

Dr. Suresh Kumar H.M.

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Education

	Degree	Year	Institute	Specialization
1	B.Sc.	1993	Kottureshwara College, Kottur - 583 134	Physics, Maths, Electronics
2	M.Sc.	1995	Gulbarga University, Gulbarga – 585 106	Physics
3	M.Phil.	1996	Gulbarga University, Gulbarga – 585 106	Physics
4	Ph.D.	2004	Gulbarga University, Gulbarga – 585 106	Physics

Professional Experience

	Date (from-to)	Designation	Organization
1	28.08.2017 to Till date	Professor	Siddaganga Institute of Technology, Tumkur
2	01.01.2011 to 27.08.2017	Associate Professor	Siddaganga Institute of Technology, Tumkur
3	20.08.2007 to 31.12.2010	Assistant Professor	Siddaganga Institute of Technology, Tumkur
4	22.08.2005 to 14.08.2007	Assistant Professor	Sri Bhagawan Mahaveer Jain College of Engineering, Bangalore
5	02.01.2004 to 20.08.2005	Faculty Member	ICFAI Science and Technology, Bangalore
6	04.12.1997 to 01.01.2004	Lecturer	Proudha Devaraya Institute of Technology, T.B. Dam, Hospet

Positions held

- Head, Department Physics, SIT, Tumkur, since 2014
- Deputy Warden, SIT Group of Hostels, Tumkur, 2010 - 2014.

- ISO Internal auditor, SIT, Tumkur.
- Member, Anti-ragging Monitoring Cell-1, 2017.
- Member, BoS in Physics (VTU nominee), Bapuji Institute of Engineering and Technology, Davanagere, 2024.
- Member, BoS in Physics (VTU nominee), B.N.M. Institute of Technology, Bengaluru (Autonomous), 2021 to 2024
- Member, BoS in Physics (VTU nominee), BMS College of Engineering, Bengaluru, 2019 – 2021
- Member, Doctoral Committee in Physics (for reviewing the progress of PhD candidates), VTU-RRC, Belagavi, MSRIT Bangalore, BMSIT, Bangalore, Sri Siddartha Institute of Technology, Tumakuru,
- Member, Academic Auditing, Department of Physics, R.V. College of Engineering, Bangalore, 2022.
- Member, Academic Auditing, Department of Physics, Cambridge Institute of Technology, Bangalore, 2025.

Affiliations of Professional organizations

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Courses Taught

Undergraduate Courses

- Engineering Physics,
- Physics for CSE/Civil/Mechanical/Electrical Stream

Research Guidance

Sl. no	Name of the Scholar	Title	Year of completion
1	Deepa H R	Photophysical studies of some organic molecules	2014
2	Jagadeesh M R	Growth and characterization of some organic crystals for NLO applications	2016
3	Jana Basavaraja	Study of photophysical properties of some organic molecules	2017
4	Dileep M.S.	Crystal growth, characterization and spectroscopic studies of some organic molecules	2020
5	Suresh Kumar B	Growth and characterization of some doped nonlinear optical crystals	2023

Research Areas

- Molecular Fluorescence Spectroscopy

- Nonlinear Optics
- Nanomaterials - Luminescence

Sponsored Projects

Ongoing Projects: Nil

Completed Projects:

1. Title: Transition metal ion doped semi-organic amino acid crystals for Non Linear Optics (NLO) applications: elaborating the magneto-optic relations”
Funding Agency: VGST, Government of Karnataka under CISEE scheme
Amount: Rs. 30.00 lakhs,
Duration: 2018-21
Role: PI

