

## Teaching Faculty Profile

- Name : **Dr. Nilesh S. Ugemuge**
- Designation : Assistant Professor
- Date of Birth : 05/08/1984
- Unique ID (Aadhar No.) : 488460694017
- Education Qualifications : Ph.D. (Physics), Ph.D. (Management).
- Work Experience : 15 Years
- Teaching : 15 Years
- Research : 13 Years
- Area of Specialization : **Material Science**
- Courses taught : B.E., B.Sc. & M.Sc.
- Research guidance (Number of Students): **04**
- Ph.D. (Completed/Ongoing) : **(01-Thesis Submitted,03-Ongoing)**
- Patents (Filed & Granted) : 04-Patent Published
- Design Rights : 01 Granted
- Copyrights : 05 Granted
- Research Publications : 50
- Books published : 20
- Date of Joining : 31/08/2019
- **Life Members** :
  1. Life Member, International Association of Engineers (IAEng).
  2. Life Member, Indian Society for Technical Education (ISTE).
  3. Life Membership: Indian Society for Training & Development (ISTD), New Delhi.
  4. Life Membership: The Indian Science Congress Association, India.
  5. Life Member, Luminescence Society of India (LSI).
  6. Life Member, Shiksha Sanskriti Utthan Nyas (SSUN).
  7. Life Member, Gondwana University Young Teachers Association.
  8. Life Member, Council for Teachers Education (CTE), Maharashtra Chapter.
  9. Annual Member, Condensed Matter Research Society, Bikaner.
  10. Life Member, BRSM Gondwana University, Gadchiroli

- Member BOS/Senate/Academic Council/ Management Council: **Member BOS Physics**

### **Research Papers Published**

1. SP Dhale, **NS Ugemuge**, V Singh, RV Barde, SV Moharil, Wet-chemical synthesis of ‘snow stone’ chiolite  $\text{Na}_5\text{Al}_3\text{F}_{14}$ :  $\text{Ce}^{3+}$ ,  $\text{Gd}^{3+}$  UVB emitting phosphors, Journal of Molecular Structure 1320, 139533(2025) (**Elsevier**) (**Scopus, SCI, UGC-Care**).
2. A Pusdekar, **NS Ugemuge**, R Nafdey, SV Moharil, Spectroscopic analysis of  $\text{CaGd}_2(\text{WO}_4)_4$  phosphor doped with  $\text{Nd}^{3+}$  and  $\text{Yb}^{3+}$  for NIR applications, Journal of Molecular Structure 1319, 139409(2025) (**Elsevier**) (**Scopus, SCI, UGC-Care**).
3. SP Dhale, **NS Ugemuge**, V Singh, SV Moharil,  $\text{Na}_2\text{MgAlF}_7:\text{Ln}^{3+}$  ( $\text{Ln}^{3+} = \text{Ce, Gd}$ ) weberite downshifting phosphor for designing UVB LED, Journal of Materials Science, 1-12(2024) (**Springer**) (**Scopus, SCI, UGC-Care**).
4. SP Dhale, **NS Ugemuge**, VS Singh, SV Moharil, UVB emitting phosphors based on singly and co-doped  $\text{Ce}^{3+}$ ,  $\text{Gd}^{3+}$  in  $\text{Li}_4\text{ZrF}_8$  phosphors, Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy, 125050(2024) (**Elsevier**) (**Scopus, SCI**).
5. A Pimpalkar, **N Ugemuge**, A Mistry, S Dhale, RB Joshi, S Khapre, Judd–Ofelt Analysis and Photoluminescence in  $\text{Ca}_2\text{MgSi}_2\text{O}_7:\text{Sm}^{3+}$  Phosphor, Journal of Electronic Materials, 1-11(2024) (**Springer**) (**Scopus, SCI, UGC-Care**).
6. A Pusdekar, **N Ugemuge**, NS Bajaj, R Nafdey, S Moharil, NIR emission in Nd-doped  $\text{Li}_3\text{Ba}_2\text{La}_3(\text{W})_8$  phosphor, International Journal of Modern Physics B, 2550090. (2024) (**World Scientific**) (**Scopus, SCI, UGC-Care**).
7. G Warutkar, **N Ugemuge**, S Dhale, PV Tumram, PK Tawalare, R Nafdey, Host sensitized mid-infrared emission in  $\text{LiCa}_3\text{MgV}_3\text{O}_{12}$  activated with  $\text{Er}^{3+}$ , Emergent Materials, 1-7(2024) (**Springer**) (**Scopus, SCI, UGC-Care**).
8. A Mungale, SA Shah, A Pusdekar, **NS Ugemuge**, S Kulkarni, SV Moharil, Near infrared emission in  $\text{Nd}^{3+}$  and  $\text{Nd}^{3+}/\text{Yb}^{3+}$ -co-doped  $\text{LiY}(\text{WO}_4)_2$  phosphor, Journal of Materials Science: Materials in Electronics 35 (20), 1391(2024) (**Springer**) (**Scopus, SCI, UGC-Care**).
9. G Warutkar, NS Ugemuge, PV Tumram, SP Dhale, A Pusdekar, R Nafdey, NIR emission in Nd-doped  $\text{Ca}_2\text{KMg}_2\text{V}_3\text{O}_{12}$  phosphor for laser applications, International Journal of Modern Physics B, 2550073(2024) (**World Scientific**) (**Scopus, SCI, UGC-Care**).
10. Kshetrapal, S., Ugemuge, N., Nafdey, R., Singla, R., Kashyap, M.K. and Moharil, S.V., **2024**. Electronic structure analysis of  $\text{Bi}_2\text{WO}_6$  and observation of near infrared emission

