thakur College of Engineering &amp; Technology, Mumbai.</li> <li>2. Delivered an invited talk at International Conference on Foamed Polymers (ICFP2022) held at Mahatma Gandhi University, Kottayam, Kerala</li> <li>3. Guest Seminar on “Quantum Mechanics” at Konkan Gyanpeeth College of Engineering, Karjat</li> </ol>

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4. Guest Lecture on “Superconductivity and its Applications” at Atahrva College of Engineering, Mumbai
5. Delivered Guest Lecture on Basics in Nanotechnology at R. J. College, Ghatkopar (W), Mumbai

### Notable Key Scholastic Achievements

1.	Award for Oral competition on Recent Trends in Nano Materials towards the Sustainable Developments in Energy and Environment-2022, organized by Institute of Science, (Govt. of Maharashtra) Mumbai in collaboration with SURE Foundation during February 25 <sup>th</sup> to 28, 2022.
2.	Best Presentation award at National Symposium on Smart synthesis techniques for smart materials & their application in Science and Engineering organized by Veermata Jijabai Technological Institute (VJTI), Mumbai during January, 3 <sup>rd</sup> to 4 <sup>th</sup> 2020.
3.	Best Oral Presentation Award at National Conference on Advanced Nanomaterials and their Applications (ANA-2018) at National Institute of Technology, Allahabad, Prayagraj in December 2018.
4.	Recipient of 2 <sup>nd</sup> Prize for Presentation at National Conference on Advanced Analytical Tools for Material Characterization at Birla College, Kalyan, in February 2018.
5.	Dr. S. K. Somaiya Award for Excellence in Research by Somaiya Vidyavihar in September 2017.

### Notable Positions and Responsibility

1.	Coordinator/member, Board of Studies in Physics, Somaiya Vidyavihar University
2.	Convener, Research and Development committee, KJSCE since June 2022
3.	Convener, Institute level write-off committee, KJSCE, since January 2019
4.	Laboratory In-charge Applied Physics Laboratory KJSCE, since July 2014
5.	Member Board of studies, Thakur College of Engineering and Technology, Mumbai

Date: 17/07/2023

  
Signature of Faculty Member