

1. Name : Dr. R. Vijay Solomon
2. Designation : Assistant Professor
3. Educational Qualification : M.Sc., Ph.D.,
4. Courses taught at MCC
 - Basic Chemistry II (BCII – 2nd Semester, B.Sc., Chemistry)
 - Computer Aided Chemistry (CAC – 5th Semester, B.Sc., Chemistry)
 - Group Theory & Quantum Mechanics (GTQM – 2nd Semester, M.Sc., Chemistry)
 - Electro Chemistry & Spectroscopy (ECS– 3rd Semester, M.Sc., Chemistry)
 - M.Sc., Physical Chemistry Practicals (Both Odd and Even Semesters)
 - Allied Chemistry Practicals (Both Odd and Even Semesters)
5. Administrative Experience, if any, in MCC
 - Department Educational Tour Coordinator 2016-2017
 - Department Remedial Classes In-charge since 2016
6. Orientation and Refresher Courses Attended : NIL
7. Papers presented in National & International Seminars / Conferences:

1. Presented a paper entitled “***Importance of vibrational spectroscopy on the synthesis of acetoxyflavone***” in National conference in Recent Advances in Vibrational Spectroscopy on 29th, January 2007 at Periyar University, Salem.

2. Presented a paper entitled “ ***Natural Product Adhatoda Zeytanica Medikus Extract As Corrosion Inhibitor Of Commercial Mild Steel Surface In 1 M HCl*** ” in National Seminar on Current Trends in Chemistry on 6th February 2007 at Lady Doak College, Madurai, Tamil Nadu, India.

3. Presented a paper entitled “***Improving quality of Higher Education***” in National Seminar on “Curriculum Innovations and Quality Improvement in Higher Education” on 3rd March 2007 at Khadir Mohideen College, Adiramattinam, Tamil Nadu, India.

4. Presented a paper entitled “***corrosion inhibitin studies on commercial mild steel using Glutamine, Salicylaldehyde and cystine as inhibitors in 1.0 M HCl Medium***” in National Conference on Recent Trends in Chemistry on 12th October 2007 at Bishop Heber College, Trichy, Tamil Nadu, India.

5. Presented a paper entitled "***study on the effect of removal of Arsenic poisoning using prepared Fe₃O₄ nanoparticle via sonochemical route***" in "National Conference on Nano materials - Preparation , Characterization and Devices" organized by PG Department of Physics, Bishop Heber College on 14th march, 2008 and this paper was awarded as the **best paper (Oral)**.

6. Presented a paper entitled "***Structrual and Magnetic properties of cubic Zirconia/Co composites synthesized by microwave route***" in "Chem-Amigos" - an inter collegiate meet held on 17th March, 2008 at Bishop Heber College on 17th march, 2008 and this paper was awarded as the **best poster**.

7. Presented a paper entitled "***Fe₃O₄ nanoparticles- a good candidate for future***" in National Conference on Nanomaterials on 12th March 2009 at Bishop Heber College, Trichy.Tamil Nadu, India.

8. Presented a paper entitled "***Synthesis, Characterization and Kinetics of Photocatalytic degradation of Fe₃O₄ nanoparticle***" in MATCON2010 (International conference on materials for new millennium) held at Cochin, Kerala during 11-13, January 2010.

9. Presented a paper entitled "***Bifunctional Reactivity and Catalytic Activity of Imidozirconocene Complex***" in MMDD workshop held at University of Hyderabad, Hyderabad during 2-7 August, 2010 and this paper was awarded as the **best poster**.

10. Presented a paper entitled "***Evidences for the Bifunctional reactivity and powerful catalytic ability of imidozirconocene complex from its Epoxide ring cleavage reactions - A DFT mechanistic view***" in TCS2010 held at IITK,Kanpur during 8-12, december 2010.

11. Presented a paper entitled "***Can vinyl substituted triazene based derivatives be better NLO candidates? - A DFT & TDDFT investigation***" in ATOMS2011 held at ICT, hyderabad during 2-5, November 2011 and this paper was awarded as the **best poster**.

