

CURRICULUM VITAE

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Academic Qualifications:

- ❖ Ph.D (2013) Cochin University of Science & Technology
- ❖ M.Phil (1987) Cochin University of Science & Technology
- ❖ M.Sc (1985) M.G University, Kerala
- ❖ B.Sc (1983) University of Kerala, Kerala

Membership: Academy of Physics Teachers

Teaching Experience:

- ❖ Post graduate Level – 16 years
- ❖ Graduate Level – 28 years

Research Experience: 9 years

Positions Held:

- ❖ Dean of the College : 2005-2006
- ❖ Head of the Department of Physics : 2006-2015
- ❖ Controller of Examinations : 2014-2015

FIP Leave: 2009-2012

Publications:

- ❖ Papers published in peer reviewed International Journals: **14**
- ❖ Papers published in National Journals: **6**
- ❖ Conference Publications

International: **16**

National: **13**

Achievements

- The interdisciplinary research work on “**Bio-compatible ZnS:Mn nanocrystals conjugated with L-citrulline, as fluorescent probes for DNA visualization and for finger print analysis in forensic studies**”, has been filed for patent with the patent application number **4900/CHE/2012** on 23rd November 2012.

The present work deals with the applicability of manganese doped ZnS (ZnS:Mn) nanocrystals capped with L-citrulline as DNA-staining dye, by replacing ethidium bromide dye and its further application as a powder for forensic finger printing analysis. This opens up a new and cost effective, safe, totally nontoxic and bio compatible alternative in the form of citrulline capped ZnS:Mn nanoparticle for replacing highly toxic and carcinogenic ethidium bromide in DNA staining.

- Received the **Best Paper Presentation Award (first prize)** during the 2nd **International Conference** on “*Optoelectronic Materials and Thin films for Advanced Technology*” (OMTAT 2013) conducted from 3rd to 5th of January, 2013 in Kochi, for the paper “*L-serine capped ZnS:Mn nanocrystals for plant cell biological studies and as a Growth enhancing agent for Micropropagation of Bacopa monnieri Linn*”.
- Received the **Best Paper Presentation Award (second prize)** during the 2nd **International Conference** on “*Nanotechnology at the Bio-Medical Interface*” organized by Amrita Centre for Nanosciences & Molecular Medicine, Kochi, during 21 – 23 February, 2012, for the paper “*Immobilisation of trypsin with chitosan capped ZnS:Mn nanocrystals for therapeutic applications*”.
- Recipient of **Best Paper Award (Oral Presentation)** during the UGC Sponsored **National Seminar** on “*Challenges in Nanoscience and Technology*” organized by Department of Chemistry, St.Teresa’s College, Ernakulam during 28 - 29 July, 2011, for the paper “*Synthesis and Optical Properties of Water-dispersible ZnS:Mn Nanocrystals Capped by L-Aminoacid Ligands*”.
- Received the **Sr. Marie Cecil Endowment award** for Staff Research Publication for two consecutive academic years 2013-14 and 2014-15.
- **Presented a paper** in the Annual International Conference on Optoelectronics, Photonics & Applied Physics (OPAP) 2013, SINGAPORE, 4-5 February 2013.

List of Research Publications

Papers published in International peer reviewed journals:

