

CURRICULUM VITAE (CV)

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BRIEF BIOGRAPHY

Dr. Pankaj P. Khirade (M.Sc. Physics, Ph.D., B.Ed.) earned his Doctorate degree (Ph.D.) in Physics (Material Science) from Dr. Babasaheb Ambedkar Marathwada University, Aurangabad (MS), India. His research is focused on the synthesis, characterizations and applications of nanoscale materials such as: Ferrites, Perovskites, Composites, Multiferroics etc. He had published a number of research articles in reputed International Journals. He is currently working as an Assistant Professor in Physics, Department of Physics, Shri Shivaji Science College, Amravati (MS), India.



Preferred subject area(s):

Material science and nanotechnology: Dielectrics, ferroelectrics, magnetic materials, multiferroics oxide semiconductor materials.

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Date of Birth: 12/01/1989

Membership: Life Member of Indian Science Congress Association (No. L30766)
Member of American Chemical Society (ACS No. 31885938). 2019-20
Life Member of Indian Association of Physics Teachers (13387 L8430).
Professional Member of International Solar Energy Society, Germany.

Google scholar Profile: <https://scholar.google.com/citations?hl=en&user=0sg6iBAAAAAJ>

Google scholar index:

Citations	:	445
h-index	:	14
i10	:	16

ResearchGate (RG) Score: : **24.01**

Extracurricular / University recognition activities:

- Reviewer of Ceramics International (Elsevier).
- Reviewer of Journal of Alloys and Compounds (Elsevier).
- Reviewer of Journal of Physics and Chemistry of Solids (Elsevier).
- Reviewer of Chemical Physics Letters (Elsevier).
- Reviewer of Journal of Electronic Materials (Springer).
- Reviewer of RSC Advances (Royal Society of Chemistry).
- Reviewer of New Journal of Chemistry (Royal Society of Chemistry).
- Reviewer of Results in Physics (Elsevier).
- Reviewer of Journal of the Electrochemical Society (ECS Transactions).
- Reviewer of Nanoscience and nanotechnology-Asia.
- Reviewer of ACS Omega Journal.
- Appointed as Editorial Board Member in “Advances in Materials” ISSN: 2327-2503 (Print); 2327-252X (Online), Science Publishing Group, NEW YORK.
- Editorial Board Member of American Journal of Materials Research (American association for science and technology AASCIT).
- Peer Reviewer of the 6th Global Conference on “Polymer and Composite materials (PCM 2019)” to be held in Bangkok (Thailand) from July 8-11, 2019.
- Paper Setter in the Subject of Physical Optics examination (Bachelor in Optometry-1st Sem 2018), Visual Optics I/II and Geometrical Optics Third Semester Examination July- 2019, MGM Institute of Health Sciences, Deemed University, Navi Mumbai. For January 2018 and July 2018 examination.
- External Examiner for CAP practical examination in Physical Optics (Bachelor in Optometry) 1st Semester examination Jan 2018 and Third Semester Examination JULY-2019, Institute of Health Sciences, Deemed University, Navi Mumbai.
- Invigilation duties for University examination of B.Sc. examination Oct-Nov 2018 at SBES College of Science, Aurangabad.
- Assessment of Answer-Books Science Faculty examination Oct-Nov 2018 of B.Sc. faculty (Physics) at Pandit Jawaharlal Nehru College, Aurangabad, DCAS centre.

Book Publications:

- Published one-chapter on “Light Energy” in the Book entitled “The Science of Energy” bearing ISBN: 978-81-929628-3-2, Rushi Publication (2020).
- Total number of Conferences / Seminars / Workshops Attended: 42.