12. Presented a paer entitled "***Role of Solvent on the Photoexcitation of Iron-tris-(2,2-bipyridine) Complex - Insights from Solvent Dynamics***" in Swiss Chemical Society Meeting held at EPFL, Laussane, Switzerland on September 6th, 2013.

13. Presented a paper entitled "***Hydrogenation Reactions for Biomass Conversion***" in NAM24 Meeting at Pittsburgh, PA, USA on 15th June 2015.

8. Publications & Books Authored:

27. L-arginine directed and ultrasonically aided growth of nanocrystalline hydroxyapatite particles with tunable morphology.

S. Saranya, S.J.S.Justin, **R. Vijay Solomon**, P.Wilson

Colloids and Surfaces A, **2018**, (*In Press*) [Impact Factor = 2.70]

26. A multispectroscopic and molecular docking investigation of the binding interaction between serum albumins and acid orange dye.

S. Naveenraj, **R. Vijay Solomon**, R.V. Mangalaraja, P. Venuvanalingam, A. M. Asiri, S. Anandan

Spectrochimica. Acta A **2018**, *192*, 34-40 [Impact Factor = 2.1]

25. Encapsulation of a hexaaza macrocyclic nickel(II) complex in zeolite Y: an experimental and theoretical investigation

S. Chandra Mohan, **R. Vijay Solomon**, P. Venuvanalingam and K. Jothivenkatachalam

New J. Chem., **2017**, (*Just Accepted*) [Impact Factor = 3.27]

24. A spectroscopic approach with theoretical studies to study the interaction of 9-Aminoacridine with certain phenols.

C. Manivannan, **R. Vijay Solomon**, P. Venuvanalingam, R. Renganathan

Z. Phys. Chem. **2017**, (*Just Accepted*) [Impact Factor = 1.38]

23. The role of p-linkers in tuning the optoelectronic properties of triphenylamine derivatives for solar cell applications – A DFT/TDDFT study.

M. Panneerselvam, A. Kathiravan, **R. Vijay Solomon***, *M.Jacob*

Phys.Chem.Chem. Phys., **2017**, *19*, 6153-6163 [Impact Factor = 4.49]

22. Inner-Shell Water Rearrangement Following Photoexcitation of Tris(2,2'-bipyridine)iron(II)

A. K. Das, **R. Vijay Solomon**, *F. Hofmann*, *M. Meuwly*

J. Phys. Chem. B, **2016**, *120*, 206-216 [Impact Factor = 3.30]

21. A DFT/TDDFT Mission to Probe Push-Pull Vinyl Coupled Thiophene Oligomers for Optoelectronic Applications

D. Gajalakshmi, **R. Vijay Solomon**, *V. Tamilmani*, *M. Boobalan*, *P. Venuvanalingam*

RSC Adv., **2015**, *5*, 50353-50364 [Impact Factor = 3.84]

20. Ultrasonic, spectrophotometric and theoretical studies of sigma and PI interactions of iodine with substituted benzene

A. B. Justin, *R. Kumar*, **R. Vijay Solomon**, *S. Mahesh*, *V. Kannappan*; *D. R. Singh*, *M.Jacob*

RSC Adv., **2015**, *5*, 44873-44885 [Impact Factor = 3.84]

19. Synthesis, DNA binding and docking studies of copper (II) complexes containing modified phenanthroline ligands

J. Lakshmipraba, *S.Arunachalam*, **R. Vijay Solomon**, *P.Venuvanalingam*

J. Coord. Chem., **2015**, 68, 1374-1386 [Impact Factor = 2.01]

18. Surfactant-Copper(II) schiff base complexes: Synthesis, structural investigation, DNA interaction, docking studies and cytotoxic activity.

