Emmanuel Deepak D'Silva, Ph.D.
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Education and Training

Ph.D. (Physics) 2007-2013
Mangalore University, Department of Physics, Karnataka, India

- Crystal Structure and Nonlinear Optical Properties of Solution Grown OrganicMaterials.

M.Sc. (Physics) 2005-2007
Mangalore University, Department of Physics, Karnataka, India

B.Sc. (Physics, Mathematics & Chemistry) 2002-2005
Mangalore University, Karnataka, India

Professional Experience

Mangalore University, India. Sep 2007-Sep2010, *Department of Physics,* India

- Successfully completed the Department of Science and Technology, Government of India funded research project, in the Department of Physics, Mangalore University.
- Involved in teaching and training Masters level courses in Physics.
- Synthesized chalcone crystals, subjected to different characterization techniques to explore linear and non-linear optical properties

Sahyadri College of Engineering and Management, India Jan 2011-Jun2011, Department *of Physics*

- Involved in teaching engineering students.

St. Philomena College, Puttur, Karnataka, Department of Physics, Center for PG Studies and Research (July2012-June2023)

- Served as coordinator of the Department since its inception in the year 2012
- Involved in establishing laboratories for first year PG course and also for second year Nuclear, Electronics and Condensed Matter Specializations
- Guided the students in their research projects/internships
- Established '**Light and Matter Physics Research Laboratory**' from the grant received from VGST

St Aloysius College, Mangaluru, Karnataka, Department of Physics (PG) (July2023-onwards)

- Assistant Professor, grade-II

Workshops and Seminars Organized

1. Convener of one-day National Level Workshop on, "Digital Communication and PCB Fabrication", 1st April 2014, **sponsored by KSCST**.
2. Co-convener of **UGC sponsored** two days National Seminar on "Radiation and Environment", 5th and 6th February, 2015
3. Convener of one day National level Seminar on "Theoretical Aspects of Particle and High energy Physics", 4th April 2015 (**KSCST and KSTA sponsored**)
4. Convener of two-day national level Seminar on "Quantum Mechanics and Applications", 20th and 21st October 2015 (**BRNS, UGC, KSTA and KSCST sponsored**)
5. Convener of One day national workshop "Observational Astronomy and Data Analysis Technique", 5TH November 2016 (**ISRO, INSA sponsored**)
6. Convener of one day national workshop "Quantum Field Theory and Applications", 28th March 2017 (**SERB and CSIR sponsored**)
7. Convener of Two-day national seminar on "Mathematical Physics", 23rd and 24th October 2017 (**NBHM Sponsored**)
8. Co-convener of One-day national workshop on "Science writings and Communication", on 6th September 2018
9. Co-convener of one day workshop on Astronomy, "Wonders of Universe"; held on 13th December 2019 **(Sponsored by Pililkula Regional Science Centre, Mangaluru**)
10. Co-ordinator of the webinar, "Stellar Evolution and Structure of Galaxies", organized on June 8, 2020
11. Co-Ordinator of the webinar series which included five lectures on different topics of Physics and Science; held from 18-1-2021 to 22-1-2021**(Sponsored by Pililkula Regional Science Centre, Mangaluru**).
12. Co-Ordinator of the webinar series which included five lectures on different topics of Physics and Science; held from 28-11-2021 to 06-12-2021(**Sponsored by Pililkula Regional Science Centre, Mangaluru**).
13. Co-convener of two-day workshop on "Nuclear Radiation: Experiments and Instrumentation", on 19th and 20th May, 2022 (**KSTA Sponsored**)

Book Authored

1. Book Authored, "Linear and Nonlinear Optical Properties of Novel Organic Crystals", **Lambert Academic Publishing, Germany**: 01/09/2015, ISBN 978-3-659-66692-6

2. Book Chapter, "Probing strongly correlated electron systems: Crystal growth dynamics, anisotropic studies and emergence of topological semimetals", In: Decadal odyssey in Physics: A chronicle of the PPK endowment lecture series, St Aloysius Prakashana. ISBN: 978-81-963171-9-5.

