

Jerald Vijay Ramaclus

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RESEARCH SKILLS & SPECILIZATIONS

Terahertz materials, Terahertz Generation, nonlinear optical materials, organic chromophores, quantum chemical calculations, nucleation and crystal growth, crystal morphology engineering, nanocrystallization, materials characterization.

EDUCATION

PhD. , Physics, Loyola College, University of Madras , Chennai, India	2008-2012
M.Phil. , Physics, Loyola College, University of Madras , Chennai, India	2005-2006
M. Sc. , Physics, Loyola College, University of Madras , Chennai, India	2003-2005
B. Sc. , Physics, Loyola College, University of Madras , Chennai, India	2000-2003

EXPERIENCE

- **Assistant Professor**, Physics, Loyola College, Chennai 600034 **June 2015-April 2016**
- **Postdoctoral Researcher**, RAIG, University of Chile, Santiago, Chile. **May 2013-Feb 2015**
- **Assistant Professor**, Physics, Saveetha University, Chennai 602105 **Sept 2011-April 2013**
- **Lecturer**, Physics, Alpha College of Engineering, Chennai 602107 **June 2006-June 2008**

PROFESSIONAL ACTIVITIES

- **Reviewer**: Crystal Engineering Communication (RSC), Journal of Molecular Structure (Elsevier), Spectroscopy Letters and DAE-solid state physics symposium 2014.
- **Member**: Indian Laser Association

ACHIEVEMENTS

- **Outstanding reviewer** award- The Journal of Molecular Structure - June 2017

SHORT COURSES AND WORKSHOPS

- Short course on **ultrafast laser pulses: generation, amplification and characterization** at Raja Ramanna centre for advanced technology, Indore, Nov 29-30, 2010.
- One day workshop on **Atom Probe Tomography** at Indian Institute of technology, Chennai, Jan 9, 2012.
- Workshop on **high impact teaching skills** attested by **Dale Carnegie & associates, Inc.** and **Wipro**, May 14-15, 2012
- **Mission 10X** workshop at Saveetha Engineering College, Chennai, May 14-18, 2012
- **Scientific Softwares**: Gamess, Mercury, Crystal explorer, Chemdraw, WinXmorph, Origin lab.

PUBLICATIONS

- **ARTICLES IN JOURNALS**

1. Crystal structures of two stilbazole derivatives: bis{(E)-4-[4-(diethylamino)styryl]-1-methylpyridin-1-ium} tetraiodidocadmium(II) and (E)-4-[4-(diethylamino)styryl]-1-methylpyridin-1-ium 4-methoxybenzenesulfonate monohydrate, P. Antony, S. A. Inglebert, **Jerald V Ramaclus**, S. J. Sundaram and P. Sagayaraj, **Acta Crystallographica Section E**, 74 (2018) 1891-1894.
2. Synthesis, Growth and Characterization of a New Acentric 4-[4-(4-dimethylamino-phenyl) buta-1,3-dienyl]-1-methyl pyridinium p-chlorobenzenesulfonate dihydrate crystal for nonlinear optical applications, S. John Sundaram, **Jerald V Ramaclus**, Priya Antony, M. Jaccob and P. Sagayaraj, **New Journal of Chemistry**, 42 (2018) 18865-18872 (IF: 3.277)
3. Structural, morphological, optical and magnetic properties of $\text{Ag}_{3(2+x)}\text{In}_x\text{Nb}_{4-x}\text{O}_{11+\delta}$ ($0.25 \leq x \leq 1.0$) nanoparticles synthesized by sol-gel method, S. Ramesh, **Jerald V. Ramaclus**, B.B. Das, E. Mosquera, **Materials Research Bulletin**, 105 (2018) 121-125. (IF: 2.873)
4. Sol-gel synthesis, structural, optical and magnetic characterization of $\text{Ag}_{3(2+x)}\text{Pr}_x\text{Nb}_{4-x}\text{O}_{11+d}$ ($0.0 \leq x \leq 1.0$) nanoparticles, S. Ramesh, **Jerald V. Ramaclus**, E. Mosquera and B. B. Das, **RSC Advances**, 6 (2016) 6336-6341 (IF: 3.108)
5. Influence of Oleic Acid on the Nucleation and Growth of 4-N, N-dimethylamino-4-N-methyl-stilbazoliumtosylate (DAST) crystals, Tina Thomas, **Jerald V. Ramaclus**, Fausto P. Mena, P. Sagayaraj, Edgar Mosquera, and Ernest A. Michael, **Crystal Engineering Communication**, 17 (2015) 1989-1996. (IF: 3.474)
6. Growth, linear and nonlinear optical properties of a DSSS crystal, **Jerald V. Ramaclus**, T. Thomas, S. Ramesh, P. Sagayaraj and E.A. Michael, **Crystal Engineering Communication**, 16 (2014) 6889-6895. (IF: 3.474)