Publications

International Journals

- [1] Steady state and time resolved emission studies of 6-methoxy quinoline.
L.R. Naik, **H.M. Suresh Kumar**, S.R. Inamdar and N.N. Math, Spectroscopy Letters, **38**, 645-659, 2005, <https://doi.org/10.1081/SL-200062818>
- [2] Dual fluorescence and laser emissions from fluorescein-Na and eosin-B.
N.N. Math, L.R. Naik, **H.M. Suresh**, S.R. Inamdar, Journal of Luminescence, **121**, 475-487, 2006. <https://doi.org/10.1016/j.jlumin.2005.11.013>
- [3] Analysis of fluorescence quenching of new indole derivative by aniline using Stern – Volmer plots
Suresh Kumar H.M., R.S. Kunabenchhi, J.S. Biradar, N.N. Math and S.R. Inamdar. Journal of Luminescence, **116**, 35-42, 2006.
<https://doi.org/10.1016/j.jlumin.2005.02.012>
- [4] Study on Fluorescence quenching of LD-425 by aromatic amines in 4-dioxane –acetonitrile mixtures.
Deepa H R, J.Tipperudrappa, **H.M. Suresh Kumar**, J. of Luminescence, **132**, 1382 – 1388, June 2012. <https://doi.org/10.1016/j.jlumin.2012.01.008>
- [5] Effect of Solvents on the Spectroscopic Properties of LD-489 & LD-473: Estimation of Ground and Excited State Dipole Moments by Solvatochromic Shift Method
H.R. Deepa J. Thipperudrappa **H.M. Suresh Kumar**, Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy **108**, 288-294, May 2013.
<https://doi.org/10.1016/j.saa.2013.01.084>
- [6] Solvatochromic shift studies in LD-425 and LD-423: Estimation of ground and excited state dipole moments
H.R. Deepa, J. Thipperudrappa, R.H. Fattepur, **H.M. Suresh Kumar**, Journal of Molecular Liquids **181**, 82-88, May 2013.
<http://dx.doi.org/10.1016/j.saa.2013.01.084>

- [7] Influence of silver nanoparticles on absorption and fluorescence properties of laser dyes
H.R. Deepa, **H.M. Suresh Kumar**, M. Basanagouda, and J. Thipperudrappa, Canadian Journal of Physics, **92(2)**, 163–167, February 2014. [dx.doi.org/10.1139/cjp-2013-0133](https://doi.org/10.1139/cjp-2013-0133)
- [8] Resonance energy transfer study of laser dyes LD 489 and LD 473 with rhodamine 6G
H.R. Deepa, J. Thipperudrappa, and **H.M. Suresh Kumar**, Canadian Journal of Physics, **92(4)**, 302–306, March 2014. [dx.doi.org/10.1139/cjp-2013-0445](https://doi.org/10.1139/cjp-2013-0445)
- [9] Solvents effect on the absorption and fluorescence spectra of 7-diethylamino-3-thenoylcoumarin: Evaluation and correlation between solvatochromism and solvent polarity,
Jana Basavaraja, S.R. Inamdar, **Suresh Kumar H.M.**, Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy **137**, 527-534, February 2015. <https://doi.org/10.1016/j.saa.2014.08.118>
- [10] A study on fluorescence quenching of a laser dye by aromatic amines in alcohols
H.R. Deepa, J. Thipperudrappa, **H.M. Suresh Kumar**, Canadian Journal of Physics, **93(4)**, 469-474, April 2015. [10.1139/cjp-2014-0190](https://doi.org/10.1139/cjp-2014-0190)
- [11] Growth and Characterisation of NLO crystal - L-Leucine Phthalic acid Potassium Iodide
Jagadeesh M. R , **Suresh Kumar H. M**, R. Ananda Kumari, Materials Science-Poland, **33 (3)**, 529–536, October 2015 DOI: [10.1515/msp-2015-0063](https://doi.org/10.1515/msp-2015-0063).
- [12] Crystal growth and characterization of a semi-organic nonlinear optical (NLO) material: L-phenylalanine cadmium chloride,
M.R. Jagadeesh, **H.M. Suresh Kumar**, R. Ananda Kumari, Canadian Journal of Physics, **93(11)**, 1296-1301, November, 2015. [10.1139/cjp-2014-0571](https://doi.org/10.1139/cjp-2014-0571)
- [13] Crystal growth and characterization of a new NLO crystal: Urea 2- furoic acid'
Jagadeesh M. R , **Suresh Kumar H. M**, R. Ananda Kumari, Optik **126**, 4014–4018, December 2015. <https://doi.org/10.1016/j.ijleo.2015.07.190>
- [14] Estimation of ground and excited state dipole moment of laser dyes C504T and C521T using solvatochromic shifts of absorption and fluorescence spectra
Jana Basavaraja, **Suresh Kumar H.M.**, S.R. Inamdar, M.N, Wari, Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy **154**, 177-184, February 2016. <https://doi.org/10.1016/j.saa.2015.10.020>
- [15] Growth and charatcterisation of mercuric chloride doped urea single crystals
M. R. Jagadeesh, **H. M. Suresh Kumar** & R. Ananda Kumari Materials Research Innovations (Taylor and Francis), **21(6)**, 391–395, January 2017 DOI: [10.1080/14328917.2016.1265245](https://doi.org/10.1080/14328917.2016.1265245).
- [16] Effect of quencher and temperature on fluorescence intensity of laser dyes: DETC and C504T
Jana Basavaraja, S.R. Inamdar, **Suresh Kumar H.M.**, Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy **170**, 124–130, January 2017. [dx.doi.org/10.1016/j.saa.2016.07.010](https://doi.org/10.1016/j.saa.2016.07.010)
- [17] Effect of Co-60 gamma radiation on Optical, Dielectric and Mechanical properties of Strontium L-Ascorbate Hexahydrate NLO crystal
Suresh Kumar H M, Dileep M S, Radiation Physics and Chemistry, **145**, 104-110, April 2018. [10.1016/j.radphyschem.2017.12.021](https://doi.org/10.1016/j.radphyschem.2017.12.021)