Research Papers

1. Harshal Jason D. Souza, **E Deepak D Silva**, Naveen D. Souza N, Sahana Nagappa Moger, V.K. Ashith. Aluminium doped magnesium oxide thin films: A possible contender for transparent conducting oxides. ***Optical Materials*** **(2024)**, Volume 154, August 2024, 115651

   https://www.sciencedirect.com/science/article/pii/S0925346724008346?dgcid=coauthor

2. Ashith V K, **E Deepak D'Silva***, Dipanjan Banerjee, S. Venugopal Rao. Characterization of Sol gel derived Spin Coated Copper Incorporation of CdS films for Nonlinear Optical Applications, ***Journal of Current Applied Physics*** **(2024)**, Volume 57, Pages 93-104 *(*Corresponding Author)*

3. Naveen D Souza N, Harshal Jason D Souza, Ashith V K, **E. Deepak D'Silva***. Influence of Preparation Time on Chemical Bath Deposited Alumina (Al2O3) Thin Films. ***Materials today: Proceedings*** **(2023)**, *(*Corresponding Author)*

4. V. K. Ashith & **E. Deepak D'Silva***. Influence of concentration and annealing temperature on spin-coated metal oxide thin films for optoelectronic devices. ***Journal of Materials Science: Materials in Electronics*** **(2021)** https://doi.org/10.1007/s10854-021-05662-7
   *(*Corresponding author)*
5. **E. Deepak D'Silva***, Ismayil, Anshu Gaur, S. Venugopal Rao. Dopant induced modifications in the microstructure and nonlinear optical properties of 4N4MSP chalcone doped PVA films. ***Optical Materials*** **(2020)**, Volume 101, 109708 *(*Corresponding author)*
6. A. P. Monteiro, Vipin Naik, K. B. Vijaya Kumar, Praveen P. D'souza, **E. Deepak D'silva**. Hadronic Loop Effects in Ds Meson Mass Spectrum. *Proceedings of the DAE Symp. on Nucl. Phys.* 63 (2018)

7. Mass Spectrum of Ds Meson in a Non-Relativistic Quark Model with Hulthen Potential. **E Deepak D'Silva**, A. P. Monteiro, Praveen P. D'Souza, Vipin Naik N. S., K. B. Vijaya Kumar. *Proceedings of the DAE Symp. on Nucl. Phys.* 63 (2018)

8. Amit Kumar, Rajesh Kumar, Archana Gupta, Poonam Tandon, **E. Deepak D'silva**. Molecular structure, nonlinear optical studies and spectroscopic analysis of chalcone derivative (2E)-3-[4-(methylsulfanyl)phenyl]-1-(3-bromophenyl)prop-2-en-1-one by DFT calculations. ***Journal of Molecular Structure (2017)***, 1150 166-178.

9. **E.D. D'silva.** Structure report: (2E)-1-(3,4-dimethylphenyl)-3-(3-methylthiophen-2yl)prop-2-en-1-one. *PEARL* (2015), 1, 12-21.

10. Amit Kumar, Vipin Deval, Poonam Tandon, Archana Gupta, **E. Deepak D'silva**. Experimental and theoretical (FT-IR, FT-Raman, UV-vis, NMR) spectroscopic analysis and first order hyperpolarizability studies of non-linear optical material: (2E)-3-[4-(methylsulfanyl)phenyl]-1-(4-nitrophenyl)prop-2-en-1-one using density functional theory. ***Spectro chimica Acta Part A: Molecular and Biomolecular Spectroscopy* (2014)**, 130, 41-53.

11. **E.D. D'silva***, S.M. Dharmaprakash. Electrical and optical characteristic of non-linear optical chalcone derivative. *Elixir Crystal Growth* (2013), 65, 19724-19730. *(*Corresponding author)*

12. **E.D. D'silva***, G.K. Podagatlapalli, S.V. Rao, S.M. Dharmaprakash. Study on third order nonlinear optical properties of 4-methylsulfanyl chalcone derivatives using picosecond pulses. ***Materials Research Bulletin* (2012)**, 47, 3552-3557. *(*Corresponding author)*

13. **E.D. D'silva***, G.K. Podagatlapalli, S.V. Rao, S.M. Dharmaprakash. Structural, optical and electrical characteristics of a new NLO crystal. ***Journal of Optics and Laser Technology* (2012)**, 44, 1687-1697. *(*Corresponding author)*

14. **E.D. D'silva***, G.K. Podagatlapalli, S.V. Rao, D.N. Rao and S.M. Dharmaprakash. New, high efficiency nonlinear optical chalcone co-crystal and structure-property relationship. ***Journal of Crystal Growth and Design* (2011)**, 11, 5362-5369. *(*Correspondingauthor)*

15. **E.D. D'silva***, D.N. Rao, R. Philip., R.J. Butcher, Rajnikant, S.M. Dharmaprakash. Second harmonic chalcone crystal: Synthesis, growth and characterization. ***Physica B: Condensed Matter* (2011)**, 406, 2206–2210. *(*Corresponding author)*

16. **E.D. D'silva***, D.N. Rao, R. Philip, R.J. Butcher, Rajnikant, S.M. Dharmaprakash. Synthesis, growth and characterization of novel second harmonic nonlinear chalcone crystal. ***Journal of Physics and Chemistry of Solids* (2011),** 72, 824–830. *(*Correspondingauthor)*

17. **E.D. D'silva** and S.M. Dharmaprakash. Growth and Characterization Of Organic NLO Crystals of 4-SCH3-4'-Chlorochalcone. *AIP Conf. Proc.* (2011) 1349, 1241-1242

18. H.K. Fun, R. Kia, **E.D. D'silva**, P.S. Patil, S.M. Dharmaprakash. 3-hydroxy 4-methoxy benzaldehyde thiosemicarbazone hemihydrates. *Acta crystallographica Section E* (2008), E64, o2274.

