<table>
<tr><td>Name of the Teaching Staff</td><td colspan="3">Dr. V. MADHU</td><td rowspan="5">  </td></tr>
<tr><td>Designation</td><td colspan="3">Assistant Professor (AGP:8000)</td></tr>
<tr><td>Department / School</td><td colspan="3">CHEMISTRY / SSAMM</td></tr>
<tr><td>Date of Joining the Institution</td><td colspan="3">June'14, 2012</td></tr>
<tr><td rowspan="2">Qualification with Class / Grade</td><td>UG</td><td>PG</td><td>Ph.D.</td></tr>
<tr><td>First Class</td><td>First Class</td><td>NA</td></tr>
<tr><td>Area of Specialization</td><td colspan="4">Inorganic Chemistry</td></tr>
<tr><td>Research Interests</td><td colspan="4">- Optoelectronic materials
- Catalysis
- Bio-inorganic Chemistry
- Electron Transfer studies
- Supramolecular Chemistry
- Coordination Chemistry</td></tr>
<tr><td rowspan="2">Subjects Teaching</td><td colspan="2">Under Graduate</td><td colspan="2">Post Graduate</td></tr>
<tr><td colspan="2">Applied Chemistry
Engineering Chemistry
Applied Chemistry-Laboratory
Instrumental Techniques in Chemistry</td><td colspan="2">Analytical Chemistry
Inorganic Chemistry
Main group Chemistry
Molecular spectroscopy
Physical Chemistry- Laboratory</td></tr>
<tr><td rowspan="2">Total Experience in Years</td><td>Teaching</td><td>Industry</td><td colspan="2">Research</td></tr>
<tr><td>8 Years</td><td>6 Months</td><td colspan="2">16 Years</td></tr>
<tr><td>Papers Published</td><td>National</td><td>1</td><td>International</td><td>24</td></tr>
<tr><td>Papers Presented in Conference</td><td>National</td><td>14</td><td>International</td><td>5</td></tr>
<tr><td>Conferences / Symposiums / Seminars / Workshops Participated</td><td>National</td><td>20</td><td>International</td><td>5</td></tr>
<tr><td>FDP / STTP / MDP / Summer / Winter School attended</td><td colspan="4">1. Faculty Induction Programme held at Karunya University, Coimbatore during June 14 – 20, 2012.
2. Faculty Pedagogy Programme held at Karunya University, Coimbatore during June 22 – 28, 2012
3. Five day Mission 10X Faculty Empowerment Workshop” organized by Wipro Technologies on “High Impact teaching skills”
4. Two days Mission10X Advanced Workshop organized by Wipro Technologies
5. Short Term Course on “Current Scenario in Nano & Functional Materials (Nano-FM 2017)” which held at Department of Chemical Engineering, Coimbatore Institute of Technology, Coimbatore, Tamil Nadu, India during March 1-7, 2017.</td></tr>
<tr><td rowspan="2">M.Phil. / Ph.D. Guide ship</td><td colspan="2">Field</td><td colspan="2">University</td></tr>
<tr><td colspan="2">Inorganic Chemistry</td><td colspan="2">Karunya University
Periyar University</td></tr>
<tr><td>Ph.D. Projects Guided</td><td colspan="2">Ph.D.s 1</td><td>Project at Master’s Level</td><td>15</td></tr>
<tr><td>Professional Memberships</td><td colspan="4">• Annual member in American Chemical Society Since 2009
• Annual member in Israel Chemical Society Since 2009
• Life member in National Environmental Science Academy</td></tr>
</table>

