



# SRM Valliammai Engineering College


(An Autonomous Institution)

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## Department of Chemistry

### Personal Details

<b>Name :</b>	Dr. L. Devaraj Stephen	
<b>Designation :</b>	Assistant Professor (SG) & HOD	
<b>Educational Qualification :</b>	M.Sc., Ph.D.	
<b>Experience:</b>	14 years	
<b>Area of Specialization :</b>	Physical Inorganic Chemistry, Crystal Engineering	
<b>Date of Joining :</b>	10/08/2009	
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### Educational Details

S.No	Degree	Branch/Specialization	Institution / University	Year
1	<b>B.Sc.,</b>	Chemistry	Bishop Heber College, Tiruchirappalli	2001
2	<b>M.Sc.,</b>	Chemistry	Bishop Heber College, Tiruchirappalli	2003
3	<b>Ph.D.</b>	Physical Inorganic Chemistry	Gandhigram Rural Institute, Dindigul	2010

### Professional Society Memberships

1. Indian Society of Technical Education	- Life Member
2. Indian Association of Crystal Growth	- Life Member
3. Association of Chemistry Teachers	- Life Member
4. International Association of Academicians and Researchers	- Life Member
5. Indian Science Congress Association	- Annual Member

### Publication Details

#### Journals:

- ‘Two-trace two-dimensional (2T2D) correlation infrared spectral analysis of Spirulina platensis and its commercial food products coupled with chemometric analysis’, E Kavitha, **L Devaraj Stephen**, Fatema Hossain Brishti, S Karthikeyan, Journal of Molecular Structure, 1244, 2021, 130964-130965
- ‘Carbazole Terminal Phenylene core Imine Skeletal Nanosilica reinforced Polybenzoxazine (nSiO<sub>2</sub>/PBZ) Hybrid Nanocomposites’, V. Arivalagan, **L. Devaraj Stephen**, M. Meera, S.G. Gunasekaran, Journal of Polymer Research, 28, 2021, 381-395
- ‘Structurally Designed Imine Skeletal Pyrenyl Pendant Pyridine Core Polybenzoxazine (nSiO<sub>2</sub>/PBZ) Hybrid Polymer Nanocomposites’, S.G. Gunasekaran, **L. Devaraj Stephen**, V. Arivalagan, M. Soundarrajan, Asian Journal of Chemistry, 33(4), 2021, 793-801