- [18] Frequency dependence of AC conductivity and dielectric properties evaluation of in-situ prepared polyaniline/manganese dioxide composite.
Yankappa A. Kulakarni, M. R. Jagadeesh, Sahebagouda Jambaladinni, **H. M. Suresh Kumar**, M. S. Vasanthkumar, S. Shivakumara
Journal of Materials Science: Materials in Electronics, **31**, 7226–7231, April 2020.
<https://doi.org/10.1007/s10854-020-03295-w>.
- [19] Spectral properties of Laser dyes at varying temperature
Deepa H R, Tipperudrappa J and **Suresh Kumar H M**, Canadian Journal of Physics, **99 (2)**, 88-93, Feb 2021 <https://doi.org/10.1139/cjp-2020-0087>
- [20] Influence of gamma radiation on the properties of l-ascorbic acid crystal for photonic applications
Sindhu Tilak & **H. M. Suresh Kumar**, Journal of Materials Science: Materials in Electronics **32**, 8174–8182, March 2021.
<https://doi.org/10.1007/s10854-021-05543-z>.
- [21] Color tunable orange-red light emitting Sm³⁺ doped BaZrO₃ nanopowders: Photoluminescence properties for w-LED applications
R.B. Basavaraj, Santosh Kumar, D.P. Aarti, G. Nagaraju, **H.M. Suresh Kumar**, R. Soundar, T.S. Shashidhara, H.N. Sumedha, M. Shahsank
Inorganic Chemistry Communications **128**, 108577, April 2021.
<https://doi.org/10.1016/j.inoche.2021.108577>.
- [22] Mechanical, electrical, linear and nonlinear optical behavior of gamma irradiated thiourea doped lithium sulfate single crystals
Dileep M S, **Suresh Kumar H M**, Sindhu Tilak, Canadian Journal of Physics. **99(4)**, 242-246, April 2021. <https://doi.org/10.1139/cjp-2019-0138>.
- [23] L-Ornithine Monohydrochloride Doped Zinc Tris-Thiourea Sulphate Single Crystals for NLO Applications
B. Suresh Kumar, M. R. Jagadeesh, Sindhu Tilak & **H. M. Suresh Kumar**, Silicon, **13(12)**, 4247–4257, December 2021.
<https://doi.org/10.1007/s12633-020-00681-1>.
- [24] AC conductivity and dielectric properties of nanostructured amorphous manganese dioxide and polypyrrole/manganese dioxide composite
Yankappa A. Kulakarni, M. R. Jagadeesh, Sahebagouda Jambaladinni, **H. M. Suresh Kumar**, M. S. Vasanthkumar, and S. Shivakumara
Journal of Materials Science: Materials in Electronics, **32 (3)** 3352 – 3360, Feb. 2021, 1-9, DOI:10.1007/s10854-020-05083-y.
- [25] L-citrulline (LC) doped zinc tris-thiourea sulfate (ZTS) single crystals for photonic applications
B Suresh Kumar, M. R. Jagadeesh, C. Madhu & **H M Suresh Kumar**
Indian Journal of Physics, **96(8)**, 2293-2301, July 2022,
<https://doi.org/10.1007/s12648-021-02145-7>.
- [26] Growth and characterization of pure and metal ions doped L-Taurine: a third-order nonlinear optical crystal for photonic applications
Sindhu Tilak, G. Vinitha, and **H. M. Suresh Kumar**
J Mater Sci: Mater Electron, **33 (19)**, 15719–15733, July 2022.
<https://doi.org/10.1007/s10854-022-08474-5>.
- [27] Green Synthesis of Cerium Oxide Nanoparticles, Antibacterial Studies and as Catalyst for the Conversion of Cotton Seed Oil into Biodiesel

