

Dr. Suren Patwardhan

Ph D (IIT Bombay)

✉ surenpatwardhan@somaiya.edu ☎ +91 022 66449575 📞 9987599121

🏢 K J Somaiya School of Engineering (KJSSE) &
Somaiya School of Basic and Applied Sciences (SSBAS)
Somaiya Vidyavihar University (SVU), Mumbai

🆔 0000-0002-4947-1968 Google Scholar LinkedIn KJSCE Faculty Profile



Current Position

Associate Professor and Head, Department of Science and Humanities, KJSSE, and
Head, Department of Physics, SSBAS

Education

2015-2021	Indian Institute of Technology Bombay <i>Ph D Energy Science & Engineering</i>
1996-1998	University of Mumbai <i>M. Sc. Physics (I class with distinction)</i>

Work Experience (Teaching & Other)

Aug 2002 – till date	Associate Professor - Physics, Somaiya Vidyavihar University (July 2023 onwards) Assistant Professor - Physics (Aug 2002 – June 2023) <i>Department of Science and Humanities</i> <ul style="list-style-type: none">• K J Somaiya School of Engineering
July 2000 – July 2002	Lecturer - Physics <i>Department of Physics</i> <ul style="list-style-type: none">• Vidyavardhini's College of Engineering & Technology
Oct 1998 – July 2000	Research/Technical Assistant <i>Department of Physics</i> <ul style="list-style-type: none">• University of Mumbai

Leadership/Administrative Work Experience

Administrative-level (total): 15 Years

- Positions holding currently:
 - Head of the Science and Humanities Department at KJSSE (Since July 2021)
 - Additional charge as Head of the Physics Department at SSBAS (Since June 2025)
 - Chairperson, Board of Studies, Physics, Somaiya Vidyavihar University (from April 2025, Re-appointed from Nov 2025)
 - Convener, University Infrastructure Committee (Since Nov 2023)
 - Convener, Prevention of Unfair Means Committee, Somaiya Vidyavihar University (Since Jan 2019)

- Positions held earlier:
 - I/c Head of the Department, July – Dec 2012
 - Associate Head, July 2009 – June 2012 and Jan 2013 – Dec 2013
 - Convener, Expert Committee for Integrated BS-MS Program
 - Coordinator for Integrated Bachelor of Science-Master of Science Program (iBS-MS) (Jan-Dec 2022)
 - Member, Core Committee, Examination Cell, K J Somaiya College of Engineering (Dec 2018 – Aug 2020)
 - Internal Member, Academic Advisory Board, K J Somaiya College of Engineering (Under Mumbai University) (June 2019 – Aug 2020)
 - I/c, Document Verification, Engineering Admissions (2005 – 2012)
 - I/c, Applied Physics Laboratory, K J Somaiya College of Engineering (2003 – 2009)
 - Core Team Member, Somaiya Vidyavihar University - India Electronics and Semiconductor Association (SVU-IESA) Campus Connect Initiative (Since April 2024)
 - Member, Steering Committee for Somaiya-Shimatzu Centre, Somaiya Vidyavihar University (Since Dec 2022)
 - Member of Internal NAAC (iNAAC), Centre of Examination, Somaiya Vidyavihar University (Since Nov 2023)
 - Coordinator, Open Electives (Generic), Somaiya Vidyavihar University (Since April 2024)
 - Subject Coordinator for Physics, Integrated Bachelor of Science – Master of Science (iBS-MS) Program (Since Jan 2022)