Research Papers Published in International Journals (Total-49)

SCI and UGC Listed Journals (Total-27)

- [1]. "Multiferroic iron doped BaTiO₃ nanoceramics synthesized by sol-gel auto combustion: Influence of iron on physical properties", [Pankaj P. Khirade](#), Shankar D. Birajdar, A.V. Raut, K.M. Jadhav, *Ceramics International* 42 (2016) 12441–12451 (I.F. 2.986). ISSN: 0272-8842.
- [2]. "Room temperature ferromagnetism and photoluminescence of multifunctional Fe doped BaZrO₃ nanoceramics", [Pankaj P. Khirade](#), Shankar D. Birajdar, A.B. Shinde, K.M. Jadhav, *Journal of Alloys and Compounds* 691 (2017) 287-298 (I.F. 3.133). ISSN: 0925-8388.
- [3]. "Effect of Fe–substitution on phase transformation, optical, electrical and dielectrical properties of BaTiO₃ nanoceramics synthesized by sol-gel auto combustion method", [Pankaj P. Khirade](#), Shankar D. Birajdar, A.V. Raut, K.M. Jadhav, *Journal of Electroceramics* (2016) DOI: 10.1007/s10832-016-0044-z (I.F. 1.23). 37. (2016) 1-4:110-120. ISSN: 1573-8663.
- [4]. "Structural, electrical and dielectrical property investigations of Fe-doped BaZrO₃ nanoceramics", [Pankaj P. Khirade](#), Shankar D. Birajdar, Ashok V. Humbe, K. M. Jadhav, *Journal of Electronic Materials*, Springer, 6 (2016): 3227-3235. DOI: 10.1007/s11664-016-4472-y (I.F. 1.579). ISSN: 0361-5235.
- [5]. "Investigations on the synthesis, structural and microstructural characterizations of Ba_{1-x}Sr_xZrO₃ nanoceramics", [Pankaj P. Khirade](#), A. B. Shinde, A. V. Raut, Shankar D. Birajdar, K.M.Jadhav, *Ferroelectrics* 2016, Vol. 504, 1–14, DOI 10.1080/00150193.2016.1241633 (I.F. 0.551). ISSN: 1563-5112.
- [6]. "Structural, microstructural and magnetic properties of sol-gel synthesized novel BaZrO₃ – CoFe₂O₄ nanocomposite", [Pankaj P. Khirade](#), *Journal of Nanostructure in Chemistry*–Springer, ISSN: 2008-9244 2019, <https://doi.org/10.1007/s40097-019-0307-8>.
- [7]. "Synthesis, structural, morphological, optical and magnetic properties of Zn_{1-x}CoxO (0 ≤ x ≤ 0.36) nanoparticles synthesized by sol-gel auto combustion method", Birajdar, Shankar D., [Pankaj P. Khirade](#), V. R. Bhagwat, Ashok V. Humbe, and K. M. Jadhav, *Journal of Alloys and Compounds* 683 (2016) 513-526 (I.F. 3.05). ISSN: 0925-8388.