1. **M. Sajimol Augustine**, Roselin Alex, Sreevalsa VG, Deepa GD, Sarita G.Bhat, Jayalekshmi.S, “Highly luminescent and bio-compatible, L- citrulline capped ZnS:Mn nanocrystals for rapid screening of metal accumulating *Lysinibacillus fusiformis* bacteria” *Journal of Biological and Chemical Luminescence*, 28 (2013) 461–467.
2. **Sajimol Augustine. M**, Anand Puthirath B, Anilkumar Kollery M, Jayalekshmi.S, “Exceptionally good, transparent and flexible FeS₂/PVP and FeS₂/PVA nanocomposite thin films with excellent UV-shielding properties” *Polymer International*, 62 (2013) 523–702.
3. **M. Sajimol Augustine**, P.P Manzur Ali, K. Sapna, K. K Elyas, S. Jayalekshmi, “Size-dependent optical properties of bio-compatible ZnS:Mn nanocrystals and their application in the immobilization of trypsin” *Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy*, 108 (2013) 223–228.
4. **M. Sajimol Augustine**, P.P. Jeeju, V.G. Sreevalsa and S. Jayalekshmi, “Excellent UV absorption in spin-coated thin films of oleic acid modified Zinc oxide nanorods embedded in Polyvinyl alcohol” *Journal of Physics and Chemistry of Solids*, 73 (2012) 396-401.
5. **M. Sajimol Augustine**, S. J. Varma, Francis Xavier and S. Jayalekshmi, “Enhanced photoluminescence in oleic acid modified Polyaniline” *Transactions of the Indian Institute of Metals*, 64 (2011) 209-212.
6. **M. Sajimol Augustine**, P.P Jeeju, S.J Varma, P.A Francis Xavier, S. Jayalekshmi, "Enhanced photoluminescence in transparent thin films of polyaniline-zinc oxide nanocomposite prepared from oleic acid modified zinc oxide nanoparticles", *Thin solid Films* (accepted)
7. Jeeju.P.P, **Sajimol. A.M**, Sreevalsa V.G, S.J.Varma and S.Jayalekshmi, “Size dependent optical properties of transparent, spin coated Polystyrene- ZnO nanocomposite films” *Polymer International*, 60 (2011) 1263–1268.
8. Sreevalsa.V.G, **Sajimol Augustine M**, S.Jayalekshmi, “Characterisation of transparent PVA/aminoacid complex capped ZnO nanocomposite films” *International Journal of Plastics Technology*, 15 (2011) 10-18.

9. V.G. Sreevalsa, P.P. Jeeju, **M. Sajimol Augustine**, K M. Anilkumar, S. Jayalekshmi, “L-Histidine Modified Biocompatible Zinc Oxide Nanocrystals“ *Journal of Experimental Nanoscience*. 8 (2013) 7- 8.
10. P.P.Jeeju, S. J.Varma, P.A.Francis Xavier, **A. M. Sajimol**, S.Jayalekshmi, “Novel Polypyrrole films with excellent crystallinity and good thermal stability” *Materials chemistry and physics*. 134 (2012) 803-808.
11. V.S. Dhanya, M.R Sudarsanakumar, S.Suma, Seik Weng Ng, **M. Sajimol Augustine**, Sunalya M. Roy, “ Crystal structure, thermal decomposition, photoluminescence and magnetic studies of a new two dimensional metal–organic framework constructed from infinite chains of edge-sharing CeO₆(H₂O)₂(NO₃) polyhedron with bullet shaped channels” *Inorganic Chemistry Communications*, 35 (2013).
12. **M. Sajimol Augustine**, P.B. Anand, S. Jayalekshmi, “Opto-electronic applications of chitosan capped ZnS:Mn/PVA nanocomposite thin films”, proceedings of *Annual International Conference on Optoelectronics, Photonics & Applied Physics (OPAP) 2013*, Singapore, 4-5 February 2013.ISSN:2301-3516 pages 65-68 (2013)
13. **Sajimol Augustine M**, Lizzy Mathew, Roselin Alex, Deepa G D, Jayalekshmi.S, “L-serine capped ZnS:Mn nanocrystals for plant cell biological studies and as a Growth enhancing agent for Micropropagation of Bacopa monnieri Linn. (Brahmi: Scrophulariaceae)”), AIP Jan2014, Vol. 1576, p110. I
14. **M.Sajimol Augustine**, AnasAbdulaziz, AniV.Das, S.Sreekanth and S.Jayalekshmi, “Cytotoxicity Assessment and Uptake Study of Bio-compatible ZnS:Mn nanocrystals” *Spectrochimica Acta*

Papers published in national journals:

1. **M. Sajimol Augustine**, P.Indu, V.G Sreevalsa, P.P Jeeju, S.Jayalekshmi, “Solvent dependent optical properties of highly luminescent nanocrystals of ZnS doped with Manganese”, *Science and Society*, 9 (2011) 109-113.
2. **M. Sajimol Augustine**, V.G Sreevalsa, P.P Jeeju, S.Jayalekshmi, Synthesis and Characterization of highly luminescent ZnS:Mn/PMMA nanocomposite films, *Journal of Current Studies*, (ISSN: 2277-2707) 2(1) (2012) 27-32.
3. V.G Sreevalsa, P.P Jeeju, **M. Sajimol Augustine**, S. Jayalekshmi, “Studies on L- citrulline Capped Zinc Oxide Nanocrystals“ *Science and Society*, 9 (2011) 183-189.
4. P.P. Jeeju, P.A. Francis Xavier, **A.M. Sajimol**, V.G. Sreevalsa, Jayalekshmi, “Micelle-assisted synthesis of polypyrrole nanoparticles and their characterization “ *Science and Society*, 9 (2011) 113-121.

5. Jeeju P. P. , Sreevalsa V. G., **M. Sajimol Augustine**, S. Jayalekshmi, Nonlinear Optical Properties of ZnO/ Polyvinylpyrrolidone Nanocomposite Films, Journal of Current Studies, (ISSN: 2277-2707) 3 (2013).
6. **M. Sajimol Augustine**, V.G Sreevalsa, P. P. Jeeju and S. Jayalekshmi; *Synthesis and Characterization of highly luminescent ZnS:Mn/PMMA nanocomposite films*, Journal of Current Studies (ISSN:2277-2707) 2 (1) 27-32 (2012)

Papers published in International Conferences

1. **M. Sajimol Augustine**, P.P Jeeju, Sreekanth J. Varma, “Optoelectronic Applications of highly crystalline Pani/ZnO nanocomposites prepared from Oleic Acid capped ZnO Nanoparticles” Proceedings of International Conference on Photonics and Solar Water Splitting (PSWS-2015), at Cochi,12-13 March 2015.
2. **Sajimol Augustine M**, Alphonsa Vijaya Joseph, Sarita.G.Bhat, Jayalekshmi S, “Biofunctionalized ZnS:Mn nanocrystals for the identification of waterborne bacterial pathogens” proceedings of Conference on Energy Harvesting Storage and Conversion [IC-EEE], at CUSAT Cochin, 4 - 7 February 2015.
3. **M. Sajimol Augustine**, P.B. Anand, S. Jayalekshmi, “Opto-electronic applications of chitosan capped ZnS:Mn/PVA nanocomposite thin films”, Proceedings of the Annual International Conference on Optoelectronics, Photonics & Applied Physics (OPAP) 2013, SINGAPORE, 4-5 February 2013.
4. **Sajimol Augustine M**, Lizzy Mathew, Roselin Alex, Deepa G D, Jayalekshmi.S, “L-serine capped ZnS:Mn nanocrystals for plant cell biological studies and as a Growth enhancing agent for Micropropagation of Bacopa monnieri Linn. (Brahmi: Scrophulariaceae)” Proceedings of the International conference on Optoelectronic Materials and Thin films for Advanced Technology (OMTAT 2013), Kochi, Kerala, 3-5 January 2013.
5. **M.Sajimol Augustine**, AnasAbdulaziz, AniV.Das, S.Sreekanth and S.Jayalekshmi, “Cytotoxicity Assessment and Uptake Study of Bio-compatible ZnS:Mnnanocrystals” Proceedings of the International Conference on Nutritional Medicine, Health and Wellness, NUWELL’2012, at St,Teresa’s College, Ernakulam,7- 8 June 2012.
6. **M.Sajimol Augustine**, P.P Manzur Ali, K.Sapna , K.KElyas, S.Jayalekshmi, “Immobilisation of trypsin with chitosan capped ZnS:Mnnanocrystals for therapeutic applications” Proceedings of the International Conference on Nanotechnology at the

Bio-Medical Interface at Amrita Centre for Nanosciences& Molecular Medicine, Kochi, during 21 – 23 February, 2012.

