

Bio-Data

Dr. Shashikala Yalagi

Assistant Professor

Department of Studies in Physics

Qualification : M. Sc., Ph.D.

Areas of Specialization : Atomic and molecular Physics

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Areas of Research Interest:

1. Vibrational Spectroscopy
2. Absorption and fluorescence Spectroscopy

Research Publications:

1. *Defect-engineered ZnO and Fe₃O₄ nanoparticles for photoluminescence-based metal-ion sensing*
K.S. Chaithra, B. Shwetha, Mangesh S. Jadhav, Shashikala B. Yalagi, Malatesh s. Pujar.
Biointerphases, 21(4), 2026, 041001-12.
2. *(R)-(+)- α -Methylvaline: Raman /IR spectroscopic and DFT dimer analysis*
Shashikala Yalagi
International Journal of Innovative Science and Research Technology, 8(2), 2023, 1-9.
3. *Experimental and DFT analysis of N-H $\cdots$ O bonding in α -Methyl-L-Phenylalanine zwitterionic dimer*
Shashikala Yalagi
International Journal for Research Trends and Innovation, 8(1), 2022, 357-365.
4. *Study of vibrational spectra of zwitterionic 3-Aminobutanoic acid, as supported by DFT calculations*
Shashikala Yalagi
World Journal of Advanced Research and Reviews, 16(3), 2022, 1122-1131.
5. *DL-3-Aminoisobutyric acid: vibrational, NBO and AIM analysis of N-H $\cdots$ O bonded-zwitterionic dimer model*
Shashikala Yalagi, Jagdish Tonannavar, Jayashree Tonannavar
Heliyon 5 (2019) e01933.
6. *Experimental and DFT dimer modeling studies of the H-bond induced-vibration modes of L- β -Homoserine*
Shashikala Yalagi, J. Tonannavar, Jayashree Yenagi
Spectrochimica Acta Part A, 181 (2017) 109-115.

7. *A study of vibrational spectra of zwitterionic 3-Aminobutanoic acid, as supported by density functional calculations*
Jayashree Yenagi, Shashikala Yalagi and J. Tonannavar
Asian Journal of Physics, 24(5) (2015) 703-711.

Translation works

1. Translated '*Applied Physics – I (with lab manual)*' of 1st year Diploma Program in Kannada under AICTE Technical Book Writing Scheme, Khanna Book Publishing Co. (P) Ltd., 2023, ISBN: 978-93-91505-85-1.
2. Subject expert for translation of first-year engineering SWAYAM – Introductory Quantum Mechanics course in Kannada – 55 lectures.
3. Translator for translation of the SWAYAM - 'Engineering Mechanics' lectures in Kannada Language.
4. Translator for translation of the SWAYAM - 'Quantum Mechanics' lectures in Kannada Language.

Presentations at International Conferences

1. *Study of Optoelectronic Properties of Newly Synthesized Organic Molecule* at International Conference on Recent Trends in Materials Science (ICRTMS-2026) held at Kristu Jayanti University, Bengaluru on 09-10 Apr, 2026.
2. *Study of Optoelectronic Properties of Newly Synthesized Organic Molecule* at Recent Trends and Innovations in Applied Sciences (ICRIAS-2026) held at J.J.M. Medical College Campus, Davangere on 06-07 March, 2026.
3. *Spectroscopic Studies of Schiff Base Compounds: Synthesis, Characterization and Application* at International Analytical Science Congress-2026 held at KLE Centenary Convention Center, Belagavi on 22-24 January, 2026.
4. *Synthesis and Characterization of 3,3-Bis(4-hydroxyphenyl)-1(3H)-isobenzofuranone derivative and its theoretical DFT Computation* at Two-day International conference on New Challenges and Innovations in Molecular Medicine held at Mysore University, Mysore, Karnataka on 28-29 May, 2025.
5. *The vibrational zwitterion model of unnatural amino acid: 3-Aminobutanoic acid* at 9th International Conference on Perspectives in Vibrational Spectroscopy (ICOPVS-2022) held at Devi Ahilya Vishwavidyalaya, Indore on 13-17 December, 2022.
6. *Experimental and DFT dimer vibrational analysis of (S)-(-)-(α)-Allylalanine* at 8th International Conference on Perspectives in Vibrational Spectroscopy (ICOPVS-2020) held at JNCASR, Bangalore on 24-28 February, 2020.

