

Prof. Dr. Nandkumar T. Mandlik, Ph.D.

Present position

- Professor & Head
- Controller of Examination

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g <https://scholar.google.co.in/citations?user=NXsl91IAAAAJ&hl=en>

R^o <https://www.researchgate.net/profile/Nandkumar-Mandlik>

Work Experience

- Teaching: 28 years
- Research: 12 years

Personal Profile

I am currently working as a Professor and Head of the Department of Physics. I was awarded Ph.D. in Physics from Savitribai Phule Pune University, Pune in 2014. With 28 years of teaching and 12 years of research experience, I have a strong foundation in both research and teaching at the college level. I have published 30 research articles in national and international journals in the fields of material science, luminescence, radiation dosimetry and energy storage devices. I oversee instructing, counselling, and supervising students at Fergusson College (Autonomous), Pune, where I mentor graduate and post-graduate students. Currently six students are pursuing their Ph.D. under my guidance. Three research projects are ongoing which are funded by different funding agency such as IUAC, DAE-BRNS, ANRF-SERB-CRG. Various grants and fellowships were awarded to me during my service. I have attended many national and international conferences in and out of the country. Finally, I am a creative and passionate professor dedicated to fostering a team and trusting environment based on mutual respect and collaboration.

Course(s) Taught (Only Titles)

1. Mathematical Methods in Physics
2. Statistical Mechanics
3. Nuclear Physics
4. Oscillations, Waves and Sound

5. Mechanics
6. Heat and Thermodynamics
7. Solid State Physics

Field of Specialization/Areas of Interests

- Radiation Dosimetry
- Luminescence
- Energy Storage devices
- Material Science

Education

- **Ph.D. – (Physics):**
Title of the Thesis: Synthesis, Characterization and Thermoluminescence Studies of Some Sulphate and Oxide Micro-Nanophosphors for Gamma and Electron Dosimetry.
 Name of University / Institution: Savitribai Phule Pune University
 Year of Award: 2014
- **Master of Science- (Physics):** 1997
 University/College: Savitribai Phule Pune University
- **Bachelor of Science- (Physics):** 1995
 College, University, Place: Savitribai Phule Pune University

Fellowship/Awards/ Certifications/Achievements/Recognitions

1. Award of “Department of Science and Technology, India travel grant” to attend 25th International Conference on Atomic Collisions in Solids (ICACS-25), and 8th International Symposium on Swift Heavy Ions in Matter (SHIM-2012) held at Kyoto, Japan during 21st Oct to 27th Oct 2012.
2. Award of “UGC Teacher Fellowship” under Faculty Development Programme during Eleventh Plan (2007-2012) - 5th Jan 2011 to 2nd Sept. 2013.
3. Best Poster Award (1st Prize) in National Symposium on Emerging Plasma Techniques for Materials Processing and Industrial Applications (N-SEPMI-2014), February 13-15, 2014, Department of Physics, University of Pune.

Member of College Committees/ Professional Bodies and Others

College Level	Professional Bodies	Others
• Controller of Examination, Fergusson College (Autonomous), Pune, from Nov 2022 to till date.	1) Indian Physics Association	
• Dy. Controller of Examination, Fergusson College (Autonomous), Pune, June 2022 – Nov 2022	2) Indian Association of Physics Teachers	

• Member, Examination Committee, Fergusson College (Autonomous), Pune, June 2016 – May 2022		
• Chairman, Board of Studies in Physics, Fergusson College (Autonomous) Pune, from Feb 2022 till date	3) Luminescence Society of India	
• Member Board of Studies in Physics, Fergusson College (Autonomous) Pune, June 2016 – Feb 2022		
• Member Board of Studies in Physics, MIT Academy of Engineering, Alandi, June 2021 – June 2024		

Employment History

1) Organization : H. V. Desai College, Pune.

Role : Lecturer

Duration : (September 1998 to March 1999) - 7 Months

Responsibilities	• Teaching
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2) Organization : C. T. Bora College Shirur, Pune.

Role : Lecturer

Duration : (15/06/1999 to 11/12/2000) - 1 Year, 5 Months

Responsibilities	• Teaching
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3) Organization : Fergusson College, Pune

Role : Lecturer

Duration : (11/12/2000 to 31/12/2005) - 4 Year, 8 Months

Responsibilities	• Teaching • F.Y. B.Sc. Theory Incharge
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4) Organization : Fergusson College, Pune

Role : Assistant Professor

Duration : (01/01/2006 to 21/12/2013) - 7 Year, 7 Months

Responsibilities	• Teaching • S.Y. B.Sc. Theory Incharge
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5) Organization : Fergusson College, Pune

Role : Associate Professor

Duration : (22/12/2013 to 13/01/2021) - 7 Year

Responsibilities	• M.Sc. Co-Ordinator • Member, College Examination Committee
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6) Organization : Fergusson College, Pune