- G.E. Rudreshappa, Madhu Chennabasappa*, , S. Sreenivasa, S. Vijaya Kumar , K.V. Yatish , G. Nagaraju , **H.M. Suresh Kumar**, And D.B. Aruna Kumar, Asian Journal of Chemistry; **34(9)**, 2415-2423, August 2022. <https://doi.org/10.14233/ajchem.2022.23607>.
- [28] Combustion synthesis of calcium doped ZnO nanoparticles and its photocatalytic application,
K.S. Mamatha, M.Shahsank, G. Nagaraju, **Suresh Kumar H M**, Journal of the Indian Chemical Society. **99(11)**, 100744, November 2022. <https://doi.org/10.1016/j.jics.2022.100744>.
- [29] Growth and characterization of L-ornithine monohydrochloride single crystal doped with Co^{2+} and Mn^{2+} ions for NLO application
B. Suresh Kumar, M. R. Jagadeesh, and **H. M. Suresh Kumar**, J Mater Sci: Mater Electron **33**, 26706–26716, 2022. <https://doi.org/10.1007/s10854-022-09337-9>.
- [30] Development of flexible luminescent films, photoluminescence properties and anti-counterfeiting applications of $\text{SrMoO}_4\text{:Tb}^{3+}$ green phosphors
C. Lakshmi Ranganatha , B. S. Palakshamurthy, G. P. Abhilash , Anu Mathew , **H. M. Suresh Kumar**, and C. Shivakumara
J Mater Sci: Material Electronics, **34(18)**, 1412, June 2023. <https://doi.org/10.1007/s10854-023-10820-0>.
- [31] Efficient red-emitting $\text{SrZrO}_3\text{:Eu}^{3+}$ phosphor superstructures for display device applications
K.C. Sushma, R.B. Basavara, D.P. Aarti, M.B. Madhusudana Reddy, G. Nagaraju , M.S. Rudresh , **H.M. Suresh Kumar**, K.N. Venkatachalaiah
Journal of Molecular Structure **1283**, 135192, July 2023. <https://doi.org/10.1016/j.molstruc.2023.135192>.
- [32] Eco-inspired synthesis of ZnO/CuO nanocomposites using Phyllanthus niruri: unveiling superior photocatalytic, antibacterial efficacy against Escherichia coli and Staphylococcus aureus, and latent fingerprint studies
K. S. Mamatha · **H. M. Suresh Kumar**, T. D. Puttaraju · T. L. Soundarya · G. Nagaraju, Ionics, **30(11)**, 7665–7684, November 2024. <https://doi.org/10.1007/s11581-024-05823-8>
- [33] Computational and Spectroscopic Study of Newly Synthesized Bio-Active Azo Dyes : DFT, Solvatochromism, and Preferential Solvation Renuka U, Subhani Khanam Nehal, Mallikarjuna N.M., VibhaK., Arun Kumar S.M., **Suresh Kumar H. M.** and Thipperudrappa Javuku, Chemistry Select, **9(48)**, e202404707(1of17), December 2024. doi.org/10.1002/slct.202404707.
- [34] Utilizing sulfa drugs' pH-dependent spectral modifications for designing molecular logic gates,
K. Vibha , N.C. Prachalith , **H.M. Suresh Kumar**, M.N. Ravikantha, R. Annoji Reddy, J. Thipperudrappa,
Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy Volume **325**, 125099, January 2025. <https://doi.org/10.1016/j.saa.2024.125099>.
- [35] Hexagonal rod-like Eu^{3+} doped CaMoO_4 phosphors: Structural, photoluminescence and photometric properties for display device applications.
N.N.Munirajappaa, R.B.Basavaraj, D.P.Aarti, M. B. Madhusudana Reddy, G. Nagaraju, **H.M.SureshKumar**, Thalari Chandrasekhar, Anil S. Rathod
Journal of Molecular Structure, **1319**, 139331, January 2025. <https://doi.org/10.1016/j.molstruc.2024.139331>.
- [36] Structural, dielectric and LDT response of Sr^{2+} ions codoped bisthiourea-urea mixed crystals upon gamma irradiation

- Dileep M S , **Suresh Kumar H. M** , Prashanth G K , Yashwanth H J , Madhukara Naik M, Jagadeesh M R , Srilatha Rao , Manoj Gadewar , H.S. Lalithamba , N.P. Bhagya
Journal of Molecular Structure, Volume 1324, 140825, March 2025,
<https://doi.org/10.1016/j.molstruc.2024.140825>
- [37] An effective approach for water pollution remediation and structural-optical analysis of gamma-irradiated flufenamic acid
Prachalith N.C.; Khanam B.R.; Angadi B.; **Suresh Kumar H.M.**; Kumar P.; Singh B.; Khadke U.V., Next Materials, 8, Year 2025, DOI:10.1016/j.nxmte.2025.100815
- [38] Solvatochromism, preferential solvation and excited state dipole moments of flufenamic acid in different solvent polarities
N. C. Prachalith, K. Vibha, **H. M. Suresh Kumar**, J. Thipperudrappa and U. V. Khadke,
International Journal of Modern Physics B International Journal of Modern Physics B, **39**, 2025, DOI:10.1142/S0217979225501048
- [39] Design of Molecular Logic Gates Via pH-dependent Absorption and Fluorescence Transitions in Drug Molecules
Annoji Reddy R.; Vibha ;**Suresh Kumar H.M.**; Ravikantha M.N.; Thipperudrappa J. Journal of Fluorescence, 2025, DOI:10.1007/s10895-025-04375-y