- ‘Removal of arsenic, nitrate and fluoride by PEES/Nano- Silver Hybrid Membranes’, P. Maheswari, S.G.Gunasekaran, **L.Devaraj Stephen**, Research Journal of Chemistry and Environment, 25, 2021, 9-13
- ‘Phenyl Pendant Carbazole End Capped Pyridine Core Imine Skeletal Based Polybenzoxazine-Nanosilica (nSiO<sub>2</sub>/PBZ) Hybrid Nanocomposites’, V. Arivalagan, **L. Devaraj Stephen**, M. Soundarrajan, S.G. Gunasekaran, International Research Journal of Engineering and Technology, 8(1), 2021, 2119-2127
- ‘Ion-Pair Formation of [Co<sup>III</sup>(pn)<sub>2</sub>(Cl)(l)<sup>2+</sup>..I<sup>-</sup>] by Aqueous Organic Solvent medium Enhanced Photoreduction: A Perspective Regression Analysis’, **L.Devaraj Stephen**, S.G. Gunasekaran, M. Soundarrajan, Asian journal of Chemistry, 32, 2020, 139-1383
- "Nanotitania Reinforced Imine Skeletal Maleimido Terminal Phenylene Core Poly benzoxazine (nTiO<sub>2</sub>) Nanocomposites’, M. Soundarrajan, **L. Devaraj Stephen**, V. Arivalagan, S.G. Gunasekaran, International Research Journal of Engineering and Technology, 7, 2020, 866-872
- “Design and development of novel flexible bismaleimide toughened multi-walled carbon Nanotube reinforced epoxy nanocomposites” M. Soundarrajan, **L. Devaraj Stephen**, S.G. Gunasekaran, Rasayan.J.Chem., 12(1), 2019, 168-183
- “Thermal Reduction of Co<sup>III</sup>(pn)<sub>2</sub>Cl(L)<sup>2+</sup>-Fe(II) Ions in Aqueous-Organic Solvent Medium *via* Outer-Sphere Electron Transfer Approach” **L. Devaraj Stephen**, S.G. Gunasekaran, G. Nalini, M. Soundarrajan, Asian.J.Chem, 31(1), 2019, 191-198
- “Solvent effects on outer-sphere electron transfer between Co<sup>III</sup>(L)<sub>3</sub><sup>3+</sup>-Fe(II) ions in aqueous organic solvent media: a speciation approach” **L. Devaraj Stephen**, Rasayan.J.Chem., 11(1), 2018, 155-165
- “Comparative removal of chromium toxic metal from water using vermiculite blended chitosan coated carbon biopolymer composites” S.G. Gunasekaran, **L. Devaraj Stephen**, M. Soundarrajan, Int. J. Civil E ngg & Tech., 9, 2018, 76-86
- “Triaryl Pendant Pyridine core Hydroxyl Terminal Benzoxazine based Polybenzoxazinesilica (PBZ-SiO<sub>2</sub>) hybrid nanocomposites” S.G. Gunasekaran, V. Arivalagan, **L. Devaraj Stephen** and M. Dharmendra Kumar, J.Nanosci.Nanotech., 17, 2017, 1-17
- “Differential CocrySTALLIZATION Behavior of Isomeric Pyridine Carboxamides toward Antitubercular Drug Pyrazinoic Acid” - K. Durgaprasad, C. Suryanarayanan, G. Ramesh, **L. Devaraj Stephen**, P. Saravanakumar and T.N. Guru Row, Cryst.Growth.Des., 15(2), 2015, 858-866
- “Effect of inductive effect on the formation of cocrystals and eutectics” - K. Durgaprasad, C. Suryanarayanan, **L. Devaraj Stephen** and T.N. Guru Row, CrystEnggComm, 16, 2014, 9930-9938
- “Structural features and existence of three photon absorption in Ag doped TiO<sub>2</sub> nanoparticles, synthesized by sol-gel technique” - K. Mani Rahulan, N. Padmanathan, **L. Devaraj Stephen**, Charles Christopher Kanakam, J.Alloy.Compds, 554,2013, 432-437
- “Spectral and nonlinear optical transmission studies of Zr<sup>4+</sup>-doped TiO<sub>2</sub> nanoparticles” - K. Mani

Rahulan, **L. Devaraj Stephen**, Charles Christopher Kanakam, Applied Surface Science, 266,2013, 326-331

- “Synthesis and optical limiting effects in ZrO<sub>2</sub> and ZrO<sub>2</sub>@ SiO<sub>2</sub> Core-Shell nanostructures” - K. Mani Rahulan, G. Vinitha, **L. Devaraj Stephen**, Charles Christopher Kanakam, Ceramics International, 39, 2013, 5281-5286
- Modeling Analysis of the Photoreduction of Cobalt(III) Speciation via (Co<sup>III</sup>-I) Ion Pair Formation in Water-1,4-Dioxane Mixtures with XRPD and Voltammetric Studies” - **L. Devaraj Stephen** and K. Anbalagan, Chem.Sci.Trans, 2(s1),2013, 65-70
- “UV-sensitized nanomaterial semiconductor catalytic reduction of Co<sup>III</sup>(N-N)<sub>3</sub><sup>3+</sup>/nm-TiO<sub>2</sub> and Co:TiO<sub>2</sub> formation: SEM-EDX and HRTEM analyses” - K. Anbalagan and **L. D. Stephen**, Trans Met Chem, 34, 2009, 915-923.
- “Influence of Water-Methanol Solvation Assembly and the Key Consequences on the Photo Reduction of Co<sup>III</sup>(L)<sub>3</sub><sup>3+</sup> (L = (NH<sub>3</sub>)<sub>2</sub>, en, pn) Complexes via Ion- Pair Formation” - K. Anbalagan and **L. D. Stephen**, Z. Phys. Chem. 220, 2006, 335-348.