7. *Analysis of zwitterionic vibrational modes in (R)-(+)- α -Methylvaline, aided by Self-Consistent Reaction Field dimer modeled in water solvent* at ICOPVS-2018 held at BARC, Mumbai on 25-29 November, 2018.
8. *DFT Inter-molecular H-bonded model for the vibration structure of L- β -Homoserine* at ICOPVS-2016 held at University of Lucknow, Lucknow during 5-8 November, 2016.

Presentations at National Conferences

1. *Synthesis and Characterization of Zinc Oxide nanoparticles by Co-precipitation method and its Optical Sensing Applications* at National Conference on Molecules and Materials for building a Better World (NCMBW-2025) organized by Karnatak University, Dharwad, Karnataka on 17-18 July, 2025.
2. *Determination of Ground and Excited state Dipole moments of 2-Mercaptobenzothiozole at Two-day National Conference on Multidisciplinary Research: Prospectus and Challenges (NCMDRPC – 2024)* organized by Science Departments, Raichur University, Raichur, Karnataka, on 28-29 February, 2024.
3. *Experimental and DFT analysis of N-H...O bonding in α -Methyl-L-Phenylalanine zwitterionic dimer* at National Conference on Emerging Trends in Physics (NCETP) organized by Department of Physics, Tezpur University, Assam on 16th June, 2021.
4. *DL-3-Aminoisobutyric acid as zwitterionic dimer: Experimental and DFT analysis* at 24th DAE-BRNS National Laser Symposium held at RRCAT, Indore on 2-5 December, 2015

International/National Conferences (Attended):

1. Two-day National Conference on “The 100 Years of Quantum Physics: Developments and Multidisciplinary Applications in Novel Materials” (NCQP – 2026) organized by Department of Physics, Karnatak University, Dharwad, Karnataka on 16-17 January, 2026.
2. National conference on “Nanostructure based Functional Materials” organized by Department of Physics, Davangere University, Davangere, Karnataka on 8th September, 2023.
3. National Conference on Emerging Trends in Physics (NCETP) Organized by Department of Physics, Tezpur University, Assam on 16th June, 2021.
4. ICOPVS-2020 held at JNCASR, Bangalore on 24-28 February, 2020.
5. ಸ್ವದೇಶಿ ವಿಜ್ಞಾನ ಅಂದೋಲನ-ಕರ್ನಾಟಕ, ಬೆಂಗಳೂರು ಮತ್ತು ದಾವಣಗೆರೆ ವಿಶ್ವವಿದ್ಯಾಲಯ, ದಾವಣಗೆರೆ ಇವರ ಸಂಯುಕ್ತ ಆಶ್ರಯದಲ್ಲಿ ಆಯೋಜಿಸಿರುವ ೧೫ ನೇ ‘ಕನ್ನಡ ವಿಜ್ಞಾನ ಸಮ್ಮೇಳನ’ ಜರುಗಿದ ದಿನಾಂಕ 15-16 ನೇ ಸೆಪ್ಟೆಂಬರ್ 2019.