National Journals

- [1] Electronic excitation energy quenching of indole derivative by CCl₄ in different solvents.
S.V. Nishti, R.S.Kunabenchi, **H.M. Suresh Kumar**, S.M. Hanagodimath and J.S. Biradar. Indian Journal of Physics, **81(2)**, 53-60, February 2007
- [2] Steady state absorption and fluorescence study: Dipole moments of coumarins
K Chandrasekhar, L R Naik, **H M Suresh Kumar**, N N Math
Indian Journal of Pure and Applied Physics, **44**, 292 – 299, April 2006.
- [3] Fluorescence Quenching of 6-chloro-2-phenyl [benz[b] pyrrole]-1-carboxaldehyde thiosemicarbozone by CCl₄ in different solvents
H.M. Suresh Kumar, M.N. Ravikanth, R.S.Kunabenchi, S.M. Hanagodimath, J.S. Biradar, Renuka.P., N.N. Math, J.S. Kadadevaramath and S.R.Inamdar
Indian Journal of Pure and Applied Physics, **40**, 466-470, July 2002.

Conference Proceedings

- [1] Impact of L-ornithine monohydrochloride on optical and mechanical properties of potassium dihydrogen phosphate crystal,
B. Suresh Kumar, M. R. Jagadeesh, Sindhu Tilak and H.M. Suresh Kumar, *AIP Conf. Proc.* 2399, 020025, December 2023, <https://doi.org/10.1063/5.0132139>
- [2] Effect of temperature on fluorescence quenching and emission characteristics of laser dyes.
H.R. Deepa, J. Thipperudrappa, **H.M. Suresh Kumar** Journal of Physics: Conference Series , **1473**, 012046, March 2020. doi:10.1088/1742-6596/1473/1/012046.
- [3] Optical, thermal, mechanical, dielectric and magnetic properties of Zinc Sulphate doped L-Ascorbic Acid NLO crystal
Sindhu Tilak, **Suresh Kumar H M**, Materials Today Proceedings, **27(P1)**, 512, 2020. 10.1016/j.matpr.2019.11.297

- [4] Growth, characterization and influence of gamma irradiation on strontium chloride doped urea: An NLO crystal
Dileep M S, Sindhu Tilak, **Suresh Kumar H M**, Materials Today Proceedings, **27(P1)**, 06, 2020. 10.1016/j.matpr.2019.08.038

Reviewer of Journals

Elsevier: Journal of Luminescence, Journal of Molecular Structure, Nextmaterials, Materials Today Proceedings, Chemical Physics Impact
Springer: Journal of Material Science: Material Electronics, Silicon
Wiley: Luminescence, Macromolecular Symposia
NRC Canada: Canadian Journal of Physics

Invited Lectures / talks

1. Delivered a lecture on **“Laser Technology and its Applications”** in Siddhartha First Grade College, Tumkur on 2nd March 2013.
2. Delivered an invited lecture on **“Lasers and It’s Applications”** in Three Days Workshop for P.U. Students at Sree Raghavendra P.U.College, Madhugiri and Girls’ Govt P.U.College, **Sira**, organized by Tumkur Science Center, Tumkur, in association with Karnataka Science and Technology Promotion Society, Bangalore on 12th October 2013.
3. Delivered a lecture on **“Influence of gamma radiation on optical properties of the crystal”** in the FDP “Recent Trends in Photonic Techniques at M.S. Ramaiah Institute of Technology, Bangalore on 31st July 2017.
4. Delivered a lecture on **“Introduction to Radio Isotopes”** for faculty and students of Department of Civil Engineering, SIT, Tumakuru on 22nd October 2018.
5. Delivered an invited talk on **“Doped Crystals for Photonics Applications”** in Sci-Tech Fest 4.0 (National Science Day); organized by Department of Physics, Chemistry and Maths, JSS Science and Technology, Mysuru, on 28th February 2024.