J. Lakshmi Praba, S. Arunachalam, R. Vijay Solomon, P. Venuvanalingam, A. Riyasdeen R. Dhivya, M. A. Akbarsha

J. BioMol. Struct. Dyn., **2015**, 33, 877-891 [Impact Factor = 2.91]

17. The nature of hydrogen bonding in R₂(8) crystal motifs - A Computational Exploration

P. Deepa, R. Vijay Solomon, S. Angeline Vedha, P. Venuvanalingam, P. Kolandaivel

Mol. Phys., **2014**, 112, 3195-3205 [Impact Factor = 1.72]

16. Atomic partitioning of M-H₂ bonds in [NiFe] hydrogenase – a test case of concurrent binding.

S. Angeline Vedha, R. Vijay Solomon and P. Venuvanalingam

Phys. Chem. Chem. Phys., **2014**, 16, 10698-10707 [Impact Factor = 4.49]

15. A new turn in Codon-Anticodon selection through halogen bonds

R. Vijay Solomon, S. Angeline Vedha and P. Venuvanalingam

Phys. Chem. Chem. Phys., **2014**, 16, 7430-7440 [Impact Factor = 4.49]

14. Tuning the photophysical properties of 2-quinolinone based Donor-Acceptor molecules through N vs O alkylation: Insights from experimental and theoretical investigations.

G. Paramaguru, R. Vijay Solomon, S. Jagadeeswari, P. Venuvanalingam and R. Renganathan

Eur. J. Org. Chem., **2014**, 4, 753-766 [Impact Factor = 3.06]

13. A DFT/TDDFT modeling of Bithiophene azo chromophores for optoelectronic applications

R. Vijay Solomon, R. Jagadeesan, S. Angeline Vedha and P. Venuvanalingam

Dyes & Pigments. **2014**, 100, 261-268 [Impact Factor = 3.97]

12. Effect of electron withdrawing anchoring groups on the optoelectronic properties of pyrene sensitizers and their interaction with TiO₂: A combined experimental and theoretical approach

G. Paramaguru, R. Vijay Solomon, S. Jagadeeswari, P. Venuvanalingam and R. Renganathan

J. Photochem. Photobiol. A: Chemistry **2013** 272, 31-44 [Impact Factor = 2.50]

11. Interaction between toxic azo dye C. I. Acid Red 88 and Serum Albumins

S. Naveenraj, R. Vijay Solomon, P. Venuvanalingam, A. M. Asiri, and S. Anandan,

J. Lumines., **2013**, 143, 715-722 [Impact Factor = 2.72]

10. Conjugated polymer based on oligobenzo [c] thiophene with low-lying HOMO energy level as potential donor for bulk heterojunction solar cells

M. R. Raja, S. Anandan, R. Vijay Solomon, P. Venuvanalingam, S. S. K. Iyer and M. Ashokkumar

J. Photochem. Photobiol. A: Chemistry, **2013**, 262, 34-44 [Impact Factor = 2.50]

9. On the Nature of Hypercoordination in Dihalogenated Perhalocyclohexasilanes

S. Angeline Vedha, R. Vijay Solomon and P. Venuvanalingam

J. Phys. Chem. A., **2013**, *117*, 3529-3538 [Impact Factor = 2.70]

8. Studies on the inclusion behavior of 9-Aminoacridine into cyclodextrins: Spectroscopic and theoretical evidences C. Manivannan, **R. Vijay Solomon**, P. Venuvanalingam and R. Renganathan *Spectrochimica. Acta A* **2012**, *103*, 18-24 [Impact Factor = 2.35]

7. Synthesis of conjugated perylene diimide-based copolymer with 5, 5'-bis (4-aminophenyl)-2-2'-bifuryl moiety as an active material for organic photovoltaics
M. R. Raja, S. Anandan, **R. Vijay Solomon**, P. Venuvanalingam, S. S. K. Iyer and M. Ashok kumar *J. Photochem. Photobiol. A: Chemistry* **2012**, *247*, 52-62 [Impact Factor = 2.50]

6. Enhanced Photocatalytic degradation of azo dyes using nano Fe₃O₄ **R. Vijay Solomon**, I. Sharmila Lydia, J. Princy Merlin and P. Venuvanalingam *J. Iran. Chem. Soc.*, **2012**, *9*, 101-109 [Impact Factor = 1.41]