Role : Professor

Duration : 14/01/2021 to till date

Responsibilities	• Head of the Physics Department (15/02/2022 to till date) • Controller of Examination (CoE) (04/11/2022 to till date) • Dy. Controller of Examination (06/06/2022 to 03/11/2022)
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Research Projects

Title of the Project	Name of Funding Agency	Amount (Rs)	Duration (Year) (From To)	Type (Minor/Major)	Outcome
Development and Eval. Of MXene/PC Compo. Electrode with Organic Electrolyte for HED Supercapacitor	DAE-BRNS	35 lakhs	2022-2026	Major	Ongoing
Development of MXene materials for Energy Storage Devices	ANRF-SERB-CRG	40 lakhs	2024-2027	Major	Ongoing
TL/OSL Study of Micro- and Nanophosphors for Dosimetry of Ion Beams	IUAC	11 lakhs	2023-2026	Major	Ongoing
Development of nanophosphors and study of Thermoluminescence, Photoluminescence and Optically Stimulated Luminescence for gamma and electron dosimetry	BCUD	2.5 lakh	2015-2016	Minor	Completed

Research Publications in National and International Journals

1. Prashant M. Kakade, Avinash R. Kachere, Sukhada S. Pandey, Rahul Aher, Shrikrishna D. Sartale, Sandesh R. Jadkar, Priyanka Ruz, Vasanthakumaran Sudharshan, Rajendrakumar Sharma, Hansol Kim, Nandkumar T. Mandlik, Ravindra N. Bulakhe, Ji Man Kim, Hybrid Supercapacitor Performance Through Electrode Composites: $Ti_3C_2T_x$ Anode and Fe_3O_4 @Activated Carbon Cathode Integration. Energy Technology, 2026; 14:e202501914
2. Ajay D. Vartha, Pratik R. Patankar, P. D. Sahare, Mukesh Jite, Sanjay D. Dhole, Nandkumar T. Mandlik, Synthesis and thermoluminescence study of Dy^{3+} doped $NaCaPO_4$ phosphor. Applied Radiation and Isotopes, 227 (2026) 112261.

3. Kranti Prakashrao Hasnalkar, Arati Chandragupta Mehre, Sanchita Vishwas Chavan, Bhise Ramesh Baburao, Prashant M. Kakade, Nandkumar T. Mandlik, Sopan Mansing Rathod, Enhanced electrochemical performance of Tb³⁺ ions doped cobalt nanoferrite electrodes for supercapacitor application. *Journal of Alloys and Compounds*, 1037 (2025) 182202.
4. Pande S.S., Kakade P. M, Kachere A.R, Shinde P.S., Kolhe P.S., Sonawane K. M., Priyanka Ruz, V. Sudarshan, Dhole S. D., Sandesh R. Jadkar, Rajendrakumar Sharma, **Mandlik N. T.**, Investigation of Radiation Effects on Structural, Morphological, and Compositional Properties of WO₃ Nanostructures for Water Splitting Applications., *Journal of Radioanalytical and Nuclear Chemistry* (2024).
5. Vartha A. D., Patankar P.R., P. D. Sahare, Kachere A.R, Kakade P. M, Bhuli Bai, Preeti Kulkarni, Dhole S. D., **Mandlik N. T.**, Synthesis and Thermoluminescence Study of Dy³⁺ Doped ZnAl₂O₄ phosphor for High dose Dosimetry Application. *Journal of Radioanalytical and Nuclear Chemistry* (2024).
6. Patankar P.R., P. D. Sahare, Lucky Sharma, Vartha A. D., Kachere A.R, Kakade P. M, Dhole S. D., **Mandlik N. T.**, Optically Stimulated Luminescence, Thermoluminescence and Photoluminescence Characteristics of SrB₄O₇:Eu Phosphor *Journal of Radioanalytical and Nuclear Chemistry* (2024).
7. Kakade P. M., Kachere A.R., Sahare P. D., Deshmukh A. V., Dhole S. D., Jadkar S. R., **Mandlik N.T.**, Structural, compositional and luminescence studies of Y₂O₃:Eu³⁺ nanophosphor synthesized by sol-gel method. *J. Alloys Compd.* 2022; 928: 167106.
8. Martina S., Sahare P.D., Chauhan V., Kumar R., and **Mandlik N. T.**, Thermoluminescence in Eu doped NaLi₂PO₄ TLD nanophosphor: Effect of particle size on TL characteristics. *J. Lumin.* 2021; 238: 118207.
9. Kakade P. M., Kachere A. R., **Mandlik N. T.**, Rondiya S. R., Jadkar S. R., and Bhosale S. V., Graphene Oxide Assisted Synthesis of Magnesium Oxide Nanorods. *ES Mater. Manuf.* 2021; 12: 63-71.
10. Kachere A. R., Kakade P. M., Kanwade A. R., Dani P., **Mandlik N. T.**, Rondiya S. R., Dzade N. Y., Jadkar S. R., and Bhosale S. V., Zinc Oxide/Graphene Oxide Nanocomposites: Synthesis: Characterization and their Optical Properties. *ES Mater. Manuf.* 2022; 16: 19-29.
11. **Mandlik N. T.**, Varma V. B., Sahare P. D., Mathe V. L., Bhoraskar S. V., and Dhole S. D., Synthesis of Nanocrystalline Al₂O₃:C by Thermal Plasma Reactor for Radiation Dosimetry Applications. *J. Radioanal. Nucl. Chem.* 2021; 330:1533-1543.
12. Ali N., Sahare P. D., Kachere A. R., Kakade P. M., **Mandlik N. T.**, and Dhole S. D., Luminescence and Dosimetric Characteristics of Microcrystalline SrB₄O₇:Eu³⁺ Synthesized by Solid State Diffusion Method. *J. Radioanal. Nucl. Chem.* 2021; 330: 1397-1408.
13. **Mandlik N. T.**, Sahare P. D., Rondiya S. R., Dzade N. Y., Deore A. V., Dahiwal S. S., and Dhole S. D., Characteristics of K₂Ca₂(SO₄)₃:Eu TLD Nanophosphor for its Applications in Electron and Gamma rays Dosimetry. *Opt. Mater.* 2020; 109: 110272.
14. **Mandlik N. T.**, Sahare P. D., Dhole S. D., Balraj A., Effect of annealing temperature and phase change on thermoluminescence and photoluminescence of K₂Ca₂(SO₄)₃:Eu nanophosphor. *Nucl Instrum Methods Phys Res B NUCL INSTRUM METH B.* 2020; 480: 105–114.