Teaching Experience

Teaching (total): 25 Years

- Courses taught:
- UG:
 - Honours Program - Quantum Computing & Generative AI (B Tech)
 - Exposure Course - Exploring Space Science and Technology
 - Open Elective - Philosophy of Science
 - Applied Physics (BE)
 - Engineering Physics (BTech)
 - Project Based Learning (BTech)
 - Classical Physics (BS-MS integrated program)
 - Engineering Materials and Components (BE)
 - Electromagnetic wave theory (BE)
 - Physics for Biological Sciences (B Sc Biotechnology)
 - Telecommunications (BSc IT)
 - Discrete Mathematics (BSc IT)
 - Environmental Studies (BE)
- PG:
 - Material Science and Engineering (Ph D Physics coursework)
 - Solar Energy (ME Energy)
 - Solar Photovoltaics (MTech Energy)
 - Solid State Devices - Modelling and Simulations (M Tech VLSI)
 - Solid State Devices - Modelling and Simulations Laboratory (M Tech VLSI)
 - Analogue CMOS Integrated Circuits (M Tech VLSI)

Workshops/Webinar/Conferences Organized (in last 5 years)

Current Academic Year (2025-26):

1. Convenor, STTP on Quantum Computing: From Fundamentals to Applications 15-19 Dec 2025
2. Convenor, 2-day FDP on Foundations of Quantum Computing, 8,9 July 2025

Academic Year 2024-25:

1. Convenor, STTP on advanced Functional Materials 23-27 June 2025

2. Guest Lecture on How Liquid Crystals shape our world: A Journey through Magical Materials by Dr. Anuja Katariya Jain, Assistant Professor of Physics, SVKM's Shri Bhagubhai Mafatlal Polytechnic and College of Engineering, 25 Jan 2025
3. Convenor, 1-week FDP on Future of Education-Innovative Pedagogy, OBE and AI, 9-13 Dec 2024
4. Guest Lecture on Introduction to Liquid crystals, their properties and applications by Dr. Krishnakant Misra, I/c Principal, Thakur Specialized College, 28 Sept 2024

Academic Year 2023-24:

1. Guest Lecture of Adoption of Best Practices - criterion 7 of NAAC 19 June 2024
2. Guest Lecture on Solar Energy Manufacturing in India by Dr. Rajeewa Arya, 7th Feb 2024
3. Guest Lecture on "Attosecond Physics" (Nobel Prize-2023) by Dr. Gopal Dixit from IIT Bombay, 14 March 2024
4. Workshop on Evaluation of Curriculum Revision: Model KJSCE, ICTIEE, 10 Jan 2024
5. Workshop on Evaluation of Curriculum Revision: Model KJSCE, REES, 10 Jan 2024
6. Guest lecture on Computational Chemistry 25 Nov 2023

Academic Year 2022-23:

1. Member, Organizing Committee for Plasma Exhibition, in collaboration with Institute for Plasma Research, Gujrat and S K Somaiya College Feb 2023 Guest lecture on Fibre Optic Sensors 21 Jan 2023
2. Workshop on Implementation of aspects of NEP-2020 through Closed-Loop Education System: Model KJSCE, ICTIEE, 5 Jan 2023
3. Guest lecture on Computational Chemistry 15 Dec 2022
4. Nobel Prize Lecture Series 2022-23 - Chemistry with SIRAC, SVU, 08 Dec 2022
5. Nobel Prize Lecture Series 2022-23 - Physics with SIRAC, SVU, 22 Nov 2022

Academic Year 2021-22:

1. Guest lecture on "Quantum Computing" by Dr. Nischal Dwivedi, PDF, IIT Bombay, 13 Apr 2022
2. Science Day Celebration, 28 Feb - 3 March 2022
3. International webinar on "Challenges, Innovations and Adaptations of Covid-19: Science and Society Perspectives", 29-30 Oct 2021

Honors and Invited Talks (in last 3 years)