	Since 2010 • Life member in Materials research society of India Since 2016 • Life member in Luminescence Society of India Since 2016 • Life member in Chemical Research Society of India Since 2016
Consultancy Activities	Structural Analysis-NMR, Mass, IR, UV-Vis-NIR and Fluorescence spectral analysis, Single crystal X-ray structure analysis
Awards & Honours	• IUCr Bursary Award-2017 • Achiever Award 2017 by Karunya university • UGC research award 2014-16 • Achiever Award 2013 by Karunya university • DST Fast track for Young Scientist • Best Poster Award-International Conference On Biological Inorganic Chemistry-2013 • Postdoctoral Research Fellowship, Weizmann Institute of Science, Israel (2007). • Senior Research Fellowship (SRF) in Chemistry, Council of Scientific and Industrial Research (CSIR), Government of India, (2005). • Junior Research Fellowship (JRF) Chemistry, Council of Scientific and Industrial Research (CSIR), Government of India, (2003). • Qualified Joint CSIR-UGC-JRF-NET conducted by Council of Scientific and Industrial Research (CSIR), Government of India, (2003). • Graduate Aptitude Test in Engineering (GATE 2002), Government of India. • Graduate Aptitude Test in Engineering (GATE 2001), Government of India.
Grants Fetched	1. **Project Title:** *"Extending π-Conjugation of Metal Bis-dithiolene with Organic Backbones: NIR Absorbing Hybrid Materials for Optoelectronic Applications"* **(2017-2020);** Funding Agency: DST-SERB, Govt. of India, New Delhi **Rs. 38, 28, 760/-** (ongoing) 2. **Project Title:** *Investigation of new bimetallic catalysts for O2 and CO2 activation with enchanting catalytic properties: Green Chemistry Approach* (**2012-2015**); Funding Agency: DST-SERB, Govt. of India, New Delhi **Rs. 25,30,000** (completed) 3. **Project Title:** *Design of Binuclear haem and Non-haem Based Transition Metal Catalysts: Synthesis, Characterization and Oxidation Catalysis through Dioxygen Activation (***2014-16)***;* Funding Agency: UGC, Govt. of India, New Delhi (UGC research award) **Rs. 17,745,19** (completed)
Interaction with Professional Institutions	Weizmann Institute of Science, Israel Temple University, USA Indian Institute of Science, University of Hyderabad, National Chemical Laboratory-Pune IIT, IISER
Educational Details	B.Sc. – Govt. Arts College, Krishnagiri (University of Madras) M.Sc. – School of Chemistry, University of Madras, Guindy Campus, Chennai Ph.D. - School of Chemistry, University of Hyderabad, Hyderabad

Experience	2007 – 2010	**Postdoctoral Research Fellow** **(**With Prof. Ronny Neumann) Department of Organic Chemistry, Weizmann Institute of Science, 76100 Rehovot, Israel.
	2010 –2012	**Assistant Professor** Department of Chemistry, Jayam College of Engineering and Technology, Nallanur, Dharmapuri-636 813 Tamil Nadu, India
	2012 – Present date	**Assistant Professor** Department of Chemistry, Karunya Institute of Technology and Sciences (Deemed to be University), Coimbatore-641114
Contact Details	Room No. SHF016 Department of Chemistry School of Science, Arts, Media and Management Karunya Institute of Technology and Sciences (Deemed to be University), Coimbatore, Tamilnadu India - 641 114 Phone No: 0422-2614483-Extn:4483 E-mail: madhu@karunya.edu vmadhuu1@gmail.com	