15. **Mandlik N. T.**, Sahare P. D., Kulkarni M. S., Rawat N. S., Gaikwad N. P., and Dhole S. D., Study of Optically Stimulated Luminescence and Calculation of Trapping Parameters of $K_2Ca_2(SO_4)_3:Eu$ nanophosphor. *Appl. Radiat. Isot.* 2021;167:109388 (1-7).
16. **Mandlik N. T.**, Dhole S. D., and Sahare P. D., Effect of size variation and gamma irradiation on Thermoluminescence and Photoluminescence characteristics of $CaSO_4:Eu$ micro and nanophosphor. *Appl. Radiat. Isot.* 2020;159: 109080 (1-8).
17. **Mandlik N.T.**, Rondiya S. R., Dzade N. Y., Kulkarni M.S., Sahare P.D., Bhatt B.C., and Dhole S.D., Thermoluminescence, photoluminescence and optically stimulated luminescence characteristics of $CaSO_4:Eu$ phosphor: Experimental and density functional theory (DFT) investigations. *J. Lumin.* 2020;221: 117051 (1-10).
18. **Mandlik N. T.**, Varma V. B., Kulkarni M. S., Bhatt B. C., Sahare P. D., Raut S. A., Mathe V. L., Bhoraskar S. V., and Dhole S. D., Luminescence and dosimetric characteristics of nanocrystalline $Al_2O_3:C$ synthesized by thermal plasma reactor. *Nucl Instrum Methods Phys Res B NUCL INSTRUM METH B.* 2020; 466: 90-101.
19. Jitkar N. R., Bagul P. P., Kakade P. M., Kachere A. R., Dhole S. D., Dahiwalé S. S., Bhosale S. V., and **Mandlik N. T.**, Effects of 6 MeV Energy Electrons On Lattice Parameters Of $CaSO_4:Eu$ Nanophosphor. AIP Conf Proc. 2021;2335: 080009-1–080009-5. **ISBN: 978-0-7354-4079-1.**
20. **Mandlik N. T.**, Jitkar N. R., Bagul P. P., Dhole S. D., Dahiwalé S. S., Sahare P. D., Kachere A. R., and Kakade P. M. Study of Luminescence Characteristics of $K_2Ca_2(SO_4)_3:Eu$ Microphosphor by Electron and Gamma Irradiation. AIP Conf Proc. 2021;2335: 080014-1–080014-6. **ISBN: 978-0-7354-4079-1.**
21. **Mandlik N. T.**, Dhole S. D., Sahare P. D., Bakare J. S., Balraj A., and Bhatt B. C., Thermoluminescence studies of $CaSO_4:Dy$ nanophosphor for application in high dose measurements. *Appl. Radiat. Isot.* 2019;148: 253–261.
22. **Mandlik N. T.**, Bhoraskar V. N., Patil B. J., Dahiwalé S. S., Sahare P. D., and Dhole S. D., Thermoluminescence studies of $CaSO_4:Eu$ nanophosphor for electron dosimetry. *Indian J. Pure Appl. Phys.* 2017;55: 413-419.
23. Bhadane M. S., Dahiwalé S. S., Sature K. R., Patil B. J., **Mandlik N. T.**, Bhoraskar V. N., and Dhole S. D., Synthesis and TSL properties of $SnO_2:Eu$ nanophosphor for high gamma dosimetry. *J. Alloys Compd.* 2017; 695: 1918-1923.
24. Bhadane M. S., **Mandlik N. T.**, Patil B. J., Dahiwalé S. S., Sature K. R., Bhoraskar V. N., and Dhole S. D., $CaSO_4:Dy$ micro phosphor for thermal neutron dosimetry. *J. Lumin.* 2016; 170: 226-230.
25. Patil B. J., Bhadane M. S., Mandlik N. T., Dahiwalé S. S., Kulkarni M. S., Bhatt B. C., Bhoraskar V. N. and Dhole S. D., Thermoluminescence Response of $K_2Ca_2(SO_4)_3$ Nanophosphor Co-doped with Eu and Ce for Gamma Ray Dosimetry. *Solid State Physics AIP Conf Proc.* 2015; 1665: 050109-1–050109-3. **ISBN: 978-0-7354-1310-8.**
26. **Mandlik N. T.**, Sahare P. D., Kulkarni M. S., Bhatt B. C., Bhoraskar V. N., and Dhole S. D., Study of Optically Stimulated Luminescence of $K_2Ca_2(SO_4)_3:Cu$ nanophosphor for gamma ray dosimetry. *J. Lumin.* 2014;146: 128–132.
27. **Mandlik N. T.**, Patil B. J., Bhoraskar V. N., Sahare P. D., and Dhole S. D., Thermoluminescence of nanocrystalline $CaSO_4:Dy$ for gamma dosimetry and Calculation of Trapping Parameters using Deconvolution Method. *Solid State Physics AIP Conf Proc.* 2014; 1591: 369-371. **ISBN: 978-0-7354-1225-5.**