- Invited talk at STTP on Quantum Computing: From Fundamentals to Applications 15-19 Dec 2025
- Evaluator for Doctoral Programme Colloquium at SVU 11 July 2025
- Invited talk at 2-day FDP on Foundations of Quantum Computing, 8,9 July 2025
- Invited talk at STTP on advanced Functional Materials 23-27 June 2025
- Guest session on "Heat Transfer", 4 Apr 2025
- Guest session on "What is the thing called Science" in a seminar organized by Centre for Civilization Studies on 24 Feb 2025
- Judge at the Annual Research Meet, SVU 30-31 Jan 2025
- Guest session on Quantum Computers and Quantum Technologies at Pillai College of Engineering 01 Feb 2025
- Invited talk at FDP on Future of Education-Innovative Pedagogy, OBE and AI, 13 Dec 2024
- Moderator for panel discussion in FDP on Future of Education-Innovative Pedagogy, OBE and AI, 13 Dec 2024
- Invited talk at STTP on Quantum Intelligence and Generative AI: Novice to Master Organized by Department of Electronics on 5 Dec 2024
- Evaluator Certificate of Doctoral Program Colloquium 12 July 2024
- Presentation on Evaluation Reforms: Moving From Absolute to Relative Grading at the KJSSE Conclave 11 July 2024
- Evaluator at National Science Day SKSC 24 Feb 2024
- Project evaluator, DIPEX-2024, 7-10 March 2024
- Workshop facilitator at the ICTIEE-2024 Conference on Reforms in Engineering Education on the topic "Evaluation of Curriculum Revision - Model KJSCE" at KLE Tech University, Hubballi Organized by IUCEE from 6-8 Jan 2024
- Workshop facilitator at the ICTIEE-2023 Conference on Reforms in Engineering Education on the topic "Implementation of aspects of NEP-2020 through Closed-Loop Education System: Model KJSCE" at Vidyavardhaka College, Mysuru Organized by IUCEE from 4-8 Jan 2023

- Worked as Judge at the Science Project Competition organized by Lion's Club of Vidyavihar, 01 Oct 2022
- AICTE Fellowship July 2015 – June 2018
- Best Paper Award at International Conference on Advances in Energy Research, IIT Bombay, Dec 2017
- 38th European Photovoltaic Specialist's Energy Conference, Lisbon, Portugal (converted to online), Sept 2021
- 5th International Conference on Emerging Electronics, IIT Delhi, Nov 2020
- Indo-Universal Collaboration for Engineering Education Conference, Hyderabad, Jan 2020
- 61st Electronic Materials Conference, Michigan, USA, June 2019
- Fundamentals of Quantum Theory and Electronic Structure of Atoms for M Tech (Electronics), KJSCE
- Stall and Volunteer at the IIT Bombay Tech Fest - 2016 and 2017
- Jury Member for "Somaiya Got Talent" Competition, March 2015
- Judge for Drama Competition at the Symphony Shield, Feb 2015
- Trainer for Staff from MITCON, PUNE for Vocational Training on Solar Energy, June 2013
- Invited Talk on "Radiation", 24 Sept 2004, Department of Electronics, KJSCE
- Invited Talk on "Solid State Physics", 16 Aug 2004, Department of Electronics and telecommunications, ISTE-KJSCE Chapter