Papers Published

1. J. Pitchaimania, N. Gunasekaranb, S. P. Anthonyc, D. Moon and **V. Madhu***, Hydrogenation of nitroaromatics to anilines catalyzed by air stable arene ruthenium(II)-NNN pincer complexes, *Appl. Organomet. Chem*., **2018** (accepted) (IF:3.581)
2. S. P. Midya, J. Rana, J. Pitchaimani, A. Nandakumar, **V. Madhu*** and E. Balaraman, Ni-catalyzed α-alkylation of unactivated amides and esters with alcohols via hydrogen auto-transfer strategy, *ChemSusChem.*, **2018** (DOI: 10.1002/cssc.201801443) (IF:7.411)
3. S. P. Midya, J. Pitchaimani, V. G. Landge, **V. Madhu*** and E. Balaraman, Direct access to N-alkylated amines and imines via acceptorless dehydrogenative coupling catalyzed by a cobalt(II)-NNN pincer complex, *Catal. Sci. Technol.*, **2018**, ***8***, 3469-3473 (IF: 5.365).
4. S. Sowmiyha, V. V. Kumar, J. Pitchaimani, **V. Madhu***, R. Thiagarajan, N. Sai Subramnaian, S. P. Anthony, Self-assembly of water soluble perylene tetracarboxylic acid with metal cations: Selective fluorescence sensing of Cu^{2+} and Pb^{2+} ions in paper strips, zebrafish and yeast, *J. of Luminescence*, **2018**, 203,42-49 (IF: 2.73).
5. V. G. Landge, J. Pitchaimani, S. P. Midya, M. Subaramanian, **V. Madhu*** and E. Balaraman, Phosphine-free cobalt pincer complex catalyzed Z-selective semi-hydrogenation of unbiased alkynes, ***Catal. Sci. Technol.***, **2018**, ***8***, 428-433 (IF: 5.365).
6. A. M Khenkin, V**. Madhu**, L. JW Shimon, M. A Cranswick, J. EMN Klein, L. Que, R. Neumann, Hydrogen-Atom Transfer Oxidation with H_2O_2 Catalyzed by $[Fe^{II}$ (1, 2-bis (2, 2′-bipyridyl-6-yl) ethane $(H_2O)_2]^{2+}$: Likely Involvement of a (μ-Hydroxo)(μ-1, 2-peroxo) diiron (III) Intermediate, *Israel J. Chem.*, **2017,** 57, 990–998 (IF: 2.607).
7. J. Pitchaimani, A. Kundu, S. Karthick, S. P. Anthony, D. Moon and **V. Madhu**, A Crab Claw Shaped Molecular Receptor for Selective Recognition of Picric Acid: Supramolecular Self-Assembly Mediated Aggregation Induced Emission and Colorimetric Change, ***CrystEngComm,*** 2017,**19**, 3557-3561 (IF: 3.304)
8. I. K. Naik, R. Sarkar, **V. Madhu**, R. Bolligarla, R. Kishore and S. K. Das, An Organic Receptor Isolated in an Unusual Intermediate Conformation: Computation, Crystallography and Hirshfeld Surface Analysis, *J. Phys. Chem. A*, **2017**, *121*, 3274–3286 (IF: 2.83)
9. P. S. Hariharan, J. Pitchaimani, **V. Madhu*,** S. P. Anthony, A halochromic stimuli-responsive reversible fluorescence switching 3, 4, 9, 10-perylene tetracarboxylic acid dye for fabricating rewritable platform, *Optical Materials*, **2017**, 53–57 (IF: 2.02)