7. Electronic structure study on 2D hydrogenated Icosagens nitride nanosheets, S. Ramesh, S. Marutheswaran, **Jerald V. Ramaclus**, D. Chapa Paul, **Superlattices and Microstructures**, 76 (2014) 213–220. (IF: 2.009)
8. Investigation on one-pot hydrothermal synthesis, structural and optical properties of ZnS quantum dots, J. Nirmala Jothi, Amit G. Joshi, **R. Jerald Vijay**, A. Muthuvinayagam and P. Sagayaraj, **Materials Chemistry and Physics**, 138 (2013) 186-191. (IF: 2.110)
9. Investigation on the growth of DAST crystals of large surface area for THz applications, **R. Jerald Vijay**, N. Melikechi, Tina Thomas, R. Gunaseelan, M. Antony Arockiaraj and P. Sagayaraj, **Materials Chemistry and Physics**, 132 (2012) 610-617. (IF: 2.210)
10. Growth, structural, optical and thermal properties of potential THz material: N, N-dimethylamino-N'-methylstilbazolium 4-styrenesulphonate, **R. Jerald Vijay**, N. Melikechi, Tina Thomas, R. Gunaseelan, M. Antony Arockiaraj and P. Sagayaraj, **Journal of Crystal Growth** 338 (2012) 170-176. (IF: 1.742)
11. Growth, linear and nonlinear optical and, laser damage threshold studies of organometallic crystal of MnHg(SCN)₄, T. Rajesh Kumar, **R. Jerald Vijay**, R. Jeyasekaran, **S. Selvakumar**, M. Antony Arockiaraj and P. Sagayaraj, **Optical Materials**, 33 (2011) 1654-1660. (IF: 2.320)
12. Synthesis and characterization of on 2.8e dimensional semiconducting nanorods and nanobelts, G. Ramalingam, J. Madhavan, P. Sagayaraj, S. Selvakumar, R. Gunaseelan and **R. Jerald Vijay**, **Transactions of The Indian Institute of Metals**, 64 (2011) 217-220. (IF: 0.91)
13. Investigation on rapid growth of 4-N, N-dimethylamino-4-N- methylstilbazolium p-toluenesulphonate (DAST) crystals by SNM technique, **R. Jerald Vijay**, N. Melikechi, T. Rajesh Kumar, Joe G.M. Jesudurai and P. Sagayaraj, **Journal of Crystal Growth**, 312 (2010) 420-425. (IF: 1.742)
14. Structural and electrical properties of organic Stilbazolium single crystal of DSCHS, S. John Sundram, A. Antony Raj, **Jerald V. Ramaclus** and P. Sagayaraj, **AIP Conf. Proc.**, 1731, 100004 (2016); doi: 10.1063/1.4948010
15. Growth, spectral, optical and thermal studies of an organic single crystal 4-N, N'-dimethylamino-N-methylstilbazolium 4-aminotoluene-3-sulfonate, Antony Raj, R. Gunaseelan, **R. Jerald Vijay** and P. Sagayaraj, **International Journal of ChemTech Research**, 6 (2014) 1538-1540.
16. Growth, structural and thermal analysis of DSSS single crystals, M. Antony Arockiaraj, Tina Thomas, **R. Jerald Vijay**, and P. Sagayaraj, **AIP Conf. Proc.** 1447, 1293 (2012); doi: 10.1063/1.4710486
17. Investigation on the growth, structural and optical properties of DASC crystal: A potential THz emitter, R. Gunaseelan, S. Selvakumar, Tina Thomas, **R. Jerald Vijay**, and P. Sagayaraj, **AIP Conf. Proc.** 1447, 1259 (2012); doi: 10.1063/1.4710469
18. Growth and Characterization of Mixed Crystals of N, N-dimethylamino-N'-methylstilbazolium p-toluenesulphonate and p-naphthalenesulfonate, **R. Jerald Vijay**,