7. **M.Sajimol Augustine**, P.P Jeeju, S. Jayalekshmi, “Highlyluminescent PANI/ZnO nanocomposite films prepared from oleic acid capped ZnO nanoparticles“ Proceedings of the Third International conference on frontiers in Nano Science and Technology (Cochin Nano – 2011), Cochin, 14-17 August 2011.
8. **M.Sajimol Augustine**, S. J. Varma, Francis Xavier P.A ,S. Jayalekshmi, “Enhanced photoluminescence in oleic acid modified Polyaniline” International Symposium for Research Scholars (ISRS-2010) on Metallurgy, Materials Science and Engineering at IIT Madras, 26-28 December 2010.
9. **M.Sajimol Augustine**, S J. Varma, Francis Xavier, S. Jayalekshmi, “Enhanced photoluminescence behaviour of PANI/ZnOnanocomposite prepared from oleic acid capped ZnO nanoparticles” Proceedings of the International conference on Recent Trends in Material Science and Technology, ICMST 2010, IIST Trivandrum, 29-31October 2010.
10. **M. Sajimol Augustine**, S. Jayalekshmi, “Solvent dependent optical properties of spin-coated transparent nanocomposite films of oleic acid capped ZnO quantum dots in PVA matrix” Proceedings of the International conference on Advancements in Polymeric Materials, APT- 2010 , at Rubber Park, Cochin, 26-27 Feb 2010.
11. **M. Sajimol Augustine**, S. Jayalekshmi, “Optical properties of spin-coated transparent nanocomposite films of oleic acid capped ZnO quantum dots in Polyvinyl alcohol” Proceedings of the International conference on Advancements in Polymeric Materials,APM-2010, Trends and Technology, at CIPET, Bhuvanesar, 20-22 Feb 2010.
12. P.P Jeeju, **M. Sajimol Augustine**, “Synthesis and Characterization of soluble polypyrrole nanoparticles” Proceedings of International Conference on Photonics and Solar Water Splitting (PSWS-2015), at Cochi,12-13 March 2015.
13. Sneha Joseph, **Sajimol Augustine M.** “Investigations on structural and optical characteristics of films of some doped ZnS nanoparticles in PVA matrix”, Proceedings of International Conference On Advances In Material Science (**ICAMS**), 23-24 October 2013.
14. Jeeju.P.P,Sreevalsa.V.G, **Sajimol. A. M** and S.Jayalekshmi, “Enhanced UV-shielding properties of ZnO/PS-PMMA nanocomposite films” Proceedings of the Third International conference on frontiers in Nano Science and Technology. (Cochin Nano – 2011), Cochin, 14-17 August 2011.

15. Sreevalsa.V.G, Jeeju.P.P, **Sajimol Augustine. M** ,Jayalekshmi.S, “Effect of various capping agents on the optical properties of Zinc oxide nanocrystals” Proceedings of the Third International conference on frontiers in Nano Science and Technology. Cochin, Nano – 2011, 14-17 August 2011.
16. Sreevalsa.V.G, **Sajimol Augustine M**, S.Jayalekshmi, “Characterisation of transparent PVA/aminoacid complex capped ZnO nano composite films” Proceedings of the International conference on Advancements in Polymeric Materials.APM-2010, Trends and Technology at CIPET, Bhuvanewar, 20-22 Feb 2010.