10. A. Kundu, J. Pitchaimani, **V. Madhu*,** P. Sakthivel, R. Ganesamoorthy and S. P. Anthony, Bay functionalized Perylenediimide with pyridine positional isomers: NIR absorption and selective colorimetric/fluorescent sensing of Fe^{3+} and Al^{3+} ions, *Journal of Fluorescence*, **2017**, *27*, 491–500 (IF: 1.66).
11. J. Pitchaimani, M. R. Charan Raja, S. Sujatha, S. K. Mahapatra, D. Moon, S. P. Anthony and **V. Madhu***, Synthesis of Arene Ruthenium (II) Complexes with Chalcone, Aminoantipyrine and Aminopyrimidine Based Ligands and Preliminary Evaluation of Anti-leukemia Activity, *RSC Advances* **2016**, 6, 90982–9099 (IF:2.93).
12. **V. Madhu,** R. Bolligarla, I. K. Naik, Raju Mekala and S. K. Das, A {Cu4I4} Cluster Supported on a Metal-dithiolate Complex Anion Causes its Conformational Change Leading to a Doubly-bridged Curved Coordination Polymer and its Reactivity, *Eur. J. Inorg. Chem.* **2016**, 4257–4264 (IF: 2.44).
13. P. S. Hariharan, J. Pitchaimani, **V. Madhu***, S. Philip Anthony, Perylenediimide Based Fluorescent Dyes for Selective Sensing of Nitroaromatic Compounds: Selective Sensing in Aqueous Medium Across Wide pH Range, *Journal of Fluorescence*, **2016**, *26*, 395-401 (IF: 1.66).
14. **V. Madhu,** S. Supriya, K. Ravada and S. K. Das, Mechanical motion in the solid state and molecular recognition: reversible cis-trans transformation of an organic receptor in a solid-liquid crystalline state reaction triggered by anion exchange, ***CrystEngComm*, 2015**, *17*, 3219–3223 (IF: 3.304).
15. **V. Madhu** and S. K. Das, Diverse Supramolecular Architectures Having Well-Defined Void Spaces Formed from a Pseudorotaxane Cation: Influential Role of Metal Dithiolate Coordination Complex Anions, *Cryst. Growth Des.* **2014**, *14*, 2343−2356 (IF:3.97).
16. **V. Madhu**, Y. Diskin-Posner, R. Neumann, Copper(I) Complexes of Bipyridine and Terpyridine with Fluorous Tails and theFormation of Crystalline Materials with Fluorous Layers, *Eur. J. Inorg. Chem.* **2011**, 1792–1796 (IF:2.44).
17. K. Livanov, **V. Madhu,** E. Balaraman, L. J. W. Shimon, Y. Diskin-Posner, R. Neumann, Photocatalytic Splitting of CS_2 to S_8 and a Carbon_Sulfur Polymer Catalyzed by a Bimetallic Ruthenium(II) Compound with a Tertiary Amine Binding Site: Toward Photocatalytic Splitting of CO_2? *Inorg*. *Chem*. **2011**, *50*, 11273-11275 (IF: 4.7).
18. **V. Madhu** and S. K. Das, Neutral coordination polymers based on a metal–mono(dithiolene) complex: synthesis, crystal structure and supramolecular chemistry of [Zn(dmit)(4,4′-bpy)]*n*, [Zn(dmit)(4,4′-bpe)]*n* and [Zn(dmit)(bix)]*n* (4,4′-bpy = 4,4′-bipyridine, 4,4′-bpe = *trans*-1,2-bis(4-pyridyl)ethene,bix = 1,4-bis(imidazole-1-ylmethyl)-benzene, *J. Chem. Soc. Dalton Trans.*, **2011,** *40*, 12901-12908 (IF: 4.09).
19. **V. Madhu**, E. Balaraman, L. J. W. Shimon, Y. Diskin-Posner, G. Leitus, and R. Neumann, Structural Diversity in Manganese, Iron and Cobalt Complexes of the Ditopic 1,2-Bis(2,2'-bipyridyl-6-yl)ethyne Ligand and Observation of Epoxidation and Catalase Activity of Manganese Compounds, *J. Chem. Soc. Dalton Trans.*, **2010,** *39*, 7266-7275 (IF:4.09).
20. **V. Madhu** and S. K. Das, New Series of Asymmetrically Substituted Bis(1,2-dithiolato)-Nickel(III) Complexes Exhibiting Near IR Absorption and Structural Diversity, *Inorg*. *Chem*. **2008**, *47*, 5055-5070 (IF: 4.7).
21. **V. Madhu** and S. K. Das, A New Approach to Functionalize an Organic Compound through the Influence of Metal Bis(dithiolene) Complexes Leading to Ion-Pair Compounds Exhibiting Strong Emission at Room Temperature in the Visible Region, *Inorg. Chem*. **2006**, *45*, 10037–10039 (IF: 4.7).
22. **V. Madhu** and S. K. Das, N–H···S Hydrogen Bonds in a New Family of Ion-Pair Complexes Between Cationic Nickel Tetraazabicyclononane and Anionic Metal Dithiolates: Synthesis, Characterization and Properties of $[Ni(C_9H_{22}N_6)][M(mnt)_2]$ (MII = Cu, Ni, Pd), *Eur. J. Inorg. Chem.* **2006**, 1505–1514 (IF:2.44).
23. **V. Madhu** and S. K. Das, One Pot Synthesis of a Mn(III)–Cu(II)–Mn(III) Trinuclear Heterometallic Compound Formed by Mn···S–Cu–S···Mn Supramolecular Interactions: Crystal Structure of $[Mn^{III}(salph)(H_2O)\}_2\{Cu^{II}(mnt)_2\}]\cdot 4DMF$, *J. Chem. Sci.*, **2006**, *118*, 611–617 (IF:1.23).
24. **V. Madhu** and S. K. Das, Supramolecular p–p Assembly of a Neutral [Cu(salen)] Complex via the Templating Effect of an Ionic Inorganic Complex $Na_2[Cu(mnt)_2]$ Forming a

Framework type Material having Well-Defined Channels, *Inorg. Chem. Commun*., **2005**, *8*, 1097–1100 (IF: 1.8).

25. **V. Madhu** and S. K. Das, Near-IR Absorption due to Supramolecular Electronic Interaction in an Extended 3D Hydrogen-Bonding Network Material: Synthesis, Crystal Structure and Properties of [4,4'-H_2bpy][Cu(mnt)$_2$], *Polyhedron*, **2004**, *23*, 1235–1242 (IF:2.10).