- [8]. "Sol-gel auto combustion synthesis, electrical and dielectric properties of Zn_{1-x}Co_xO (0.0 x <math>< 0.36</math>) semiconductor nanoparticles", Shankar D. Birajdar, [Pankaj P. Khirade](#), Tukaram S. Saraf, R.C. Alange, K.M. Jadhav, *Journal of Alloys and Compounds* 691 (2017) 355-363 (I.F. 3.05). ISSN: 0925-8388.
- [9]. "Presence of intrinsic defects and transition from diamagnetic to ferromagnetic state in Co²⁺ ions doped ZnO nanoparticles", Shankar D. Birajdar, [Pankaj P. Khirade](#), Ashok V. Humbe, K. M. Jadhav, *J Mater Sci: Mater Electron* (2016) 27:5575–5583 (I.F. 1.8). ISSN: 1573-482X.
- [10]. "Structural, microstructural and magnetic studies on magnesium (Mg²⁺)-substituted CoFe₂O₄ nanoparticles", Vithal Vinayak, [Pankaj P. Khirade](#), Shankar D. Birajdar, D. B. Sable, K. M. Jadhav, *J Supercond Nov Magn*, (2016) 29:1025–1032 (I.F. 1.1). ISSN: 1557-1947.
- [11]. "Structural, magnetic and dielectrical properties of Al-Cr co-substituted M-type barium hexaferrite nanoparticles", R. C. Alange, [Pankaj P. Khirade](#), Shankar D. Birajdar, Ashok V. Humbe, K. M. Jadhav, *Journal of Molecular Structure* 1106 (2016) 460-467 (I.F. 1.78). ISSN: 0022-2860.
- [12]. "Electrical and dielectrical properties of low-temperature-synthesized nanocrystalline Mg²⁺-substituted cobalt spinel ferrite", Vithal Vinayak, [Pankaj P. Khirade](#), Shankar D. Birajdar, R. C. Alange, K. M. Jadhav, *J. Supercond Nov Magn*, (2015) 28:3351–3356 (I.F. 1.1). ISSN: 1557-1947.
- [13]. "Influence of Al–Cr co-substitution on physical properties of strontium hexaferrite nanoparticles synthesized by sol–gel auto combustion method", R. C. Alange, [Pankaj P. Khirade](#), Shankar D. Birajdar, K. M. Jadhav, *J Mater Sci: Mater Electron*, DOI 10.1007/s10854-016-5537-7 (I.F. 2.019). 28-1 (2017): 407-417. ISSN: 1573-482X
- [14]. "Structural, Electrical, Dielectric and Magnetic Properties of Al³⁺ Substituted Ni-Zn Ferrite", A. V. Raut, [P. P. Khirade](#), Ashok Humbe, S. A. Jadhav, D. R. Shengule, K.M.Jadhav, *J Supercond Nov Magn*, (2016) 29:1331–1337 (I.F. 1.1). ISSN: 1557-1947.
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- [19]. "Doping Effect of Fe Ions on the Structural, Electrical, and Magnetic Properties of SrTiO₃ Nanoceramic Matrix", Bhoyar, D. N., Kounsalye, J. S., [Khirade, P. P.](#), Pandit, A. A., Jadhav, K. M., *Journal of Superconductivity and Novel Magnetism*, 32, no. 5 (2019): 1395-1406.
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- [23]. "Sol-gel auto-ignition fabrication of Gd³⁺ incorporated Ni_{0.5}Co_{0.5}Fe₂O₄ multifunctional spinel ferrite nanocrystals and its impact on structural, optical and magnetic properties." Pawar, D. B., [Pankaj P. Khirade](#), Vithal Vinayak, L.S. Ravangave, and S. M. Rathod, *SN Applied Sciences* 2, no. 10 (2020): 1-12.
- [24]. "Enhanced solar-cell efficiency via fabricated zinc sulfide nanocrystalline thin film-based Schottky diodes as a bypass: An experimental and theoretical investigations." Mukhamale, Sachin V., Apparao R. Chavan, Rajkumar M. Lokhande, and [Pankaj P.](#)

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- [25]. "Green Synthesis of $Ba_{1-x}Sr_xTiO_3$ ceramic nanopowders by sol-gel combustion method using lemon juice as a fuel: Tailoring of Microstructure, ferroelectric, dielectric and electrical properties." **Pankaj P. Khirade**, Vithal Vinayak, Prashant B. Kharat, Apparao R. Chavan, Optical Materials 111 (2021) 110664. <https://doi.org/10.1016/j.optmat.2020.110664>.
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- [27]. "Eco-friendly green synthesis and characterizations of $CoFe_{2-x}Al_xO_4$ nanocrystals: analysis of structural, magnetic, electrical, and dielectric properties", Apparao R. Chavan, **Pankaj P. Khirade**, Sandeep B. Somvanshi, Sachin V. Mukhamale, K. M. Jadhav, Journal of Nanostructure in Chemistry (2021), <https://doi.org/10.1007/s40097-020-00381-7>.