- Tina Thomas, A. Ramanand and P. Sagayaraj, **AIP Conf. Proc.**, 1349, part A, 149-151, 2011. doi: 10.1063/1.3605781
19. Investigation on Growth and Surface Analysis of DAST single Crystals, Tina Thomas, **R. Jerald Vijay**, R. Gunaseelan and P. Sagayaraj, **AIP Conf. Proc.**, 1349, part A, 151-153, 2011. doi: 10.1063/1.3605782
 20. Growth, Spectral and Thermal studies of Organic NLO Crystals of DSAS by SNM Technique, R. Gunseelan, **R. Jerald Vijay**, G. Ramalingam and P. Sagayaraj, **AIP Conf. Proc.**, 1349, part A, 206-208, 2011. doi: 10.1063/1.3605808
 21. Synthesis of CdSe@ZnS Quantum Dots via Non-TOPO Hydrothermal Techniques, G. Ramalingam, J. Madhavan, **R. Jerald Vijay**, M. Vimalan and P. Sagayaraj, **AIP Conf. Proc.**, 1349, part A, 379-381, 2011. doi: 10.1063/1.3605893
 22. Investigation on the Sol-Gel Synthesis, Structural, Optical and Gas sensing Properties of Zinc Oxide Nanoparticles, A. Muthuvinayagam, Boben Thomas, P. Dennis Christy, **R. Jerald Vijay**, T. Manovah David, and P. Sagayaraj, **Archives of Applied Science Research**, 3 (2011) 256-264

• ARTICLES IN CONFERENCE PROCEEDINGS

1. A comparative study on morphological and optical properties of pure and oleic acid added organic stilbazolium nanocrystal of DAST embedded in a PVA matrix for NLO applications, S. Dominique, Priya Antony, S. John Sundaram, R. Mahesh, **Jerald V Ramaclus**, N. Lawrence, P. Sagayaraj, *International Conference on Advanced Materials*, St. Joseph's College, Trichy, December 14 – 15, 2017
2. Structural and electrical properties of organic Stilbazolium single crystal of DSCHS, S. John Sundram, A. Antony Raj, **Jerald V. Ramaclus** and P. Sagayaraj, *60th DAE Solid State Physics Symposium*, Amity University, Noida, December 21 – 25, 2015.
3. Structural, electrical and thermal properties of organic Stilbazolium single crystal of DSCHS, S. John Sundram, A. Antony Raj, **Jerald V. Ramaclus** and P. Sagayaraj, *24th DAE-BRNS National Laser Symposium*, Raja Ramanna Centre for Advanced Technology, Indore, December 2-5, 2015.
4. Growth, spectral, optical and thermal studies of an organic single crystal 4-N, N'-dimethylamino-N-methylstilbazolium 4-aminotoluene-3-sulfonate, Antony Raj, R. Gunaseelan, **R. Jerald Vijay** and P. Sagayaraj, *International Conference on Materials and Characterization Techniques*, Vellore Institute of Technology, Vellore, March 10-12, 2014.
5. Synthesis, growth and characterization of Trans - 4'-(Dimethylamino) – N – Phenyl– 4 – Stilbazolium Hexa Fluorophosphate (DAPSH) crystals, J. Arul Martin Mani, **R. Jerald Vijay**, P. Sagayaraj and V. Joseph, *National conference on Advanced materials and applications*, National Institute of Technology, Tiruchirapalli, April 4-5, 2013.