Workshops/STTPs/SWAYAM-NPTEL/Skill-development Courses/Conferences Attended

1. ICTIEE conference 8-10 Jan 2025
2. NPTEL course on Sensors Technologies: Physics, Fabrication and Circuits July-Sept 2024
3. 1-Week STTP on Non-Destructive Testing: Integrating Legacy and Emerging New Technologies 8-12 July 2024
4. ICTIEE and REES 4-6 Jan 2024
5. ICTIEE conference 5-7 Jan 2023
6. Symposium on "NEP-2020", 26-30 Sept 2022, St. Francis Inst. of Management in association with Indian Council for Social Science Research
7. One-week STTP on "Computational Techniques for Physics and Engineering", 19-23 Sept 2022, SVNIT, Surat
8. 2-day Workshop on "Automation of Physics Experiments using Arduino", 15, 16 Sept 2022, VIIT Pune
9. One-week Workshop on TCAD, 1-5 Aug 2022, IIT Bombay
10. NPTEL/AICTE FDP on "Introduction to Quantum Computing: Quantum Algorithms and Qiskit", July-Aug 2022, IIT Madras in association with IBM Research, India
11. National Symposium on "Polymer Science and Technology", 5-6 May 2022, Department of Polymer Science, SVU
12. National Conference on "NEP-2020: Implementation in Maharashtra - Opportunities and Challenges", 30 March 2022, PERA and SVU
13. Annual Leadership Summit on "Transforming the IUCEE Way to NEP", 9-11 July 2021, IUCEE and TLC, KJSCE
14. 12-Week NPTEL Course on "Semiconductor Optoelectronics", Sept - Dec 2020
15. Online Training Program on "Online Teachnig", July - Sept 2020, IUCEE and KJSCE
16. Crash-course in "Energy", 23 July - 1 Aug 2020, Energy Club, IIT Bombay Webinar on "Challenges in Science Education and Research in the COVID-19 Scenario", 29 July 2020, UNGC
17. "Workshop on Lasers, Fibre Optics, Optical Communications, Fibre Sensors", 6-7 March 2020, National Academy of Science and Indian Women Scientists' Association
18. 8-Week NPTEL Course on "Solar Photovoltaics: Principles, Technologies, Materials", Jan - March 2020
19. International Conference on "Transformation in Engineering Education", 5-8 Jan 2020, IUCEE and Anurag Group of Institutes
20. "KJSCE Conclave-2019", 12 July 2019, IQAC-KJSCE
21. Workshop on "IUCEE International Engineering Educator Pre-Certification", 18-20 Dec 2018, IUCEE
22. Training Course on "Physics of Semiconductors", 15-20 Aug 2017, IIT Kanpur
23. Training Course on "Learning Physics Through Simple Experiments", 20 Sept - 20 Nov 2016, IIT Kanpur
24. ISTE-STTP on "Engineering Physics", 8-18 Dec 2015, IIT Bombay and ISTE-KJSCE Chapter
25. INUP Hand-on Training Workshop on "Fabrication and Characterization of Crystalline Silicon Solar Cells", 17-22 Nov 2014, IIT Bombay

26. INUP Hand-on Training Workshop on "Nanofabrication Technologies", 26-28 May 2014, IIT Bombay
27. 1-Semester CEP PG-level Course on "Physics of Transistors", Department of Electrical Engineering, IIT Bombay
28. ISTE-STTP on "Tools and Techniques for Effective Technical Writing", 13-17 May 2013, ISTE-KJSCE Chapter
29. Workshop on "Aakash for Education", 10-11 Nov 2012, IIT Bombay
30. Workshop on "Solar Photovoltaics: Fundamentals, Technologies and Applications", 12-22 Dec 2011, NCPRE-IIT Bombay
31. STTP on "Nanoscience and Nanotechnology", 18-22 Jan 2010, Shah and Anchor Engg College - ISTE Chapter
32. Workshop on "Engineering Electromagnetics" Practical Approach", 1 Sept 2007, ISTE-KJSCE Chapter
33. Refresher Course in "Electronics and Instrumentation", 26 Dec 2006 - 15 Jan 2007, WRIC and Department of Physics, University of Mumbai
34. ISTE-STTP on "Emerging Microelectronics and Telecommunication Engineering", 19-30 June 2006, Vidyavardhini's College of Engg
35. Seminar on "Lasers and Applications", 30-31 Jan 2006, Shah and Anchor Engg College - ISTE Chapter
36. National Seminar on "Photonics", 7 Jan 2006, Royal College of Arts, Science and Commerce
37. Colloquium on "Centenary of Einstein's Relativity", 3 Sept 2005, FCR College of Engg
38. Seminar on "Information Technology - Trends and Challenges", 30 Aug 2005, KJSCE
39. Seminar on "Finite Element Analysis and its Applications", 6 Aug 2004, KJSCE
40. CEP Course on "Elements of Microelectronics", Sept 2003, IIT Bombay

Publications and Reviewer

On-going project Binary Liquid crystal system dispersed with nano-sized particles for display and photonic applications, under SVU seed-funding (22 lacs), (as co-investigator)