Papers Published in Conference proceedings and ISSN Journals

(Total-22)

- [1]. "Crystallographic and infrared spectral investigations of Mg^{2+} substituted cobalt ferrite nanoparticles prepared by sol-gel auto combustion technique", V.V. Dhole, **Pankaj P. Khirade**, C. M. Kale, V. G. Patil, N. D. Shinde, K. M. Jadhav, *International Journal of Innovative Science, Engineering & Technology*, Vol. 2 Issue 2, February 2015. ISSN 2348 – 7968.
- [2]. "Influence of chromium substitution on the magnetic properties of copper ferrite nanoparticles" S.D.More, **P.P.Khirade**, C.M.Kale, M.N.Sarnaik, S.J.Shukla, K.M.Jadhav, *Bionano Frontier* Vol. 6 (4) 2014, ISSN 0974-0678.
- [3]. "Ultrasonic investigations of CuO nanoparticles dispersed in PVA matrix", P.B. Nalle, A.A.Nawpute, S.S.Shinde, B.R.Shinde, **P. P. Khirade**, K.M.Jadhav, *Bionano Frontier* Vol. 6 (4) 2014, ISSN 0974-0678.
- [4]. "Effect of Fe^{3+} substitution on structural and magnetic properties of barium titanate nanoceramics", **Pankaj P. Khirade**, Jitendra S. Kounsalye, A. R. Chavan, Datta Sable, Shankar D. Birajdar, K.M.Jadhav, *Bionano Frontiers*, 8 (3) 2015 154-156, ISSN 0974-

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- [5]. "Sol-gel auto combustion synthesis, structural and microstructural investigations on Cr³⁺ doped Y₃Fe₅O₁₂ garnet nanoparticles", J.Y.Kadam, Ashok V.Humbe, **Pankaj P. Khirade**, S.D. Birajdar, R. G. Dorik, *International Advanced Research Journal in Science, Engineering and Technology*, 4 (7) 2017 ISSN (Online) 2393-8021, Page: 235-239.
- [6]. "Structural and microstructural investigations on Al doped Y₃Fe₅O₁₂ garnet nanoparticles synthesized by sol-gel auto combustion technique", J.Y.Kadam, A.V.Humbe, **Pankaj P. Khirade**, S.D.Birajdar, R.G.Dorik, *International journal of engineering sciences and research technology*, 6 (7) 2017, ISSN: 2277-9655, Page: 642-647.
- [7]. "Synthesis, structural and ultrasonic studies on ZnS nanofluid synthesized by wet chemical method", Shankar D. Birajdar, **Pankaj P. Khirade**, Ashok V. Humbe, P. M. Kshirsagar. P. S. Aghav, K.M.Jadhav, *International Journal of Science and Research (IJSR)*, ISSN (Online): 2319-7064, Index Copernicus Value (2013): 6.14, Impact Factor (2015): 4.438. Volume 4 Issue 2, February 2015, 497-499.
- [8]. "Low temperature synthesis of magnesium doped cobalt ferrite nanoparticles and their structural properties", Vithal Vinayak, **Pankaj P. Khirade**, Shankar D. Birajdar, P.K.Gaikwad, N. D. Shinde, K.M.Jadhav, *International Advanced Research Journal in Science, Engineering and Technology*, ISSN (Online) 2393-8021 Vol. 2, Issue 3, March 2015 (IF: 0.4).
- [9]. "Synthesis and characterization of Al doped Fe ferrite by sol-gel auto combustion method" **P. P. Khirade**, A.B.Shinde, S.M.Rathod, *Lasers and Advanced Materials*, A proceedings of NCLAM-2012, ISBN 978-81-922256-6-1.
- [10]. "Sol-gel Auto Combustion Synthesis of Barium Zirconate (BaZrO₃) Nanocrystalline ceramics", **Pankaj P. Khirade**, Shankar D. Birajdar, S. P.Jadhav, K. M. Jadhav, *International Journal of Advanced Research In Basic and Applied Science*, Vol.1 Iss.1. (2014) 144, ISSN: 2394-4072.
- [11]. "Comparative study of the structural and magnetic properties of magnesium ferrite prepared by ceramic and sol-gel auto combustion technique", B.R.Gaikwad, **Pankaj P. Khirade**, D.V.Kurmude, A.B.Shinde, A.A.Pandit, K.M.Jadhav, *Journal of Applicable Chemistry*, 2013, ISSN: 2278-1862 (IF-1.29 GISI IF-0.32 GIF).
- [12]. "Personal response system: an innovative method in teaching Physics", A.A.Nawpute, P.B.Nalle, S.D.Birajdar, **P.P.Khirade**, K.M.Jadhav., *Souvenir National*

seminar on innovative teaching methods in Physics, ISBN 978-81-9276750-0-9.