#### Conferences:

- “Enhancement of photocatalytic performance of the metal centered Co<sup>III</sup>(L)<sub>3</sub><sup>3+</sup> with nm-TiO<sub>2</sub> in binary solvent medium”- **L. Devaraj Stephen** presented in the “National Virtual Conference on Recent Advances in Materials Science(NVCRAMS 2021)”) organized by St. Peter’s Institute of Higher Education and Research, Chennai during 07-08<sup>th</sup> October 2021.
- ‘A Homogenous Molecular System for Co<sup>III</sup>(Tn)<sub>2</sub>Cl(L)<sup>2+</sup>/Nm-TiO<sub>2</sub> under Visible-Light Irradiation in Binary Solvent Mixtures’- **L. Devaraj Stephen** presented in the International Virtual Conference on Chemical Research for Sustainable Development (ICCRSD-2021) organized by SRM Institute of Science and Technology, Ramapuram, Chennai during 24-26<sup>th</sup> September 2021.
- ‘Visible Light driven Photocatalysis in Co<sup>III</sup>(pn)<sub>2</sub>Cl(L)<sup>2+</sup>/nm-TiO<sub>2</sub> systems with Binary Solvent Mixtures’- **L. Devaraj Stephen** presented in the International e-Conference on Advanced Materials (ICOAM-2021) organized by J. P. College of Arts and Science, Tenkasi during 24-26<sup>th</sup> September 2021.
- ‘Chelation Precipitation Process with Photoreduction of Co<sup>III</sup>(pn)<sub>2</sub>Cl(L)<sup>2+</sup> for Heavy Metal Complexes in Wastewater Treatment-A related Complex Matrices’- **L. Devaraj Stephen** presented in the International Conference on Recent Innovations in Science, Engineering & Technology-ICRISET-2021’ organized by from Jeppiaar Institute of Technology, held during 30/07/2021 to 31/07/2021
- ‘Photocatalysis in Co<sup>III</sup>(Tn)<sub>2</sub>Cl(L)<sup>2+</sup> on multifunctional amorphous TiO<sub>2</sub> suspensions in binary solvent mixtures under visible light’- **L. Devaraj Stephen** presented in the International Conference on Current Trends in Material Science and Technology (CTMST-2021) organized by Nehru Institute of

Technology, held on 26th July 2021.