28. **Mandlik N. T.**, Patil B. J., Sahare P. D., Bhoraskar V. N., and Dhole S. D., Thermoluminescence study of $K_2Ca_2(SO_4)_3:Cu$ nanophosphor for gamma ray dosimetry. *Nucl Instrum Methods Phys Res B*. 2013;315: 273–277.
29. **Mandlik N. T.**, Bakare J. S., Sahare P. D., Bhoraskar V. N., and Dhole S. D., Thermoluminescence and Photoluminescence properties of $K_2Ca_2(SO_4)_3:Cu$ nanophosphor for gamma radiation dosimetry. *Indian J. Pure Appl. Phys.* 2012;50: 859-862.
30. **Mandlik N. T.**, Bhoraskar V. N., Sahare P. D., Patil B. J., Kumar V., Kulkarni M. S., and Dhole S. D., Thermoluminescence and Photoluminescence study of $CaSO_4:Dy$ nanophosphor for 6 MeV energy electron dosimetry. *Radiation Protection and Environment*. 2012; 34: 185-189

Participation in Conferences/Seminars/Symposia/Workshop:

1. **N. T. Mandlik**, V. N. Bhoraskar, P. D. Sahare, S. D. Dhole, Study of Thermoluminescence and Photoluminescence Properties of $K_2Ca_2(SO_4)_3:Eu$ Phosphor by electron irradiation, Proceedings of International Conference on Luminescence and its Applications “**ICLA- 2012**”, **Hyderabad, India, February 2012, ISBN No: 81-6717-806-5**
2. **Nandkumar T. Mandlik**, Synthesis of Nanophosphors for Radiation Dosimetry, Proceedings of National Conference on Advanced Materials and Applications “**NCAMA- 2016**”, **Department of Physics, Fergusson College Pune, March 2016, ISBN: 978-93-5235-011-7**
3. Suyog Raut, Aniket Gonde, V. L. Mathe, S. V. Bhoraskar, S. D. Dhole, P. D. Sahare, **Nandkumar Mandlik**, Synthesis of Al_2O_3 for Dosimetry Applications, Proceedings of National Conference on Advanced Materials and Applications “**NCAMA- 2016**”, **Department of Physics, Fergusson College Pune, March 2016, ISBN: 978-93-5235-011-7**
4. **N. T. Mandlik**, J. S. Bakare, P. D. Sahare, S. S. Dahiwal, S. D. Dhole, V. N. Bhoraskar, $CaSO_4:Dy$ nanoparticles for 6 MeV electron Dosimetry, Indo-Russian Workshop on Nanotechnology and Laser Induced Plasma-2009 “**IRNANO- 2009**”, **University of Delhi, Delhi, India, November 2009**
5. **N. T. Mandlik**, V. N. Bhoraskar, P. D. Sahare, S. D. Dhole, Thermoluminescence of $K_2Ca_2(SO_4)_3:Cu^{2+}$ Nanoparticles, National Seminar on Nano materials for Devices: Characterization and Applications “**NS- 2010**”, **Department of Physics, University of Pune, Pune, India, June 2010**
6. **N. T. Mandlik**, J. S. Bakare, P. D. Sahare, V. N. Bhoraskar, S. D. Dhole, Thermoluminescence of $K_2Ca_2(SO_4)_3:Cu^{2+}$ Nanoparticles for high energy electron dosimetry, National Conference on Luminescence and its Applications “**NCLA-2011**”, **Raipur, Chhattisgarh, India, February 2011**
7. **N. T. Mandlik**, J. S. Bakare, P. D. Sahare, V. N. Bhoraskar, S. D. Dhole, Thermoluminescence and Photoluminescence properties of $K_2Ca_2(SO_4)_3:Cu$ nanophosphor for gamma radiation dosimetry Conference on Accelerator Radiation Safety “**CARS- 2011**”, **Bhabha Atomic Research Centre (BARC), Mumbai, India, November 2011**
8. **N. T. Mandlik**, S. D. Dhole, P. D. Sahare, V. N. Bhoraskar, Synthesis of $K_2Ca_2(SO_4)_3:Eu$ nanorods for 6.5 MeV electron dosimetry, International Conference on Nanomaterials and Nanotechnology “**ICNANO- 2011**”, **University of Delhi, Delhi, India, December 2011**
9. S. D. Dhole, **N. T. Mandlik**, P. D. Sahare, V. N. Bhoraskar, Irradiation effects of 6.5 MeV electrons on the $CaSO_4:xEu^{2+}$ nanophosphor and application to dosimetry, International Conference on Nanomaterials and Nanotechnology “**ICNANO- 2011**”, **University of Delhi, Delhi, India, December 2011**