- on Nd<sup>3+</sup> doping. Journal of Alloys and Compounds, p.173966. (**Elsevier**) (**Scopus, SCI, UGC-Care**).
11. S Dhale, N Ugemuge, VS Singh, SR Dhakate, A Bharti, R Kumar, Study of Luminescence Behavior in Dy<sup>3+</sup>-Activated Ba<sub>3</sub>Ca<sub>2</sub>(PO<sub>4</sub>)<sub>3</sub>F, Journal of Electronic Materials, 1-11(2024) (**Springer**) (**Scopus, SCI, UGC-Care**).
  12. S Kshetrapal, NS Ugemuge, R Nafdey, SV Moharil, Synthesis and luminescence study of the rare earth ion (Nd) doped Sr<sub>3</sub>Bi(PO<sub>4</sub>)<sub>3</sub> phosphor, International Journal of Modern Physics B, 2550065. (2024) (**World Scientific**) (**Scopus, SCI, UGC-Care**).
  13. S Kshetrapal, NS Ugemuge, K Sharma, R Nafdey, SV Moharil, Luminescence of some lanthanide activators in NaBi (MoO<sub>4</sub>)<sub>2</sub>, Journal of Optics, 1-9(2024) (**Springer**) (**Scopus, SCI, UGC-Care**).
  14. BP Bawanthade, AA Mistry, N Ugemuge, IS Chaudari, SJ Dhoble, Synthesis and study of optical properties of a Gd<sup>3+</sup>- doped NaYF<sub>4</sub> phosphor for phototherapy lamp application, Luminescence 39 (4), e4736. (2024). (**Wiley**) (**Scopus, SCI, UGC-Care**).
  15. S Dhale, NS Ugemuge, R Nafdey, VS Singh, SV Moharil, Luminescence of some lanthanides in synthetic yttrium gargarinite (NaCaYF<sub>6</sub>), International Journal of Modern Physics B, 2550037. (2024) (**World Scientific**) (**Scopus, SCI, UGC-Care**).
  16. A Pusdekar, NS Ugemuge, R Nafdey, P Singh, IM Nagpure, SV Moharil, NIR emission from Nd<sup>3+</sup> doped Sr<sub>3</sub>WO<sub>6</sub> distorted triclinic phosphor, Radiation Effects and Defects in Solids 179 (3-4), 315-328,(2024).
  17. S Balakrishnan, A Tiwari, S Iyer, P Kumbhar, A Pusdekar, N Ugemuge, Energy transfer from Ce<sup>3+</sup> to Eu<sup>3+</sup> in the spinel structure of ZnAl<sub>2</sub>O<sub>4</sub> phosphor for optoelectronic applications, Radiation Effects and Defects in Solids, 1-12(2024) (**Taylor & Francis**) (**Scopus, SCI, UGC-Care**).
  18. Bawanthade, B., Mistry, A., Ugemuge, N. and Dhoble, S.J., **2024**. Synthesis and study of structure and optical properties of RE<sup>3+</sup> (RE= Sm<sup>3+</sup> and Tb<sup>3+</sup>) activated Ca<sub>8</sub>NaBi (PO<sub>4</sub>)<sub>6</sub>F<sub>2</sub> orange-red and green emitting phosphors prepared by Pechini method. Journal of Materials Science: Materials in Electronics, 35(5), p.355. (**Springer**) (**Scopus, SCI, UGC-Care**).
  19. Pusdekar, A., Ugemuge, N.S., Mistry, A.A. C. Gayner & S. V. Moharil ,**2024**, Synthesis and luminescence properties of intensely red-emitting Na<sub>5</sub>Y(WO<sub>4</sub>)<sub>4</sub>:Eu<sup>3+</sup> phosphor. J Mater Sci: Mater Electron 35, 336. (**Springer**) (**Scopus, SCI, UGC-Care**).