19. H.K. Fun, S. Chantrapromma, **E.D. D'silva**, P.S. Patil, S.M. Dharmaprakash. 2,5-dimethoxy benzaldehyde thiosemicarbazone. *Acta crystallographica Section E* (2008), E64, o935.

20. H.K. Fun, S. Chantrapromma, **E.D. D'silva**, P.S. Patil, S.M. Dharmaprakash. S-benzyl thiouronium 4- anilinobenzenesulfonate. *Acta crystallographica Section E* (2008), E64, 1858.

21. H.K. Fun, S. Chantrapromma, P.S. Patil, **E.D. D'silva**, S.M. Dharmaprakash. (E)-3-(4-methyl phenyl)-1-(4-nitro phenyl) prop-2-en-one. *Acta crystallographica Section E* (2008), E64, o954-o955.

22. H.K. Fun, S.R. Jebas, I.A. Razak, P.S. Patil, S.M. Dharmaprakash, **E.D. D'silva**. (E)-3-(2-Chloro phenyl)-1-(4-chlorophenyl)prop-2-en-one. *Acta crystallographica Section E*(2008), E64, o954-o1177.

23. H.K. Fun, S.R. Jebas, I.A. Razak, **E.D. D'silva**, P.S. Patil, S.M. Dharmaprakash. S-benzylthiouronium3-nitrobenzene sulfonate. *Acta crystallographica Section E* (2008), E64, o1195-o1196.

24. H.K. Fun, S.R. Jebas, P.S. Patil, **E.D. D'silva**, S.M. Dharmaprakash. (E)-1-(4-fluorophenyl)-3-(4-methyl phenyl)prop-2-en-one. *Acta crystallographica Section E* (2008), E64, o935.

Presentations

1. A. Anagha, Akash Arjun Bag, Sandra Sajeevan, **E Deepak D'Silva**, Characterization of copper incorporated CdS spin coated thin films derived from sol gel method. National conference on physical sciences, 1st and 2nd March 2024

2. Ashith V K and **E. Deepak D'Silva**, Characterization of Spin Coated Cu Incorporated ZnS Thin films for Photovoltaic Applications, Conference Proceedings: ICEMA -2022

3. Ashith V K and **E. Deepak D'Silva**, Effect of concentration on Structural and Optical Properties of Metal Oxide Thin Films by Spin Coating Technique, Proceedings on International Conference on Nanoscience and Nanotechnology (ICONN 2021)

4. K. B. Vijaya Kumar, Praveen P. D'souza, Vipin Naik N. S., A. P. Monteiro, and **E. Deepak DSilva**. Decay constants of Pseudoscalar and Vector D, Ds, B and Bs Mesons. Proceedings of the DAE Symp. on Nucl. Phys. 64 (2019). http://sympnp.org/proceedings/64/D33.pdf

5. A.P. Monteiro, Vipin Naik, K. B. Vijaya Kumar, Praveen P. D'souza, **E. Deepak D'silva**. Hadronic Loop Effects in Ds Meson Mass Spectrum. Proceedings of the DAE Symp. on Nucl. Phys. 63 (2018) https://inspirehep.net/files/4893f17b0d5934a46d04647f41052c95

6. Mass Spectrum of Ds Meson in a Non-Relativistic Quark Model with Hulthen Potential. **E Deepak D'Silva**, A. P. Monteiro, Praveen P. D'Souza, Vipin Naik N. S., K. B. Vijaya Kumar. Proceedings of the DAE Symp. on Nucl. Phys. 63 (2018) https://inspirehep.net/files/60bc82ad301028a2df3be53c45254f6a

7. **E.D. D'silva**, S. Raghavendra and S.M. Dharmaprakash. New chalcone crystal 4Br4MSP for nonlinear optical investigations. National Conference on Smart Materials and Technologies for Emerging Electronics. Badaga Mijar, Moodabidri, Karnataka, India, March 8 and 9, 2013.

8. **E.D. D'silva** and S.M. Dharmaprakash. Efficient noncentrosymmetric novel crystal 4-SCH3-4'-nitrorochalcone. *Modern Trends in Science and Technology*, MTST-11, Dr. M.V. Shetty Institute of Technology, Moodbidri, Mangalore, October 14 and 15, 2011.