10. **N. T. Mandlik**, V. N. Bhoraskar, P. D. Sahare, S. D. Dhole, Study of Thermoluminescence and Photoluminescence Properties of $K_2Ca_2(SO_4)_3$: Eu Phosphor by electron irradiation, International Conference on Luminescence and its Applications “**ICLA- 2012**”, **Hyderabad, India, February 2012**
11. **N. T. Mandlik**, V. N. Bhoraskar, P. D. Sahare, M. S. Kulkarni, S. D. Dhole, Thermoluminescence study of $CaSO_4:Dy$ nanophosphors for 6MeV energy electron dosimetry, 30th IARP Conference, National Conference on Radiological Protection and Safety in Nuclear Reactors and Radiation Installations “**IARPNC- 2012**”, **Mangalore University, Mangalore, Karnataka, India, March 2012**
12. **N. T. Mandlik**, B. J. Patil, V. N. Bhoraskar, P. D. Sahare, S. D. Dhole, Photoluminescence and Thermoluminescence Study of $K_2Ca_2(SO_4)_3$: Cu Nanophosphor for Gamma Ray, The 25th International Conference on Atomic Collisions in Solids “**ICACS- 25**”, **Kyoto University, Japan, October 2012**
13. **N. T. Mandlik**, V. N. Bhoraskar, P. D. Sahare, S. D. Dhole, Luminescence Properties of $K_2Ca_2(SO_4)_3:Eu$ micro and nanophosphor for electron dosimetry, National Conference on Luminescence and its Applications “**NCLA-2013**”, **Bangalore, India, January 2013**
14. **N. T. Mandlik**, B. J. Patil, V. N. Bhoraskar, P. D. Sahare, S. D. Dhole, Synthesis and Thermoluminescence Properties of $K_2Ca_2(SO_4)_3:Eu$ nanophosphor for high dose gamma ray dosimetry, National Conference on Functional Nanomaterials “**NCFN- 2013**”, **Department of Physics, University of Pune, India, Feb 2013**
15. **N. T. Mandlik**, B. J. Patil, V. N. Bhoraskar, P. D. Sahare, S. D. Dhole, Thermoluminescence of nanocrystalline $CaSO_4:Dy$ and Calculation of Trapping Parameters using Deconvolution Method, Raman Memorial Conference “**RMC- 2013**”, **Department of Physics, University of Pune, February 2013**
16. **N. T. Mandlik**, V. N. Bhoraskar, P. D. Sahare, S. D. Dhole, Effect of micro to nano size variation on Thermoluminescence characteristics of $CaSO_4$: Eu phosphor for dosimetry applications, International Workshop on Nanotechnology and Advanced Functional Materials “**NTAFM- 2013**”, **National Chemical Laboratory, Pune, India, July 2013**
17. **N. T. Mandlik**, V. N. Bhoraskar, P. D. Sahare, S. D. Dhole, Thermoluminescence of nanocrystalline $CaSO_4:Dy$ for gamma dosimetry and Calculation of Trapping Parameters using Deconvolution Method, 58th DAE Solid State Symposium “**DAE-SSPS-2013**”, **Thaper University, Patiala, December 2013**
18. **N. T. Mandlik**, Vijay Varma, Suyog Raut, P. D. Sahare, V. N. Bhoraskar, S. D. Dhole, V. L. Mathe, S. V. Bhoraskar, Synthesis of nanocrystalline $Al_2O_3:C$ by Thermal Plasma Reactor for Dosimetric Purposes, National Symposium on Emerging Plasma Techniques for Materials Processing and Industrial Applications “**N-SEPMI-2014**”, **Department of Physics, University of Pune, February 2014**
19. **N. T. Mandlik**, Vijay Varma, M. S. Kulkarni, B. C. Bhatt, K. P. Muthe, V. N. Bhoraskar, P. D. Sahare, V. L. Mathe, S.V. Bhoraskar, S. D. Dhole, Study of dosimetric characteristics of nanocrystalline $Al_2O_3:C$ Synthesized by Thermal Plasma Reactor, National Conference on Advances in Radiation Measurement Systems and Techniques “**IARPNC- 2014**”, **BARC Mumbai, March 2014**
20. **N. T. Mandlik**, P. D. Sahare, S. S. Dahiwal, B. J. Patil, M. S. Bhadane, V. N. Bhoraskar, S. D. Dhole, Thermoluminescence characteristic and Phase Transition of $K_2Ca_2(SO_4)_3:Eu$ nanophosphor