Papers Presented in Conference

List of Conferences / Symposiums Participated and Presented:

1. J. Pitchaimani, S. P. Anthony, and **V. Madhu** *Molecular Recognition to Self-Assembly Mediated by Supramolecular Interactons,* Poster presentation at the 24th Congress and General Assembly of the International Union of Crystallography (IUCr 2017), which held at Hyderabad International Convention Centre, Hyderabad, India.duirng 21-28 August **2017**.
2. Pitchaimani, J.; Premnath, D.; **V. Madhu**, *Mono and Binuclear Ruthenium Complexes of Pyrimidine Based Ligands: Synthesis, Characterization and Their Applications*. Poster presentation at 10th Mid-year CRSI Symposium in Chemistry **(CRSI Mid-2015)** which held at NIT Trichy during 23 to 25 July **2015**.
3. Pitchaimani, J.; Charan Raja, M. R.; Sujatha, S.; Mahapatra, S. K.; Moon, D.; Anthony, S. P.; **V. Madhu**, *Anticancer Activity of Arene-Ruthenium(II) Complexes with Chalcone, Aminoantipyrine and Amino pyrimidine Based Ligands*. Poster presentation at International Conference on Materials for Sustainable Future 2016 **(ICMSF 2016)**, which held at SASTRA University, Tanjavur during 14th – 15th July **2016**
4. Pitchaimani, J.; Moon, D.; Anthony, S. P.; Madhu, V. *Bis(imino)pyridine Core Based Manganese(II), Iron(II) and Copper(I) Complexes: Structural Diversity and Their Catalytic Application*. Poster presentation at RSC symposium on Inorganic Chemical Biology, Organized by the School of Chemistry, Madurai Kamaraj University, Madurai, during March 17-18, **2017.**
5. **V. Madhu,** Participated in the National symposium on "*Invention and Innovation for Sustainable development*;" Organized by Pre-Engineering Programme, School of Science and Humanities Karunya University on 21st March **2014**.
6. **V. Madhu,** Participated in National Conference on "Innovationas In Chemistry-Health and Energy (i-Chem-He **2014**) Organized by department of Chemistry, Karunya University.
7. **V. Madhu** and S. K. Das, *Coordination Polymers Based on a Metal(dithiolene) Complexes: Syntheses, Structures, and Properties*, Poster presentation at the International conference on Emerging Trends in Chemical Sciences (IETC-2013), Organized by Chemistry Division, School of Advanced Sciences, VIT, Vellore.,5-7, December **2013**
8. **V. Madhu,** Participated in the workshop on "Nuclear Chemistry and Radioisotope Detection Techniques, Organized by Department of Chemistry and Department of Nanotechnology, Karunya University on 23-24 August **2013**
9. **V. Madhu,** *Synthesis, Characterization and Structural diversity of Manganese Complexes of Ditopic 1,2-bis(2,2'-bipyridyl-6-yl)ethyne Ligand: Epoxidation and Catalase Activity Studies.* Poster presentation at the "*International Conference on Biological Inorganic Chemistry* (ICBIC-*2013*), which was held in Periyar University, Salem, 20-22 February ***2013***.
10. **V. Madhu** and R. Neumann*, *Design of Binuclear Compounds: Catalytic Applications,* Poster presentation at "Retreat-**2008**" which was held in Department of Organic Chemistry, Weizmann Institute of Science, 76100 Rehovot, Israel.
11. G. Durga Prasad, **V. Madhu** and S. K. Das* *Modeling the active sites of iron only hydrogenase: synthesis, crystal structures and properties of heterocyclic dithiolene based iron carbonyls, [Fe_2{μ_2-Pdt}$(CO)_6$] And [Fe_2{μ_2-Qdt}$(CO)_6$]* Poster presentation at the "Modern Trends in Inorganic Chemistry (MTIC-XII)" which was held in Indian Institute of Technology, Madras, India on December, **2007**.
12. **V. Madhu** and S. K. Das, *Reactivity of π–Conjugated Redox Active Organic Cations and [2]-Pseudorotaxane with Metal bis (1,2-dithiolene) Complexes anions: Self-Assembly and the Properties Tune by Inorganic Complex Anions.* Oral and Poster presentation at "Chemfest-**2007**" which was held in School of Chemistry, University of Hyderabad, Hyderabad, India.
13. **V. Madhu** and S. K. Das*, *Synthesis and properties of metal dithiolenes functionalized rotaxanes toward multifunctional materials: shape and diameter size of the supramolecular channels decided by the guest metal dithiolenes.* Poster presentation at "Chemfest-**2006**" which