Papers published in National Conferences

1. **M. Sajimol Augustine**, P.Indu, V.G Sreevalsa, P.P Jeeju, S.Jayalekshmi, “Solvent dependent optical properties of highly luminescent nanocrystals of ZnS doped with Manganese” Proceedings of the National symposium on Nano Science and Technology, Nanotech – 2011, at Nirmala College Muvattupuzha, Kerala, 1-2September 2011.
2. **M. Sajimol Augustine**, V.G Sreevalsa, P.P Jeeju, S. Jayalekshmi,” Synthesis and Optical Properties of Water-dispersible ZnS:Mn Nanocrystals Capped by L- aminoacid ligands” Proceedings of the national seminar on Challenges in Nanoscience and Technology, CNT-2011, at St.Teresa’s College, Ernakulam, 28-29 July 2011
3. **M.Sajimol Augustine**, S. Jayalekshmi, “Size dependent optical properties of spin-coated nanocomposite films of oleic acid capped ZnO nanoparticles in PVA matrix” Proceedings of the 1st Kerala Women’s Science Congress 2010, at St.Teresa’s college Ernakulam, 10-12 August 2010.
4. **M.Sajimol Augustine**, S.Jayalekshmi, “Effect of capping on the optical properties of ZnO/PVA nanocomposite thin films” Proceedings of the national seminar on Nano structured materials and Nano photonics, at St.Teresa’s college, Ernakulam; 4-5 Jan 2010.
5. **M. Sajimol Augustine**, S.Jayalekshmi, “Influence of synthesis conditions on particle size and optical properties of highly luminescent ZnO nanoparticles doped with Na” Proceedings of the national seminar on Quantum chemistry and Nano techniques at SNM College Maliankara, Ernakulam; 19-20 Nov 2009.
6. **M. Sajimol Augustine**, S. Jayalekshmi, ”Highly luminescent, transparent and freestanding nanocomposite films of bio-functionalized ZnS:Mn in PS-PMMA matrix” Proceedings of National Seminar on Recent trends in Photonics, at International school of Photonics, CUSAT, Kerala, 2-4 November 2012

7. **M. Sajimol Augustine**, V.G Sreevlasa, P.P Jeeju, S. Jayalekshmi, “Highly luminescent, transparent and flexible nanocomposite films of bio-functionalized ZnS:Mn in PVA-PVP matrix“ Proceedings of National Seminar on Current Trends in the fields of Nanoscience and Nanotechnology, K.K.T.M Govt.College, Pullut, Kerala, 13-14 December 2012.
8. **M. Sajimol Augustine** and S. Jayalekshmi , Synthesis and Characterization of Highly Luminescent ZnSMn: PMMA nanocomposite Films, Proceedings of Recent Trends in the Development of materials and Nano devices RTNN 2013, P.no:73
9. **M. A. Sajimol** and S.Jayalekshmi, “Highly transparent ,water-soluble, spin-coated PVA/ZnO nanocomposite thin films for UV shielding applications”, Proceedings of 23rd SWADESHI SCIENCE CONGRESS during 6-8 November 2013, M.G University, Kottayam.
10. P.P. Jeeju, P.A. Francis Xavier, **A.M. Sajimol**, V.G. Sreevalsa, .Jayalekshmi,“Micelle-assisted synthesis of polypyrrole nanoparticles and their characterization “Proceedings of the National symposium on Nano Science and Technology, Nanostech – 2011, at Nirmala College Muvattupuzha, Kerala, 1-2 September 2011.
11. V.G Sreevalsa, P.P Jeeju, **M. Sajimol Augustine** and S. Jayalekshmi, “Studies on L-citrulline Capped Zinc Oxide Nanocrystals“ Proceedings of the National symposium on Nano Science and Technology, Nanostech – 2011, at Nirmala CollegeMuvattupuzha, Kerala, 1-2 September 2011.
12. P.P Jeeju, **Sajimol A.M**, V.G Sreevlasa, “Linear and Nonlinear optical properties of Transparent, spin-coated ZnO/Polyvinyl alcohol nanocomposite films” Proceedings of National Seminar on Current Trends in the fields of Nanoscience and Nanotechnology, K.K.T.M Govt.College, Pullut, Kerala, 13-14 December 2012.
13. V.G Sreevlasa, **Sajimol Augustine**, P.P Jeeju, “Third order nonlinearity and biocompatibility studies of L- histidine capped ZnO nanocrystals” Proceedings of National Seminar on Current Trends in the fields of Nanoscience and Nanotechnology, K.K.T.M Govt.College, Pullut, Kerala, 13-14 December 2012.