Reviewer

1. Reviewer at the ICTEAH 2024
2. Reviewer for International Conference on Climate Change
3. Reviewer for "Indian National Association of Engineering (INAE) Letters
4. Reviewer for "International Conference on Agriculture, Healthcare and Energy"
5. Reviewer for "Journal of Alloys and Compounds", Elsevier
6. Reviewer of "Journal of Engineering Education Transformations"

Journal Articles

1. **S. Patwardhan** and Rachana Desai, Evaluation Reforms: Moving From Absolute to Relative Grading with Q-factor Control, **Journal of Engineering Education Transformations** Special Issue, 38(2),539–545, 2025
2. Rachana Desai and **S. Patwardhan**, Bridging Motivation and Technology: Integrating ARCS Model in LMS, Submitted and Accepted for publication to **Journal of Engineering Education Transformations** Special Issue, 2025
3. Archana Sharma and **S. Patwardhan**, The role of new technology in teaching Physics: Use of LMS for learner centric interaction outside the classrooms, **Journal of Engineering Education Transformations** Special Issue 2 (37), 2024
4. Santosh Mani, Krishnakant Mishra, Rakesh Tiwari, Archana Sharma, **Suren Patwardhan**, Sameer Hadkar, Pradip Sarawade, Characterization of PVA Dispersed Cholesteric Liquid Crystal; Investigation of Optical and Dielectric Properties., **Journal of Electrical Systems** Vol 20, 2024
5. **S. Patwardhan**, Sandeep Maurya, Akash Kumar, and K. R. Balasubramaniam, Tuning the properties of MoO_x layer for maximizing hole-selectivity and passivation of Si for carrier-selective Si solar cells (Submitted to **Progress in Photovoltaics**, first draft accepted, under revision)
6. A Kumar, S Maurya, **S. Patwardhan**, and K. R. Balasubramaniam, Opto-electronic properties of poly-crystalline La doped BaSnO₃ films deposited on quartz substrates *J.of Physics D: Applied Physics*, 54(18):185108, IOP, 2021
7. **S. Patwardhan**, A Sharma, SA Mani, and SR Chawade, Developing Analytical and Observational Approach in Undergraduate Learners, *Journal of Engineering Education Transformations*, 33, Spl. Issue pp 571-75, IUCCE, 2020
8. **S. Patwardhan**, and K. R. Balasubramaniam, Effect of ITO capping and its deposition parameters on electrical properties of MoO₃/Si carrier-selective contact solar cell, *INAE Letters*, 4(3):139-145, 2019

9. A. Kumar, S. Maurya, S. Chawla, **S. Patwardhan**, and K. R. Balasubramaniam, Effect of thickness on metal to semiconductor transition in La doped BaSnO₃ films deposited on high mismatch LSAT substrates, *Appl. Phys. Lett.*, 114(21):212103, 2019.