at different annealing temperatures, National Conference on Advances in Radiation Measurement Systems and Techniques “IARPNC- 2014”, BARC Mumbai, March 2014

21. **N. T. Mandlik**, P. D. Sahare, S. V. Bhoraskar, S. D. Dhole, Development of nanophosphors and study of Thermoluminescence, Photoluminescence and Optically Stimulated Luminescence for gamma and electron dosimetry, Regional Research Conference “Innovation- 2015”, Fergusson College Pune, June 2015
22. **N. T. Mandlik**, M. S. Kulkarni, M. Kumar, P. D. Sahare, Study of Thermoluminescence (TL) and Optically Stimulated Luminescence (OSL) of $\text{CaSO}_4:\text{Eu}$ Nanophosphor, Regional Research Conference “Innovation- 2015”, Fergusson College Pune, June 2015
23. **N. T. Mandlik**, Kishor Gavhane, P. D. Sahare, S. V. Bhoraskar and S. D. Dhole, Synthesis of nanocrystalline $\text{Al}_2\text{O}_3:\text{B}$ for radiation dosimetry, National Symposium on Medical Biophysics, Department of Physics, University of Pune, September 2015
24. **N. T. Mandlik**, K. Gavhane, R. Bagade, Synthesis, Thermoluminescence and Photoluminescence Studies on $\text{Y}_2\text{O}_3:\text{Eu}^{3+}$ nanophosphor, National Conference on Nanoscience and its Applications to Engineering “NCNSAE-2015”, MIT College of Engineering Pune, December 2015
25. M. Latambale, B. Pathan, **N. T. Mandlik**, Thermoluminescence characteristic of $\text{K}_2\text{Ca}_2(\text{SO}_4)_3:\text{Eu}^{2+}$ and $\text{K}_2\text{Ca}_2(\text{SO}_4)_3:\text{Eu}^{3+}$ nanophosphor, National Conference on Nanoscience and its Applications to Engineering “NCNSAE-2015”, MIT College of Engineering Pune, December 2015
26. S. Raut, A. Gonde, V. L. Mathe, S. V. Bhoraskar, S. D. Dhole, P. D. Sahare, **N. T. Mandlik**, Synthesis of Al_2O_3 for Dosimetry Applications, National Conference on Advanced Materials and Applications “NCAMA- 2016”, Department of Physics, Fergusson College Pune, March 2016
27. **N. T. Mandlik**, Synthesis of Nanophosphors for Radiation Dosimetry, National Conference on Advanced Materials and Applications “NCAMA- 2016”, Department of Physics, Fergusson College Pune, March 2016
28. R. Bagade, B. Pathan, M. Latambale, S. D. Dhole, P. D. Sahare, **N. T. Mandlik**, Synthesis of $\text{Y}_2\text{O}_3:\text{Eu}^{3+}$ nanophosphor, National Conference on Advanced Materials and Applications “NCAMA – 2016”, Department of Physics, Fergusson College Pune, March 2016
29. B.V. Bhaskara Rao, Neha Ghodke, **N. T. Mandlik** and S. N. Kale, Radar Absorption Studies of Nanomaterial's-based paints, National Conference on Advanced Materials and Applications “NCAMA- 2016”, Department of Physics, Fergusson College Pune, March 2016
30. **N. T. Mandlik**, P. D. Sahare, S. D. Dhole, Development of nanophosphors and study of Thermoluminescence, Photoluminescence and Optically Stimulated Luminescence for gamma and electron dosimetry, Regional Research Conference “Innovation- 2016”, B. R. Gholap College Pune, Oct 2016
31. **N. T. Mandlik**, Yogita Dhumale, Study of luminescence properties of $\text{Y}_2\text{O}_3:\text{Eu}^{3+}$ nanophosphor, 5th Bharatiya Vigyan Sammelan and Expo, Fergusson College Pune, May 2017
32. **N. T. Mandlik**, S. D. Dhole, P. D. Sahare, Synthesis and Study of Thermoluminescence characteristic of Al_2O_3 and $\text{Al}_2\text{O}_3:\text{Eu}$ nanophosphor, International Conference on Advanced Materials Development & Performance “AMDP- 2017”, Department of Physics, Savitribai Phule Pune University, July 2017
33. **N. T. Mandlik**, Thermoluminescence and Optically Stimulated Luminescence of nanophosphors and their applications, Two days State level Conference on Advanced Methods for Material