20. S Dhale, NS Ugemuge, V Singh, MS Shekhawat, SV Moharil, “**Hydrothermal synthesis and luminescence of NaCaYF<sub>6</sub>: Ln<sup>3+</sup> (Ln<sup>3+</sup>= Ce, Gd) synthetic gagarinite for UV applications**”, *Optical Materials* 148, 114888(2024). (**Elsevier**) (**Scopus, SCI, UGC-Care**).
21. Bawanthade, B.P., Mistry, A.A., Ugemuge, N.S. and Dhoble, S.J., 2024. Synthesis and study of luminescence properties of a deep red–emitting phosphor K<sub>2</sub>LiAlF<sub>6</sub>: Mn<sup>4+</sup> for plant cultivation. *Luminescence*, 39(2), p.e4629. (**Wiley**) (**Scopus, SCI, UGC-Care**).
22. Bawanthade, B.P., Mistry, A.A., Ugemuge, N., Chaudari, I.S. and Dhoble, S.J., 2024. Synthesis and study of optical properties of a Gd<sup>3+</sup>-doped NaYF<sub>4</sub> phosphor for phototherapy lamp application. *Luminescence*, 39(4), p.e4736. (**Wiley**) (**Scopus, SCI, UGC-Care**).
23. S Kshetrapal, NS Ugemuge, K Sharma, SV Moharil, SP Wankhede, “Luminescence of Nd<sup>3+</sup> activator in CaBi<sub>2</sub>O<sub>4</sub>” AIP Conference Proceedings 2974 (1)2024. (**Scopus and UGC-Care**)
24. G Warutkar, NS Ugemuge, S Dhale, A Mistry, K Sharma, SV Moharil, Luminescence in NaCa<sub>2</sub>Mg<sub>2</sub>V<sub>3</sub>O<sub>12</sub> garnet, AIP Conference Proceedings 2974 (1)2024 (**Scopus and UGC-Care**)
25. KS Salotkar, SK Patle, VD Maske, AZ Khan, SU Bhonsule, KG Rewatkar, Influence of dopant on characteristics of lithium sulfate monohydrate single crystal, AIP Conference Proceedings 2974 (1) 2024. (**Scopus and UGC-Care**)
26. BP Bawanthade, AA Mistry, NS Ugemuge, SV Moharil, Synthesis of Tb doped NaYF<sub>4</sub> crystals by using solid state metathesis with different concentrations of Tb, AIP Conference Proceedings 2974 (1)2024. (**Scopus and UGC-Care**)
27. BP Bawanthade, AA Mistry, NS Ugemuge, SJ Dhoble, Synthesis and study of luminescence properties of a deep red–emitting phosphor K<sub>2</sub>LiAlF<sub>6</sub>:Mn<sup>4+</sup> for plant cultivation, *Luminescence*, 2023. (**Scopus and UGC-Care**)
28. SP Dhale, NS Ugemuge, Metal Oxide-Based Luminescent Technologies, *Luminescent Metal Oxides: Materials to Technologies*, 1, 2023. (**CRC Press-Book Chapter**)
29. A Pusdekar, NS Ugemuge, R Nafdey, P Singh, IM Nagpure, SV Moharil, NIR emission from Nd<sup>3+</sup> doped Sr<sub>3</sub>WO<sub>6</sub> distorted triclinic phosphor, *Radiation Effects and Defects in Solids*, 1-14, 2023. (**Taylor & Francis**) (**Scopus, SCI, UGC-Care**).
30. B Bawanthade, A Mistry, N Ugemuge, Synthesis and Study of Optical Properties of Dy<sup>3+</sup> Doped Yellow Emitting Fluoroapatite for White-LED Applications, *Journal of Physics: Conference Series* 2576 (1), 012010, 2023. (**IoP**) (**Scopus, SCI, UGC-Care**).