9. **E.D. D'silva** and S.M. Dharmaprakash. Synthesis, Growth and Characterization Of Organic NLO Crystals of 4-SCH_3-4'-Chlorochalcone. *Solid State Physics, Proceedings of the 55th DAE Solid State Physics Symposium 2010*, AIP Conf. Proc. (2011) 1349, 1241-1242, Manipal University, Manipal, December 26-30, 2010.

10. **E.D. D'silva**, P.S. Patil, S.M. Dharmaprakash. Synthesis and crystal structure of second ordered non-linear optical material: S-benzylthiouronium 3-nitro benzene sulfonate. *38th National Seminar on Crystallography*, Mysore University, February 11-13, 2009.

11. **E.D. D'silva**, R. Philip, R.J. Butcher and S.M. Dharmaprakash. Non-linear absorption studies of newly synthesized chalcone derivatives. *14th National Seminar on Crystal Growth, NSCG-XIV*, VIT University, Vellore, March 10-12, 2010.

Honors and Awards

1. Received the Department of Science and Technology (DST) Research Fellowship (2007-2010).

2. Journal of Optics and Laser Technology, **Most downloaded Paper Award 2012** for the manuscript: **E.D. D'silva***, G.K. Podagatlapalli, S.V. Rao, S.M. Dharmaprakash. Structural, optical and electrical characteristics of a new NLO crystal. ***Journal of Optics and Laser Technology*** (2012), 44, 1687-1697 (*corresponding author).

Research Grant

Awarded 5 lakh funding for the project "Synthesis of novel organic crystal for non-linear optical studies" by the Vison Group on science and technology, Government of Karnataka (VGST Scheme:2017-18).

Participation in Workshop/Faculty Development Programme

1. Participated in Intellectual Property Awareness Training Program organized by Government of India, Ministry of Commerce and Industry on October 20, 2023.

2. Participated in 5-day faculty development program on “Advanced Materials for Energy and Environment”, organized by Department of Physics, School of Applied Sciences, REVA University, from 5th to 9th September 2023.

3. Participated in 7 days national level faculty development programme on “ICT Tools-The emerging trends of teaching” organized by Besant women’s college, Mangaluru on August 24-30, 2021.

4. Participated in 7 days national level faculty development programme on “Academic empowerment and research culture” organized by Sri Venkataramana Swamy College, Bantwal, on 13th-20th September, 2021.

5. Participated in 7 days national level faculty development programme on “Adavaned materials for future science” organized by Jeppiaar Engineering College, Chennai from 6th -13th, September, 2021.

6. Participated in the NPTL Swayam 8 week online course on “Numerical Methods and Simulation Techniques for Scientists and Engineers” and successfully completed the course with the certificate; during August to October 2019.

7. Participated in four-day teacher training workshop on “Research Based Pedagogical Tools”, held at Sacred Heart College, Kochi, Kerala during 11-14 October, 2017. The workshop was jointly sponsored by the Department of Biotechnology (DBT), Government of India; Newton Bhabha Fund of the British Council; Center of Excellence in Science and Mathematics Education, IISER Pune. It was conducted by a team of experts from the center for Science Education, Sheffield Hallam University, UK.

8. Participated in “National Seminar on Saga of Light”, held at St Aloysius College, Mangalura, on 15th of December, 2015.

9. Participated in the conference on “Science and Technology New Horizons: Opportunities and Challenges”, jointly organized by Karnataka Science and Technology Academy (KSTA) and Mangalore University held at Mangalore University; during January 28 to 29, 2012.

10. Participated in awareness workshop on, “The facilities of UGC-DAE consortium for scientific research”, held at MIT, Manipal on September 6 to 7, 2010.

11. Participated in “National Workshop on Nonlinear Optics”, organized by Department of Science and Humanities, NIT Calicut on January 4 to 5 2008.

12. Participated in “Workshop on Electron Microscopy”, held at NITK, Surathkal on 8 to 10 March, 2008.

Professional Activities

1. Ad-hoc Reviewer for manuscripts to be considered for publication in Journal of Molecular Structure, Journal of Materials Science, RSC Advances and Journal of Optics and Laser Technology etc.
2. Served as Associate Editor of PEARL Multidisciplinary, Bi-Annual Research Journal Published by St Philomena College, Puttur
3. Served as Internal Examiner for Mangalore University P.G. Physics Practical Examination
4. Guided two students for their research internship.

Reference

Google scholar link: https://scholar.google.co.in/citations?user=GlQ51Q4AAAAJ&hl=en