was held in School of Chemistry, University of Hyderabad, Hyderabad, India

14. **V. Madhu** and S. K. Das*, *Self-Assembly of Ion Pair Complex Consisting of a Open Chain Single Bridged Tetra-Positive and Di-Positive Organic Cations and Inorganic Anions,* Poster presentation at "Chemfest-**2005**" which was held in School of Chemistry, University of Hyderabad, Hyderabad, India
15. **V. Madhu** and S. K. Das*, *Conformational change of an organic cation receptor by molecular recognition of an inorganic complex anion: A supramolecular influence of π - π interactions.* Oral and Poster presentation at the "Modern Trends in Inorganic Chemistry (MTIC-XI)" which was held in Indian Institute of Technology, Delhi, India on December, **2005**.
16. **V. Madhu** and S. K. Das*, *A New Family of Ion-Pair Charge-Transfer Complexes Between Anionic Metal Dithiolates (M(II) = Cu, Ni, Pd) and Cationic Nickel Tetraazabicyclononanes.* Poster presentation at the "Modern Trends in Inorganic Chemistry (MTIC-X)" which was held in Indian Institute of Technology, Bombay, India on December, **2003**.

Invited Lectures Delivered:

1. Delivered an Invited lecture on "*Challenges in Development of Transition Metal Complexes For Catalysis and Anti-cancer Applications*" at National conference on Catalysis and Sustainable Development (**NCCSD-2018**), organized by PG & Research Department of Chemistry, Padmavani College of Arts and Science for women, Salem, during 19, January, **2018.**
2. Delivered an Invited lecture on *"Arene-Ruthenium(II) Complexes: Impact of Chelating Ligand on Anticancer Activity"* at RSC symposium on Inorganic Chemical Biology (**ICB-2017**) Organized by the School of Chemistry, Madurai Kamaraj University, Madurai, during March 17-18, **2017**.
3. Delivered an Invited lecture on "*Development of Perylene and Perylenediimide Derivatives for Opto-Electronic Applications*" at *National Conference* on *'Emerging Challenges in Material Science*' (**Spec-2017**) held at Muthayammal College of Arts & Science, Rasipuram during January 27 to 28, **2017**.
4. Delivered an Invited lecture on "*Sulphur Rich Metallopolymers and Perylenediimide Analogues for Conducting and Opto-Electronic Applications*" at International Conference on Macromolecules: Synthesis, Morphology, Processing, Structure, Properties and Applications (**ICM-2016**) held at Mahatma Gandhi University, Kottayam, Kerala during May 13 to 15, **2016**.
5. Delivered a Special Invited lecture on "*Chemistry and Its Applications*" at Thiruvalluvar Govt. Arts College, Namakkal on 9, February **2013**.
6. Delivered an Invited lecture on "*Synthesis, Characterization and Applications of Nano Materials*" at Vijay Vidyalaya College of Arts and Science, Dharmapuri, on 7th September **2013**.
7. Delivered an Invited lecture on "*Synthesis, Characterization and Applications of Nano Materials*" at Vijay Vidyalaya College of Arts and Science, Dharmapuri, on 7th September **2013**.
8. Delivered a Special Invited lecture on "*Introduction and Job Opportunity of Chemistry*" in the DST-INSPIRE INTERNSHIP SCIENCE CAMP-2012 at Jayam College of Engineering and Technology on 25, August **2012**.

Books / Book Chapters

1. **V. Madhu**, Role of Catalysts in Sustainable Development; *Towards Invention and Innovation for Sustainable development*; IRIS publishers, **2014**, 127-131.

Research Group Members

Current Research Members :	1. P. Nagarasu (SERB-PA)
	2. K. Kanagajothi (SERB-PA)
Alumni	Dr. J. Pitchaimani