- ‘Surface and Interface Control of the Metal Centered  $\text{Co}^{\text{III}}(\text{tn})_2\text{Cl}(\text{L})^{2+}$  with nm-TiO<sub>2</sub> in Binary Solvent Mixtures-A Visible Light Driven Photocatalysis’- **L. Devaraj Stephen** presented in the ‘International Virtual Conference on Advances in Chemistry and Materials (ICCM-2021)’ organized at Saveetha Engineering College, held during 21/07/2021 to 22/07/2021.
- ‘The Effects of Binary Solvent Interaction on  $\text{Co}^{\text{III}}(\text{tn})_2\text{Cl}(\text{L})^{2+}$  with Visible-light Irradiated Titania Photocatalyst’- **L. Devaraj Stephen** presented in the International Conference on Recent Innovations in Science, Engineering and Technology (ICRISET) organized at Jeppiaar Institute of Technology, held during 24-25 July 2020.
- “Visible Light Driven Photocatalysis in  $\text{Co}^{\text{III}}(\text{pn})_2\text{Cl}(\text{L})^{2+}$  on Aqueous TiO<sub>2</sub> suspensions in Binary Solvent Mixtures”- **L. Devaraj Stephen** presented in the National Conference on Recent Trends in Chemical Sciences (NCRTCS’2020) organized by SSN College of Engineering , Nov. 26-27, 2020 and received the **Best Paper Presentation Award**.
- “Heavy Metal Complexes Wastewater Treatment with Photoreduction of  $\text{Co}^{\text{III}}(\text{pn})_2\text{Cl}(\text{L})^{2+}$  - An Chelation Precipitation Process- **L. Devaraj Stephen** presented in the International Conference on Sustainable Technologies for Industrial Hazardous Waste Management and Bioenergy, SRM Institute of Science & Technology, Kattankulathur, 07-09<sup>th</sup> August 2019.
- “Influence of nm-TiO<sub>2</sub> on the Photoreduction of  $\text{Co}^{\text{III}}(\text{N-N})_3^{3+}$  in binary solvent Medium”, **L. Devaraj Stephen** presented in the International Conference on Green Chemistry for Greener Planet, Anna Adarsh College, Chennai, 12<sup>th</sup> September 2018.
- “Photocatalytic behavior of the Metal Centre of  $\text{Co}^{\text{III}}(\text{en})_3^{3+}$  with nm-TiO<sub>2</sub> in binary Solvent Mixtures” **L. Devaraj Stephen** presented in the Adroit Conference on Emerging Trends in Chemistry, Jeppiar SRR Engineering College, Chennai, 2<sup>nd</sup> August 2018.
- “Photocatalytic Behaviour of the Metal Centre of  $\text{Co}^{\text{III}}(\text{L})_3^{3+}$  with nm-TiO<sub>2</sub> in Binary Solvent Medium” - **L. Devaraj Stephen** presented in the National Conference on Challenges in Energy Conversion and Environmental Applications, Bannari Amman Institute of Technology, 23-24<sup>th</sup> March 2018.
- “Photo induced activation of  $\text{Co}^{\text{III}}(\text{tn})_2\text{Cl}(\text{L})^{2+}$  on aqueous TiO<sub>2</sub> suspensions under visible-light illumination in binary solvent mixtures” - **L. Devaraj Stephen** presented in the 4<sup>th</sup> International Conference on Nanoscience and Nanotechnology (ICONN 2017), SRM University, 9-11 August 2017.
- “Photoreduction of  $\text{Co}^{\text{III}}(\text{pn})_2\text{Cl}(\text{L})^{2+}$  on aqueous TiO<sub>2</sub> suspensions under visible-light in binary solvent mixtures” - **L. Devaraj Stephen** presented in the National Conference on Advances in Functional Materials (NCAFM 2017), St. Joseph’s College of Engineering, Chennai, 5<sup>th</sup> August 2017.