6. Investigation on the effect of oleic acid on the growth of DAST nanocrystals in polyvinyl alcohol (PVA) matrix, Tina Thomas, **R. Jerald Vijay**, R. Gunaseelan and P. Sagayaraj, *20th–DAE-BRNS-National Laser Symposium*, Anna University, Chennai, Jan. 9-12, 2012.
7. Investigation on crystal growth and characterization of mixed crystal of DAST and DSNS, Tina Thomas, J. Jayashainy, **R. Jerald Vijay**, and P. Sagayaraj, *International conference on Advance Materials*, Loyola College, Chennai, India, on Jan 5-7, 2012.
8. Growth, structural and thermal analysis of DSSS single crystals, M. Antony Arockiaraj, Tina Thomas, **R. Jerald Vijay**, and P. Sagayaraj, *56th DAE Solid State Physics Symposium*, SRM University, Chennai, December 23 – 27, 2011.
9. Investigation on the growth, structural and optical properties of DASC crystal: A potential THz emitter, R. Gunaseelan, S. Selvakumar, Tina Thomas, **R. Jerald Vijay**, and P. Sagayaraj, *56th DAE Solid State Physics Symposium*, SRM University, Chennai, December 23 – 27, 2011.
10. Thz material of n, n-dimethylamino-n'-methylstilbazolium 4-tyrenesulphonate (DSSS) single crystal, M. Antony Arockiaraj **R. Jerald Vijay**, R. Gunaseelan and P. Sagayaraj, *International conference on Advanced Materials*, PSG College of Technology, Coimbatore, India, December 12-16, 2011.
11. Growth, spectral and photoconductivity study of 4-N, N-dimethylamino-4'-N'- methylstilbazolium p-aminobenzenesulfonate (DSAS) single crystal, R. Gunaseelan, T. Arul Raja, S. Selvakumar, **R. Jerald Vijay** and P. Sagayaraj, *15th National Seminar on Crystal Growth*, PSN College of Engineering, Thirunelveli, Tamil Nadu, March, 24-26, 2011.
12. Third order nonlinear optical properties of 4-N, N-dimethylamino-4'-N'-methylstilbazolium iodide (DMSI) single crystal, R. Gunaseelan, A. Antony Raj, G. Ramalingam, **R. Jerald Vijay** and P. Sagayaraj, *National Seminar on Recent trends in nonlinear optical materials and characterization*, Post Graduate Dept. of. Physics, Sacred Heart College, Chalakudy, Kerala, March 10-11, 2011.
13. Growth of bulk size DAST crystal by slope nucleation technique, M. Antony Arockiaraj, **R. Jerald Vijay**, Tina Thomas J. Jayashainy and P. Sagayaraj, *National Seminar on Recent trends in nonlinear optical materials and characterization*, Post Graduate Dept. of. Physics, Sacred Heart College, Chalakudy, Kerala, March 10-11, 2011.
14. Growth and Characterization of Mixed Crystals of N, N-dimethylamino-N'-methylstilbazolium p-toluenesulphonate and p-naphthalenesulfonate, **R. Jerald Vijay**, Tina Thomas, A. Ramanand and P. Sagayaraj, *55th DAE Solid State Physics Symposium*, Manipal University, Manipal, December 26 – 30, 2010.
15. Investigation on Growth and Surface Analysis of DAST single Crystals, Tina Thomas, **R. Jerald Vijay**, R. Gunaseelan and P. Sagayaraj, *55th DAE Solid State Physics Symposium*, Manipal University, Manipal, December 26 – 30, 2010.
16. Growth, Spectral and Thermal studies of Organic NLO Crystals of DSAS by SNM Technique, R. Gunseelan, **R. Jerald Vijay**, G. Ramalingam and P. Sagayaraj, *55th DAE Solid State Physics Symposium*, Manipal University, Manipal, December 26 – 30, 2010.

17. Synthesis of CdSe@ZnS Quantum Dots via Non-TOPO Hydrothermal Techniques, G. Ramalingam, J. Madhavan, **R. Jerald Vijay**, M. Vimalan, P. Sagayaraj, *55th DAE Solid State Physics Symposium*, Manipal University, Manipal, December 26–30, 2010.
18. Synthesis and characterization of one dimensional semiconducting nanorods and nanobelts, G. Ramalingam, J. Madhavan, P. Sagayaraj, S. Selva kumar, R. Gunaseelan, **R. Jerald Vijay**, *International Symposium for Research Scholars on Metallurgy, Materials Science and Engineering*, Indian Institute of Technology, Madras, **December 20 – 22, 2010**.
19. Investigation on DAST nanocrystals embedded in polyvinyl (PVA) matrix, **R. Jerald Vijay**, G. Ramalingam, Tina Thomas, A. Ramanand and P. Sagayaraj, *19th DAE-BRNS National Laser Symposium*, Raja Ramanna Centre for Advanced Technology, Indore, December 1-4, 2010.
20. A comparative study on the structural and optical properties of hydrated and non-hydrated N, N-dimethylamino-N'-methylstilbazolium p-toluenesulphonate (DAST) crystals, Tina Thomas, **R. Jerald Vijay** and P. Sagayaraj, *19th DAE-BRNS National Laser Symposium*, Raja Ramanna Centre for Advanced Technology, Indore, December 1-4, 2010.
21. Synthesis, Growth and characterization of nonlinear optical 4-N, N-dimethylamino-4'-N'-methyl- stilbazolium p-aminobenzenesulfonate (DSAS) single crystal, R. Gunaseelan, **R. Jerald Vijay**, M. Antony Arockiaraj and P. Sagayaraj, *19th DAE-BRNS National Laser Symposium*, Raja Ramanna Centre for Advanced Technology, Indore, December 1-4, 2010.
22. Structural and optical characterization of solution grown MMTc nonlinear optical crystals, T. Rajesh Kumar, P. Dennis Christy, R. Jeyasakeran, **R. Jerald Vijay**, R. Gunaseelan and P. Sagayaraj, *13th National Seminar on Crystal Growth*, SSN college of Engineering, Tamilnadu, January, 27-29, 2009.
23. Investigation of bulk size crystal growth by slope nucleation technique, **R. Jerald Vijay**, R. Gunaseelan, R. Velu and P. Sagayaraj, *National Symposium on Growth of Detector-Grade Single Crystals NSGDSC-2009*, Bhabha Atomic Research Centre, Mumbai, November 19-21, 2009.