Conference Proceedings/Meetings/Book Chapters

1. Rachana Desai, **Suren Patwardhan**, "Tech-Based Motivational Design", Paper submitted and accepted at the 13th International Conference on Technologies for Innovations in Engineering Education (ICTIEE), 7-10 Jan 2026
2. **S. Patwardhan**, Rachana Desai, "Innovations in Teaching Mathematics for Quantum Computing Course", Abstract submitted and accepted at the 91st International Conference of the Indian Mathematical Society, 26-29 Dec 2025
3. A Sharma, **Suren Patwardhan**, S Mani, S Chawade, An e-learning approach to implement flipped learning pedagogy for physics course, *6th International Conference on Advances in Science and Technology*, IEEE, Dec 2023
4. Anand Bodhale, **Suren Patwardhan**, Using Literary Simulation Methods in Teaching Life-Skills to Engineering Graduates: A multidisciplinary Approach in Engineering Curriculum, Book Chapter - An Insight on English Language Teaching, Biblioteka Pbl, 2023
5. Santosh Mani, **Suren Patwardhan**, Samriti Khosla and Pradip Sarawade, Enhanced optical and dielectric properties of polymer dispersed liquid crystal for display applications, *Materials Today: Proceedings*, Elsevier, Nov 2022
6. Santosh Mani, **S. Patwardhan**, Krishnakant Mishra, Sameer Hadkar, Samriti Khosla, and Pradip Sarawade, Wavelength and temperature dependent refractive index of polymer dispersed nematic liquid crystal, *ICEEICT*, IEEE Explore, 1-4, Feb 2022
7. Santosh Mani, **S. Patwardhan**, Samriti Khosla, and Pradip Sarawade, "Investigation of Electrical, Acoustical and Optical Properties of Nanopowder Dispersed Cholesteric Liquid Crystal", *Book Chapter Recent Trends in Chem. Mat. Sciences*, Chapter 5 pages 27-32, B P International, 2022
8. Santosh Mani, **Suren Patwardhan**, Samriti Khosla and Pradip Sarawade, Optical properties of thermotropic liquid crystal dispersed with conducting polymer, *Materials Today: Proceedings*, Elsevier, 65: 3453-3460, Jan 2022
9. Santosh Mani, **S. Patwardhan**, Sameer Hadkar, Krishnakant Mishra, and Pradip Sarawade, Effect of polymer concentration on optical and electrical properties of liquid crystals for photonic applications, *Materials Today: Proceedings*, Elsevier, 62: 7035-7039, Jan 2022
10. **S. Patwardhan**, Sandeep Maurya, Akash Kumar, and Balasubramaniam Kavaipatti, Amorphous Silicon-Free Heterojunction Crystalline Silicon Solar Cells Employing MoO_x as Hole-Selective and Passivating Contact, *38th European Photovoltaic Conference and Exhibition*, Lisbon, Portugal, Sept 2021
11. **S. Patwardhan**, Sandeep Maurya, Akash Kumar, and Balasubramaniam Kavaipatti, Performance Evaluation of Hole-Selective and Passivating MoO_x layers on Si: A Comparative Study of ALD and Evaporation, *5th International Conference on Emerging Electronics, IIT Delhi, India 26-28 Nov 2020*, IEEE Explore
12. **S. Patwardhan**, Arpan Dhara, Akash Kumar, Sandeep Maurya, Shaibal Sarkar, and Balasubramaniam Kavaipatti, Atomic layer deposited MoO_x for controlling O:Mo ratio to obtain passivation and hole selectivity in Si heterojunction solar cells, *61st Electronic Materials Conference (EMC), University of Michigan 26-28 June, 2019*
13. Rekha Yadav, **Suren Patwardhan**, Shourie Ranjana J., M. Aslam, Balasubramaniam Kavaipatti, Aldrin Antony, and Dinesh Kabra, Tuning the band structure of nickel oxide for efficient hole extraction in perovskite solar cells, *4th International Conference on Emerging Electronics, Bengaluru, India 16-19 Dec 2018*
14. **S. Patwardhan**, S. K. Maurya, and K. R. Balasubramaniam, Estimation of Voltage-dependent Photocurrent Factor in Metal-oxide Based Carrier-selective Contact Silicon Solar Cell, *MRS Fall Meeting and Exhibit, Boston, Massachusetts, 25-30 Nov, 2018*
15. **S. Patwardhan**, Sandeep Maurya, Akash Kumar, and Balasubramaniam Kavaipatti, Amorphous Silicon-free Metal Oxides Based Carrier Selective Contacts to Crystalline Silicon Solar cells, *35th European Photovoltaic Conference and Exhibition, Brussels, Belgium, 24-28 Sept 2018*
16. **S. Patwardhan**, and Balasubramaniam Kavaipatti, Effect of ITO capping and its deposition parameters on electrical properties of MoO₃-Si-TiO₂ carrier selective contact solar cell, *6th International Conference on Advances in Energy Research (ICAER) 2017*