- “Photoinduced Activation of  $\text{Co}^{\text{III}}(\text{pn})_2\text{Cl}(\text{L})^{2+}$  on aqueous  $\text{TiO}_2$  suspensions under visible-light illumination in binary solvent medium”- **L. Devaraj Stephen** presented in the International Conference on Energy, Environment and Advanced Materials for a Sustainable Future (ICEEAMSF-2017) organized by Kongu Engineering College, Perundurai, 23-24 May 2017.
- **L. Devaraj Stephen** attended Summer Research Fellowship Programme (SRFP-2016) sponsored by Government of India for two months at Indian Institute of Science, Bangalore, May-July 2016
- **L. Devaraj Stephen** attended the two day Mid-Year Meeting of Scientific lectures at Indian Institute of Science, Bengaluru during July 1-2, 2016.
- **L. Devaraj Stephen** attended INUP familiarization workshop on the 'Nanofabrication Technologies' during Dec 16-18, 2015 at IIT Bombay, Mumbai.
- “Approach of Cocrystallisation to improve the solubility and photostability of anti-tubercular pro drug pyrazinamide” - **L. Devaraj Stephen** presented in the National Conference on Science and Technology for the Indigenous Development in India organized by S.R.M. University, Nov. 26-28, 2015 and received the **Best Paper Presentation Award**.
- “Photoreduction of  $\text{Co}^{\text{III}}(\text{pn})_2\text{Cl}(\text{L})^{2+}$  on Aqueous  $\text{TiO}_2$  suspensions under Visible-Light Illumination in binary solvent mixtures” - **L. Devaraj Stephen** presented in the 2<sup>nd</sup> National Conference on New Renaissance in Chemical Research (NCNR CR-2015) organized by the Department of Chemistry, SRM University, Ramapuram, Chennai, Aug 28-29, 2015.
- “Photoinduced activation of  $\text{Co}^{\text{III}}(\text{tn})_2\text{Cl}(\text{L})^{2+}$  on Aqueous  $\text{TiO}_2$  suspensions under Visible-Light Illumination in binary solvent mixtures” - **L. Devaraj Stephen** presented in the International Seminar on Save Blue to Save Green organized by the Department of Chemistry, Anna Adarsh College for Women, Chennai, Aug 28, 2015.
- “Photoreduction of  $\text{Co}^{\text{III}}(\text{pn})_2\text{Cl}(\text{L})^{2+}$  on Aqueous  $\text{TiO}_2$  suspensions under Visible-Light Illumination in Aqueous-Organic Solvent Media” - **L. Devaraj Stephen** presented in the National Seminar on Recent Advances in Chemistry organized by Department of Chemistry, Kandaswami Kandar's College, Velur, Aug 13-14, 2015.
- “Salt and Cocrystal Screening of the anti-tubercular drug Pyrazinoic Acid” - **L. Devaraj Stephen, K. Durga Prasad, C. Suryanarayan and T.N. Guru Row** presented in “National Conference on “Drug, Discovery and Development”-3D's in Pharmacy”, SRM College of Pharmacy, Chennai, 19-20<sup>th</sup> September, 2014.
- “Photoinduced activation of  $\text{Co}^{\text{III}}(\text{tn})_2\text{Cl}(\text{L})^{2+}$  on Aqueous  $\text{TiO}_2$  suspensions under Visible-Light Illumination in mixed solvents” - **L. Devaraj Stephen** and K. Anbalagan presented in “International Conference on Advances in New Materials” (ICAN-2014), University of Madras, Chennai, 20<sup>th</sup> and 21<sup>st</sup> June, 2014
- **L. Devaraj Stephen** attended AICTE sponsored Faculty Development Programme on “Better Engineering through Better Chemistry Protocols”, National Institute of Technology (NIT), Calicut,

09-13 June 2014.

- **L. Devaraj Stephen** attended Summer Research Fellowship Programme (SRFP-2013) sponsored by Government of India for two months at Indian Institute of Science, Bangalore, June-July 2013.
- “Modelling analysis of the photoreduction of cobalt(III) speciation via (co<sup>III</sup>-I) ion pair formation in water-1,4-dioxane mixtures with XRPD and voltammetric studies”- **L. Devaraj Stephen** and K. Anbalagan presented in “National Conference on Chemistry Solutions”, SRM University, Chennai, 21 & 22<sup>nd</sup> February, 2013.
- **L. Devaraj Stephen** attended AICTE sponsored Faculty Development Programme on “CATALYSIS”, National Institute of Technology (NIT), Calicut, 04-08 June 2012

### Research and Development Details

- **Summer Research Fellow (SRFP-2016)** at Indian Institute of Science, Bangalore with Prof E. Arunan, Department of Inorganic & Physical Chemistry, Indian Institute of Science, Bengaluru. (May 2016 to July 2016)
- **Summer Research Fellow (SRFP-2013)** at Indian Institute of Science, Bangalore with Prof.T.N.Guru Row, Solid State & Structural Chemistry Unit, Indian Institute of Science, Bengaluru. (May 2013 to July 2013)
- **Project Assistant** – Gandhigram Rural Institute, Dindigul, July 2003 to June 2006.