6. ICOPVS-2018 held at BARC, Mumbai on 25-29 November, 2018.
7. ಕರ್ನಾಟಕ ವಿಜ್ಞಾನ ಮತ್ತು ತಂತ್ರಜ್ಞಾನ ಅಕಾಡೆಮಿ, ಕರ್ನಾಟಕ ವಿಶ್ವವಿದ್ಯಾಲಯ ಮತ್ತು ಧಾರವಾಡ ಪ್ರಾದೇಶಿಕ ವಿಜ್ಞಾನ ಕೇಂದ್ರ, ಧಾರವಾಡ ಇವರ ಸಹಯೋಗದೊಂದಿಗೆ ಆಯೋಜಿಸಿರುವ 'ಕನ್ನಡದಲ್ಲಿ ವಿಜ್ಞಾನ ಮತ್ತು ತಂತ್ರಜ್ಞಾನ ಸಮ್ಮೇಳನ' ಜರುಗಿದ ದಿನಾಂಕ 23-24 ನೇ ನವೆಂಬರ್ 2018.
8. ICOPVS-2016 held at University of Lucknow, Lucknow during 5-8 November, 2016.
9. 24th DAE-BRNS National Laser Symposium held at RRCAT, Indore on 2-5 December, 2015.

Seminars Attended:

1. *NAAC Revised Assessment and Accreditation Framework* held on 24th March, 2018 organized by SVM Arts, Science and Commerce College, Ilkal.
2. National Seminar on *Frontier Methods and Techniques for Probing Molecules and Materials* held during 21-22 March, 2018 organized by Dept. of Physics and Electronics, Karnatak University, Dharwad.
3. National Seminar on *Current Topics in Condensed Matter Physics* held during 27-28 March, 2017 organized by Dept. of Physics, Karnatak University, Dharwad.
4. *Laser Science and Applications* held during 8-9 March, 2013 organized by Dept. of Physics, Karnatak University, Dharwad.
5. UGC National Seminar on *Sustainable Solid Waste Management* held during 11-12 March, 2011 at SVM Arts, Science and Commerce College, Ilkal Karnataka.

Seminars/Conferences organized:

1. National Conference on 'Nanostructure Based Functional Materials' on 08th September, 2023.
2. National webinar on 'Smartness of smart materials' on 09th September, 2021.
3. National webinar on 'Particle Accelerators: Current and Future Application' on 19th July, 2021.
4. National webinar on 'White Dwarfs, Neutron Stars and Black Holes' on 13th July, 2021.
5. National webinar on 'Studies on Conducting Polymer Nanocomposites and its Applications' on 08th July, 2021.
6. National webinar on 'The Ubiquitous Gallium Nitride Nanostructures' on 07th July, 2021.
7. National webinar on 'Exploring Biomaterials for Energy and Environmental Applications' on 30th June, 2021.

8. National webinar on 'Ultrafast Optics' on 29th June, 2021.
9. National webinar on 'Arduino Microcontroller, Coding, I/O Interfacing and Circuit Simulation' on 27th June, 2021.
10. National webinar on 'Sensors' on 16th June, 2021
11. 'Celebration of National Science Day and Inauguration of Physics forum – SPECTRUM' in association with IQAC, Davangere University on 23rd March, 2021.
12. International webinar on 'ICT Initiatives and Flipped Learning' on 28th August, 2020.
13. National webinar – Short term course on 'Basic Electronics' during 06 – 12 July, 2020.
14. National webinar on 'Raman Effect and its applications' on 25th June, 2020.
15. National webinar on 'Super Capacitors' and 'Flexible OLEDs – The Future of lighting and Display Technology' on 18th and 20th June, 2020.
16. National webinar on 'Biological effects of ionizing radiation, and 'Biological bases of radiation protection, on 12th and 17th June, 2020.
17. 'Celebration of National Science Day' in association with IQAC, Davangere University on 28th February, 2020.

Workshops Attended:

1. One Day Workshop on *Electrochemical Energy Storage and Conversion* organized by Royal Society of Chemistry Hypower Green Energy Technologies in association with Dept. of Studies in Chemistry, Davangere University, Davangere, Karnataka on 12th March, 2026.
2. Workshop on *Sustainable Development of Libraries Through Technological Transformations in the AI Era: Issues, Challenges and Opportunities* organized by Davangere University, Davangere, Karnataka on 12th August, 2025.
3. Workshop on *Transforming and Empowering Libraries, LIS Professionals and Users: Emerging Trends* organized by DELNET, New Delhi in collaboration with Davangere University, Davangere, Karnataka on 13th Dec, 2024.
4. Workshop on *IRNIS and ShodhaChakra* organized by INFLIBNET centre, Gandhinagar in collaboration with Davangere University, Davangere, Karnataka on 26th Aug, 2022.
5. AICTE –Technical Book Writing Workshop on 14 – 16 September, 2021 organized by AICTE, New Delhi.
6. Workshop on NAAC criteria on 03 – 10 February, 2021 organized by IQAC, Davangere University, Davangere.
7. Workshop on PEO's, PO's and CO's in Outcome based education environment organized