31. Nd<sup>3+</sup> emission in the garnet structure of LiCa<sub>3</sub>ZnV<sub>3</sub>O<sub>12</sub> phosphor, Radiation Effects and Defects in Solids (2023), DOI: 10.1080/10420150.2023.2258435. (Taylor & Francis) (Scopus, SCI, UGC-Care).
32. “Host sensitization of luminescence of lanthanide activators in NaBi(WO<sub>4</sub>)<sub>2</sub>”, Radiation Effects and Defects in Solids(2023), DOI: 10.1080/10420150.2023.2240935 (Taylor & Francis)(Scopus, SCI, UGC-Care).
33. “Scrapped Cigarette filter and Coconut coir Filled Polymer Composite” Materials Today Proceedings (Elsevier). 33, 4311-4317(2020) (Scopus, SCI, UGC-Care).
34. “Preparation of CaF<sub>2</sub> based phosphors by solid state metathesis” in Physica B-406(2010)45-47(Elsevier) (Scopus, SCI, UGC-Care).
35. “Solid State Metathesis of KMgF<sub>3</sub>:Eu<sup>2+</sup> Phosphor” in ISSN 1061-3862, International Journal of Self Propagating High Temperature Synthesis 21(2012)162–166(Springer) (Scopus, SCI, UGC-Care).
36. “Photoluminescence study of Tb<sup>3+</sup> doped CaCO<sub>3</sub> synthesized by Solid State Metathesis”, AIP Conf. Proc. 1728, 020324 (2016)1-4. (Scopus and UGC-Care)
37. One step combustion synthesis and photoluminescence of red emitting phosphor Y<sub>4</sub>Al<sub>2</sub>O<sub>9</sub>:Eu<sup>3+</sup> AIP Conference Proceedings 2104 (1), 020036,1-4. (Scopus and UGC-Care)
38. Perspectives of Hydrothermal Synthesis of Fluorides for Luminescence Applications: Fluorides Phosphors for Luminescence, Emerging Synthesis Techniques for Luminescent Materials, IGI Global, USA, DOI: 10.4018/978-1-5225-5170-6.ch008.(Scopus)
39. "Synthesis and luminescence study of silicate-based phosphors for energy-saving light-emitting diodes" in book "Energy Materials" published by Elsevier, 445-480, (ISBN: 978-0-12-823710-6). (2021). (Scopus, SCI, UGC-Care).
40. An Overview of Lean and Education Sector, Journal of Engineering and Applied Sciences,12(24),7514-7519.2017.ISSN: 1816-949X(UGC-CARE).