Characterization “SCAMMC- 2018”, Department of Physics B. J. A. C. S. College, Ale, Junnar, Pune, Jan 2018

34. **N. T. Mandlik**, P. D. Sahare, S. D. Dhole, Thermoluminescence and Photoluminescence characteristics of $\text{CaSO}_4\text{:Eu}$ nanophosphor, International Conference on Nanotechnology for Human Welfare “**ICNHW-2018**”, **Haribhai V. Desai College, Pune, February 2018**
35. **N. T. Mandlik**, M. S. Kulkarni, B. C. Bhatt, P. D. Sahare, V. L. Mathe, S. D. Dhole, Study of Thermoluminescence and Optically Stimulated Luminescence of nanocrystalline $\text{Al}_2\text{O}_3\text{:C}$, International Conference on Nanotechnology for Human Welfare “**ICNHW-2018**”, **Haribhai V. Desai College, Pune, February 2018**
36. Y. Dhumale, Y. Diggikar, S. Pote, P. Pawar, P. D. Sahare, S. D. Dhole, **N. T. Mandlik**, Thermoluminescence study of $\text{Y}_2\text{O}_3\text{:Eu}$ nanophosphor, International Conference on Nanotechnology for Human Welfare “**ICNHW-2018**”, **Haribhai V. Desai College, Pune, February 2018**
37. **N. T. Mandlik**, Study of luminescence characteristics of $\text{Al}_2\text{O}_3\text{:Eu}$ nanophosphor, National Conference on Luminescence and its Applications “**NCLA-2018**”, **Trivandrum, India, February 2018**
38. **N. T. Mandlik**, Y. Dhumale, S. D. Dhole, P. D. Sahare, Thermoluminescence and Photoluminescence studies of $\text{Y}_2\text{O}_3\text{:Eu}^{3+}$ nanophosphor synthesized by Sol-Gel method, National Conference on Luminescence and its Applications “**NCLA-2018**”, **Trivandrum, India, February 2018**
39. **N. T. Mandlik**, Synthesis of $\text{Y}_2\text{O}_3\text{:Eu}^{3+}$ Nanophosphor by Sol-Gel Method for Thermoluminescence Study, 21st National Conference on Solid State Nuclear Track Detectors and Their Applications “**SSNTDs- 21**”, **Department of Physics & Astrophysics, University of Delhi, January 2021**
40. **N. T. Mandlik**, Synthesis of Nanocrystalline $\text{Al}_2\text{O}_3\text{:C}$ by Thermal Plasma Reactor for Radiation Dosimetry Applications, Third National Conference on Radiation Awareness and Detection in Natural Environment “**RADNET-III**”, **Department of Physics, H.N.B. Garhwal University, SRT Campus, Tehri Garhwal, Uttarakhand, March 2021**
41. Successfully completed the workshop “**The Intertwining strands in Physics and Mathematics: Fourier Analysis**” held at IISER Pune from 19th – 23rd January 2018.
42. Successfully completed National Webinar entitled: “**Assessment and Accreditation: A revised Accreditation framework for affiliated colleges**” conducted by IQAC Cluster India, from 14th – 17th April 2020.
43. **Invited Talk: On “Nanophosphors for Radiation Dosimetry” in One week Online AICTE-ISTE Sponsored Refresher Program on “Recent Development in Advanced Materials”,** Organized by Department of F. Y. B. Tech., G. H. Raisoni College of Engineering and Management, Wagholi, Pune-412207 during 1st to 6th March 2021.
44. Attended Online International Conference on ‘**Battery Science and Technology – 2022**’ S & T Digital IISER Pune, June 2-4, 2022.
45. Attended a conference on “**Careers in Science and Technology**” organized by S & T Digital from **5th- 6th November, 2022.**
46. Attended National Seminar on ‘**Implementation of Multi and Trans-Disciplinary Education NEP 2020**’ under UGC-STRIDE Component-I from **18th to 20th January 2023** at Fergusson College (Autonomous) Pune.