5. Evidence for the powerful catalytic ability of imidozirconocene complex from its epoxide ring cleavage reactions—A DFT mechanistic view
D. Senthilnathan, **R. Vijay Solomon** and P. Venuvanalingam. *J. Chem. Sci.*, **2012**, *124*, 167-176 [Impact Factor = 1.18]

4. Designing benzosiloles for better optoelectronic properties using DFT&TDDFT approaches
R. Vijay Solomon, A. Bella, S. Angeline Vedha and P. Venuvanalingam
Phys. Chem. Chem. Phys. **2012**, *14*, 14229-14237 [Impact Factor = 4.49]

3. Tuning Non linear optical and Optoelectronic Properties of Vinyl Coupled Triazene Chromophores – A Density Functional Theory and Time Dependent Density Functional Theory Investigation
R. Vijay Solomon, P. Veerapandian, S. Angeline Vedha and P. Venuvanalingam
J. Phys. Chem. A **2012**, *116*, 4667-4677 [Impact Factor = 2.70]

2. Spectroscopic studies on TiO₂ enhanced binding of Hypocrellin B with DNA
G. Paramaguru, **R. Vijay Solomon**, P. Venuvanalingam and R. Renganathan
J. Fluorescence **2011**, *2*, 1887-1895 [Impact Factor = 1.92]

1. Elucidating the Structures and Binding of Halide ions bound to Cucurbit[6]uril, Hemi-Cucurbit[6]uril and Bambus[6]uril using Density Functional Theory Calculations
S. Mahesh, **R. Vijay Solomon**, S.K. Ghosh and P. Venuvanalingam
RSC. Adv., **2011**, *1*, 1333-1341 [Impact Factor = 3.84]

9. Resource Person in Conferences/Workshops etc.

- Delivered talk on "non-covalent interactions in Biomolecules" at the International Conference on Chemistry of Biomolecules -Current

Trends and Future Perspectives (ICCBCTFP-2016) held at Holy Cross College, Tiruchirappalli during 27 - 28 JULY 2016

- Delivered talk on "Applications of Computational Chemistry" at the one day workshop on computational chemistry held at Bishop Heber College, Tiruchirappalli on 9th December 2016
- Delivered talks on " Theory of electronic structure calculations" and "Drug Designing Strategies" at the one day national level seminar on computational chemistry at Ethiraj College, Chennai on 2nd March 2017

10. Recognition as Research Supervisor for M.Phil. and Ph.D. : NIL

11. Other Distinctions :

- Successfully completed the **PG program in Cheminformatics** from ICIS, Nodia, Delhi in 2017
- Awarded with **Swiss Government Excellence Fellowship** for the year 2012-2013 by Government of Switzerland to work with Prof. M. Meuwly, **University of Basel**, Basel, Switzerland.
- Awarded with **Senior Research Fellowship** under **Maulana Azad National Fellowship** for the year 2011-2012 from **University Grants Commission (UGC), INDIA.**
- Awarded with **Prof. C. N. R .Rao Young Scientist Award** in Chemistry for year 2011 from **Bose Science Society**, Tamil Nadu, India.
- Awarded with **Junior Research Fellowship** under **Maulana Azad National Fellowship** for the year 2009-2011 from **University Grants Commission (UGC), INDIA.**
- Completed **Summer Research Project** during 2007-2008 from **Indian Institute Technology, Kanpur (IITK)** with Prof. S. Sundar Manoharan.
- Secured **best Paper Presentation award** (poster) for "can triazene be better NLO candidates? - A DFT/TDDFT investigation" in an international conference "**Applied Theory on Molecular Systems**" during 2-5 November 2011 at **Indian Institute of Chemical Technology, Hyderabad.**

- Secured **best Paper Presentation award** (poster) for “Bifunctional reactivity and catalytic activity of imidozirconocene complex: evidences from DFT study on its reaction with epoxides” in “**Molecular Modeling and Drug Design**” **workshop** during 2-7 august 2010 at **Hyderabad Central University**, Hyderabad.
- Secured **best paper presentation award** (oral) for “study on the effect of removal of Arsenic poisoning using prepared Fe₃O₄ nanoparticle via sonochemical route” in “**National Conference on Nano materials – Preparation , Characterization and Devices**” organized by PG Department of Physics, Bishop Heber College on 14th march, 2008.
- Secured **best Paper Presentation award** (poster) for “Structural and Magnetic properties of cubic Zirconia/Co composites synthesized by microwave route” in “**Chem-Amigos**” **an inter collegiate meet** held at Bishop Heber College on 17th march, 2008.
- Secured **100%** in **Mathematics** in the public State Board S.S.L.C Examination during March/April 2001.