by IQAC, Davangere University on 15-12-2020.

8. Recent Developments in Materials Research held on 16 -17 November, 2018 organized by Indian Academy of Sciences, Bengaluru and Higher Education Academy, Dharwad.
9. International Workshop on *NMR and TEM* held during 11-12 December, 2014 organised by Indian Institute of Science, Bangalore.
10. National workshop on *PIXS: Applications in Basic and Applied Science* held during 23-26 Feb 2012 organized by BARC, Mumbai.
11. State Level *Astronomy Program* held during 8-9 Oct, 2010 organized by KSCST, Indian Institute of Science, Bangalore.
12. Three days' workshop on *Entrepreneurship Awareness* held during 28-30 Sept, 2010 organized by CEDOK, Dharwad.
13. Two days workshop on *Communication Skills* held during 3-4 Sept, 2010 organized by SVM Arts, Science and Commerce College, Ilkal.

Workshops organized:

1. One Day workshop on *PEOs, POs and COs in Outcome based education environment* at Davangere University on 15-12-2020.
2. One day workshop for college teachers on *FRONTIERS OF PHYSICAL SCIENCES* at Davangere University on 03-02-2020.

Training Programmes Attended:

1. '5th Online Short-Term course on E-Content Development' organized by UGC-HRDC, Gujarat University during 14 – 20 May, 2020.
2. Faculty Development Programme organized by Davangere University, Davangere during 06 – 13 January, 2020.
3. Training on Nanosurf 'Atomic Force Microscope' held on 8-9 June, 2015 at University of Agricultural Sciences, Dharwad.

Professional Membership:

1. Life member, Indian Laser Association (Membership no: LM – 1268)
Life Member, Indian Laser Association
2. Life Membership, The Indian Science Congress Association
(Membership no: L36236)

3. Life Membership, Karnataka Physics Association
(Membership no: DRB2/SOR/210/2021-2022)
4. Life Membership, Davangere University Teachers Association
(Membership no: DUTA026)

Academic/Administrative Assignments:

1.	Member, University Science and Technology Forum, Davangere University, Davangere.
2.	Member, Gender Sensitization Committees against Sexual Harassment, Davangere University, Davangere.
3.	Member, Local Inspection Committee, Davangere University, Davangere.
4.	Warden of Saraswati Ladies hostel, Davangere University, Davangere.
5.	Master Trainer, E-Governance Unit, Davangere University, Davangere.
6.	Master Trainer, UUCMS-Admission module, Davangere University, Davangere.
7.	Co-ordinator, Day Care centre, Davangere University, Davangere.
8.	Vice President, Cultural Activities, PG Gymkhana, Davangere University, Davangere.
9.	Program Coordinator, NSS PG Unit-2, Davangere University, Davangere.
10.	Member, Vigilance Squad, UG examination, Davangere University, Davangere.
11.	Observer, UG Examination, Davangere University, Davangere.
12.	Deputy Custodian, for UG and B.Ed. Examination, Davangere University, Davangere.
13.	Deputy Custodian, for B.Ed. Examination, Davangere University, Davangere.
14.	Member, BoS in Physics (PG), Davangere University, Davangere.
15.	Member, BoE in Physics (PG), Davangere University, Davangere.
16.	Student welfare coordinator of Department of Studies in Physics, Davangere University, Davangere.
17.	Scholarship coordinator of Department of Studies in Physics, Davangere University, Davangere.