47. Participated in “**International Conference on Higher Education, Research and Innovation**” (ICHERI-22) organized by S&T Digital held from **July 28 -30, 2022**.
48. Participated two-day workshop on ‘**Fundamentals of Battery Science**’ under UGC-STRIDE Component-I held from **22nd to 23rd July 2022** at Fergusson College (Autonomous) Pune.
49. Delivered a talk on “**Research Opportunities in Physics**” in One-day workshop on “**Skill Enhancement in Physics**” on **24th February 2023**, at Shardabai Pawar Mahila Arts, Commerce, and Science College, Shardanagar, Malegaon Bk., Baramati.
50. Presented an oral presentation on “**Luminescence Studies of Europium Doped Y₂O₃ Nanophosphor Synthesized by Sol-Gel Method**” and a Poster Presentation on “**Synthesis and Characterization of 2D MXene for Supercapacitor Application**” at **First International Conference Radiation Awareness and Detection in Natural Environment (RADNET-2023)** at Dolphin (PG) Institute of Biomedical and Natural Sciences (DIBNS) at Dehradun, on **2nd to 4th March 2023**.
51. Presented a poster presentation on “**Synthesis and Characterization of 2D MXene for Supercapacitor Application**”. N.T. Mandlik, P.M. Kakade, A.R. Kachere, P. Ruz, V. Sudarsan, S.R. Jadkar **First International Conference on Radiation Awareness and Detection in Natural Environment (RADNET-IV)**, held at Dolphin (PG) Institute of Biomedical and Natural Sciences, Dehradun, India, during **March 2-4, 2023**.
52. Delivered an invited talk, worked as a chairperson and Presented paper in **National conference on Radiation Awareness and Detection in Natural Environment (RADNET-V)** held at Graphic Era deemed to be University, Dehradun on **7th - 9th October 2024**.
53. Presented a poster presentation on “**Thermoluminescence Study of a Highly Sensitive, and a Low -Z NaCaPO₄:Dy³⁺ Micro-Phosphor**”. Nandkumar Mandlik, Pratik Patankar, Ajay D. Vartha, P. D. Sahare, Sanjay D. Dhole **Fifth National Conference on Radiation Awareness and Detection in Natural Environment, (RADNET-V)**, held on **October 7-9, 2024** at Graphic Era University, Dehradun, India.
54. Delivered a lecture in a one-day National webinar on **Recent trades in Physical Science Research** organized by Shri Muktanand College, Gangapur on **7th March 2025**
55. Delivered an invited talk on “**2D Ti₃C₂T_x MXene with Ferrite Composites for Energy Storage Application**” in **5th International Conference on Advanced Materials Synthesis, Characterization and Applications (AMSCA-2025)**, held on **June 25-27, 2025** at Sungkyunkwan University (SKKU), South Korea.
56. Presented an oral presentation on “**Development and Evaluation of 2D Ti₃C₂T_x Mxene with magnetite and Activated Carbon Composite Electrodes for Hybrid Asymmetric Supercapacitor Application**” Nandkumar Mandlik, Prashant Kakade, Avinash Kachere, Rahul Aher, Sandesh Jadkar, Priyanka Ruz, V. Sudarshan, Ravindra Bulakhe, Ji Min Kim in 3 day national conference on **Recent Research Trends in Advance Materials and Nuclear Science (RRTAMNS, 20-22 November 2025)** organized by Department of Physics Savitribai Phule Pune University.

Events Organized/Coordinated:

Sr. No.	Name of the Event	Name of organizing Institute/ College/University	Nature of contribution	Dates
1	Innovation 2015, Regional Research Conference- 23 June 2015, Fergusson College Pune.	Fergusson College Pune.	Member	23 June 2015
2	National Conference on Advanced Materials and Applications (NCAMA 2016) 4th & 5th March 2016, Department of Physics, Fergusson College Pune.	Department of Physics, Fergusson College Pune.	Member	4-5 March 2016,
3	International Conference on Nanotechnology for Human Welfare (ICNHW-2018), 01-03 February 2018, Haribhai V. Desai College, Pune.	Haribhai V. Desai College, Pune.	Member	01-03 February 2018

Additional skills/Activities**Books:**

1. *Oscillations, Waves & Sound and Optics.*
Dr. NandkumarMandlik, Dr. Anil Garje, Prof. Mahendra Waghmare,
Success Publications Pune, India, June-2014, ISBN: 978-93-5158-122-2
2. *Mathematical Methods in Physics & Electronics.*
Dr. Vasant G. Wagh, **Dr. NandkumarMandlik**, Dr. Sopan M. Rathod
Success Publications Pune, India, Feb-2015, ISBN: 978-93-84916-32-9
3. *Thermodynamics and Statistical Physics*
Dr. Nandkumar T.Mandlik, Sanket R. Gogte,
Success Publications Pune, India, Dec-2015, ISBN: 978-93-5158-489-6

Course Content Developed (e-content)

1. **Mathematical Methods in Physics**
2. **Statistical Mechanics**
3. **Nuclear Physics**
4. **Oscillations, Waves and Sound**