Invited Talks in national/international conferences:

1. *Delivered a invited talk on "Molecular Modeling and Drug Designing" at Ethiraj College, Chennai on 2nd, March 2017.*
2. *Delivered a invited talk on "fundamentals of computational chemistry" at Bishop Heber College, Tiruchirappalli" on 9th, December 2016.*
3. *Delivered a invited talk on " Weak interactions in Biomolecules" in the international conference ICCBCTFP-2016 held at Holy Cross College, Tiruchirappalli" during 27-28, June 2016.*
4. *Delivered a invited talk on " Understanding the Nature of Molecules and Materials - A Computational Perspective" in the international conference on materials and biomaterials held at Bishop Heber College, Tiruchirappalli" during 10-11, January 2014.*

Reviewer for the following Journals

1. *Phys. Chem. Chem. Phys.* - RSC publications
2. *RSC Adv.* - RSC publications
3. *New J. Chem.* - RSC publications
4. *J. Inorg. Organomet. Poly. Mater.* - Springer
5. *J. Photochem. Photobiol. B* - Elsevier
6. *Spectrochimica Acta A* - Elsevier
7. *Chemical Physics* - Elsevier

8. J. Mol. Liquids - Elsevier

Extracurricular Activities:

1. Won *First prize* in *Quiz competition* in connection with “Chem-Amigos” – an inter collegiate meet held at Bishop Heber College in 2007.
2. Won *prizes* in *Essay Competitions* at Under Graduation, Post Graduation and PhD level.
3. Won *Medals* in *Christian Cultural Meet* at Bishop Heber College during March 2007.
4. Won *First prize* in *Elocution competition* (in English) on Ozone Day Celebration conducted by Environment Eco-Biotech, Bharathidasan University, Trichy during October 2009.
5. Won *prizes* in *Cultural meet* called “Muththamizh Vizha-2008” at Bishop Heber College.
6. Active Volunteer in the *National Service Scheme* at College level and Attended 10 day Camp at Paraikulam, Tirunelveli District from 24-01-04 to 02-02-04.
7. Volunteer in *Red Ribbon Club* at St. Xavier’s College, Palayamkottai.
8. Active Member of *Youth Red Cross* at College level and Acting Skit, Drama and other cultural programmes during college days.
9. Passed in *Typewriting Examination* for English and Tamil (Both Lower)
10. Finished *Certificate Course in French* in 2007.
11. Served as an *Editorial Board Member* (2009 to 2012) & *Active Author* in “*Tharisanasudar*”- a monthly Christian magazine by Union of Evangelical Students of India (UESI-TN).

RESEARCH EXPERIENCE

Post Doc. Associate, **Modelling the catalytic reactions on solid surfaces for conversion of biomass to value added chemicals** with
(Feb. 2014 - Feb.2016) **Prof. Dr. Andreas Heyden**,
University of South Carolina, SC, USA.

Post Doc., **“Solvent Dynamics on the Photoexcitation of Metal Complexes & Force Field Parameterization of Jahn-Teller distorted Metal complexes ”** with
(Nov. 2012 - Jan. 2014) **Prof. Dr. Markus Meuwly**
University of Basel, Basel, Switzerland

Doctoral Study
(Oct. 2008 - Oct. 2012)

Ph.D., Chemistry

“ Designing Molecules for optoelectronic applications
and probing halogen bonds in base pairs” with

Prof. Dr. P. Venuvanalingam,

Bharathidasan University, Tiruchirappalli-24, India

12. Recent Passport size photograph