- [13]. "Synthesis and characterizations of zirconium (Zr^{4+}) substituted cobalt ferrite ($CoFe_2O_4$) nanoparticles synthesized via sol-gel auto combustion Technique" J.B.Mote, **P. P. Khirade**, L.B.Jadhavar, V.V.Dhole, K.M.Jadhav, *International Journal of Advanced Research in Physical Science (IJARPS)*, Vo. 1, Issue 7, November 2014, PP 46-52, ISSN 2349-7882 (Online).
- [14]. "Structural and microstructural characterization of indium substituted cobalt ferrite nanoparticles", A.B.Shinde, **Pankaj P. Khirade**, Shankar D. Birajdar, K. M. Jadhav, *International Journal of Advanced Research In Basic and Applied Science* Vol.1 Iss.1. (2014) 8, ISSN : 2394-4072.
- [15]. "Synthesis and structural properties of $MnFe_2O_4$ at nano regime: A potential gas sensing material", A.V.Humbe, G.H.Kale, S.S.Jawale, **P. P. Khirade**, Datta Sable, K.M.Jadhav, Special Issue, *Science Park*, ISSN 2321-8045 (I.F. 1.62 UIF).
- [16]. "Crystallographic and Optical Properties of Cadmium Sulfide Nanoparticles Synthesized by Wet Chemical Route", Shankar D. Birajdar, **Pankaj P. Khirade**, Ashok V. Humbe, K. M. Jadhav, *International Journal of Advanced Research In Basic and Applied Science*, Vol.1 Iss.1. (2014) 178.
- [17]. "Synthesis, structural and ultrasonic studies on ZnS nanofluid synthesized by wet chemical method" Shankar D. Birajdar, **Pankaj P. Khirade**, Ashok V. Humbe, P.M.Kshirsagar. P. S.Aghav, K.M.Jadhav, *International Journal of Science and Research (IJSR)*, ISSN (Online): 2319-7064, Index Copernicus Value (2013): 6.14, Impact Factor (2013): IF. 4.438.
- [18]. "Synthesis and characterization of zirconium (Zr^{4+}) doped cobalt ferrite ($CoFe_2O_4$) nanoparticles" J. B. Mote, S.P.Jadhav, R. C. Alange, **Pankaj P. Khirade**, K.M.Jadhav, *Role of chemical sciences in overall development of human beings*, Indotech Publications Pvt. Ltd. Vishwabharti, ISBN 978-93-83193-50-9.
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vanced Research Journal in Science, Engineering and Technology, Vol. 3, Issue 12, December 2016, 14-18, ISSN 2393-8021.

- [21]. "Effect of Magnetic Field on Thermal Conductivity of the Cobalt Ferrite Magnetic Nanofluids", Prashant B. Kharat, Sandeep B. Somvanshi, **Pankaj P. Khirade**, K. M. Jadhav, Journal of Physics: Conference Series, vol. 1644, no. 1, p. 012028. IOP Publishing, 2020., ISSN: 1742-6596.
- [22]. "Radiation interaction properties of various polymers, saturated and unsaturated fatty acids: A comparative investigation of Monte Carlo simulation and NISTXCOM", Bhalerao, Varsha A., R.M. Lokhande, S.B. Bhosale, **Pankaj P. Khirade**, S.V. Mahajan, D. K. Gaikwad, and A.M. Chavan, Journal of Physics: Conference Series, vol. 1644, no. 1, p. 012024. IOP Publishing, 2020, ISSN: 1742-6596.