### **Books/Book Chapter Published**

1. “Basics of Laser” with LAP Lambert Academic Publishing-2022 (ISBN: 978-620-5-51779-6).
2. Edited Proceedings of International e-Conference on “Innovations in Science, Technology, Humanities, Management and e-Commerce for Sustainable Rural Development (ISBN: 978-81-957406-0-4).
3. “Electronics, Magnetostatics and Electrodynamics” with Vikas Publishing House-2020 (ISBN: 978-93-5453-466-9).

4. **“Applied Physics”** for BE First semester, RTM Nagpur University with DNA Publication- 2021 (ISBN: 978-81-945174-6-7).-*Prescribed in RTMNU Syllabus.*
5. **“Bulk Crystal Growth: Techniques & Technologies”** Edited with DNA Publication- 2020 (ISBN: 978-81-945174-7-4).
6. **“Comprehensive Vedic Mathematics”** with DNA Publication- 2020 (ISBN: 978-81-945174-5-0).
7. **“Teaching and Research Aptitude”** with DNA Publication- 2020 (ISBN: 978-81-945174-5-0).
8. **“Engineering Physics”** for BE First semester, RTM Nagpur University with DNA Publication- 2019 (ISBN: 978-93-5051-844-1).
9. **“Principles of Management & Organizational Behavior”** with DNA Publication- 2019 (ISBN: 978-81-940734-0-6).
10. **“Engineering Physics”** for BE First semester, RTM Nagpur University with Himalaya Publishing House- 2017 (ISBN: 978-93-5273-496-2).
11. **“Engineering Physics”** for BE First semester, RTM Nagpur University with Himalaya Publishing House-2012 (ISBN: 978-93-5051-844-1).
12. **“Advanced Physics”** for BE Second semester, RTM Nagpur University with Himalaya Publishing House (ISBN: 978-93-5097-428-5).
13. **“Engineering Physics”** for BE First year SGB Amravati University with Himalaya Publishing House-2013 (ISBN: 978-93-5097-867-2).
14. **“University Solved Question Papers: Engineering Physics & Advanced Physics”** with Himalaya Publishing House (ISBN: 978-93-5202-882-5).
15. **“CET Physics”** as per upgraded syllabus of Maharashtra State Board Examination with Himalaya Publishing House (ISBN: 978-93-5202-489-6).
16. **“Solved Papers: Teaching and Research Aptitude for Paper-I of UGC-NET/SET”** with Himalaya Publishing House-2015 (ISBN: 978-93-5142-971-5).
17. **“Quantitative Aptitude for Competitive examinations”** with Himalaya Publishing House-2015 (ISBN: 978-93-5202-882-5).
18. **“Management for UGC-NET/JRF/SET”** with Himalaya Publishing House-2014 (ISBN: 978-93-5142-618-9).
19. **“Teaching and Research Aptitude for Paper-I of UGC-NET/SET”** with Himalaya Publishing House-2014 (ISBN: 978-93-5142-971-5).
20. **“Human Resource Management, Industrial Relation and Labour Welfare for UGC-NET/JRF/SET”** with Himalaya Publishing House-2013 (ISBN: 978-93-5097-661-6).

- 21. Book Chapter** "Perspectives of Hydrothermal Synthesis of Fluorides for Luminescence Applications: Fluorides Phosphors for Luminescence" in "**Emerging Synthesis Techniques for Luminescent materials**" Premier Reference with IGI Global, USA. -2018 (ISBN:978-15-2255-170-6).(*Selected As An IGI Global Core Reference Title For 2019, 277-303.*)
- 22. Book Chapter** "An Overview of Non Linear Optical Single Crystals" published in "Bulk Crystal Growth: Techniques & Technologies" DNA Publication- 2020 (ISBN: 978-81-945174-7-4).
- 23. Book Chapter** "Synthesis and luminescence study of silicate-based phosphors for energy-saving light-emitting diodes" in book "Energy Materials" published by **Elsevier**, 445-480, (ISBN: 978-0-12-823710-6). (2021).