J. Kamalraja, Ph.D.

Assistant Professor (DST-INSPIRE Faculty)

Department of Chemistry, Pondicherry University,
Puducherry-605014.
Email: jkamalraja@yahoo.com: jkamalrajainspire15@gmail.com;
Mobile: (+91) 9750123067: Ph: (+91) 413-2654585

Date of Birth	:	30th May 1986
Sex	:	Male
Marital status	:	Married
Nationality	:	Indian
Language	:	Tamil, English.

Present Address

Dr. J. Kamalraja,
Assistant Professor (DST-INSPIRE),
Room No. 101, Department of Chemistry,
Pondicherry University,
Puducherry – 605014, India.

Permanent Address

Dr. J. Kamalraja
No. 62, Pattusamy Street,
Abatharanapuram, Vadalur,
Kurinjipadi (Tk), Cuddalore (Dt),
Tamilnadu-607303, India.

Professional Experience

- **Assistant Professor : (DST-Inspire Faculty)** — Department of Chemistry, **Pondicherry University**, Puducherry – 605014, India. (**1st April 2016 to present**)

- **Postdoctoral Fellow/ Visiting Faculty:** — **National Tsing Hua University (NTHU)**, Taiwan.
  Advisor: ***Prof. Chien-Hong Cheng***
  Research Area : OLED Materials & C-H activation

Academic Profile

- **Ph.D :** Chemistry, **CSIR-Central Leather Research Institute (CLRI), University of Madras**, Chennai, India.
  Advisor : ***Dr. P. T. Perumal***
  Thesis Title : *"A green and expedient approach for the synthesis of structurally diverse oxygen and nitrogen heterocycles utilizing versatile synthons through domino Michael addition reaction"*

- **M.Phil :** Chemistry (7.25 CGPA), **Pondicherry University**, Puducherry, India.
- **M.Sc :** Chemistry (66.47 %), **Madurai Kamaraj University**, Madurai, India.
- **B.Sc :** Chemistry (67.68 %), **Thiruvalluvar University**, Vellore, India.

Academic Achievements and Awards

- Awarded as **DST-INSPIRE Faculty Fellow** in 2016.
- Awarded as **Dr. D. S. Kothari Postdoctoral Fellow** in 2016.
- Awarded as **CSIR-SRF** in July 2012.
- Qualified **Graduate Aptitude Test in Engineering (GATE)** in February 2010
- Qualified **CSIR-JRF in National Eligibility Test (NET)** in June 2010**.**
- Qualified **CSIR-JRF in National Eligibility Test (NET)** in December 2009.
- Qualified **UGC Lectureship in National Eligibility Test (NET)** in June 2009.

Teaching Profession

M.Sc.- Chemistry, Department of Chemistry, Pondicherry University**.**

- *Course Code: CHEM 322: Organic Chemistry-III (4 credits).*
- *Course Code: CHEM 102: General Chemistry – II (3 credits).*
- *Course Code: CHEM 111: Principles of general Chemistry I (3 credits).*
- *Course Code: CHEM 400: Organic Chemistry Laboratory (3 credits).*
- *Course Code: CHEM 500: Graduate Research Laboratory (4 credits).*
- *Course Code: CHEM 580: Research Project (4 credits).*
- *Course Code: CHEM 582: Comprehensive Viva (1 credits).*

Area of Research

- Synthesis of novel biologically significant heterocyclic compounds *via* environmentally friendly approach
- Synthesis of interesting organic molecules *via* Domino reactions
- Synthesis of organic molecules via C-H activation strategy using transition metal catalyst
- Synthesis of organic and inorganic material for solar cell application
- Synthesis of photoluminescence materials for OLED application

Externally funded Projects

- **DST-Inspire Faculty Project (Status: Ongoing).**

  Title of the Project: "*A new hybrid and enhanced efficiency of Ruthenium complexes-based dye sensitized solar cells*"

  Funding Agency : Department of Science and Technology (DST)

  Amount : 35 Lakhs

  Duration : 2016-2021

  Role : Principle Investigator

Research Guidance-PhD

- *Student Name* : *Mr. E. Dhanasekar, 2017-present*
  Thesis Title : *"Synthesis of Novel Biologically Significant Heterocylic Compounds via Greener Approach"*
  Institute Name : *Department of Chemistry, Pondicherry University.*

Research Guidance-PG

1. *Student Name* : ***Raja**, 2016. (Completed)*
   Institute Name : *Department of Chemistry, Guru Nanak College, Chennai.*
2. *Student Name* : ***Anufia**, 2016. (Completed)*
   Institute Name : *Department of Chemistry, Pondicherry University, Puducherry.*
3. *Student Name* : ***Geethu**, 2017. (Completed)*
   Institute Name : *Department of Chemistry, Pondicherry University, Puducherry.*
4. *Student Name* : ***Nagaraj**, 2017. (Completed)*
   Institute Name : *Department of Chemistry, PSG Arts and Science College, Coimbatore.*
5. *Student Name* : ***Sarika**, 2018. (Completed)*
   Institute Name : *Department of Chemistry, Pondicherry University, Puducherry.*
6. *Student Name* : ***Mohamed**, 2018. (Completed)*
   Institute Name : *Department of Chemistry, Pondicherry University, Puducherry.*
7. *Student Name* : ***Sabarinathan**, 2018. (Completed)*
   Institute Name : *Department of Chemistry, Guru Nanak College, Chennai.*
8. *Student Name* : ***Saran**, 2019. (Completed)*
   Institute Name : *Department of Chemistry, St. Joseph's College, Cuddalore.*
9. *Student Name* : ***Kavyaa**, 2020. (Completed)*
   Institute Name : *Department of Chemistry, PSGR Krishnammal College, Coimbatore.*
10. *Student Name* : ***Srivathsan**, 2020. (On going)*
    Institute Name : *Department of Chemistry, Pondicherry University, Puducherry.*
11. *Student Name* : ***Subarna Kanti Laha** , 2020. (On going)*
    Institute Name : *Department of Chemistry, Pondicherry University, Puducherry.*
12. *Student Name* : ***Naresh Kumar**, 2020. (On going)*
    Institute Name : *Department of Chemistry, Pondicherry University, Puducherry.*

Conference / Workshop Organized

1. "National Symposium on Recent Advances in Chemistry (NSRAC-2020)" 18th -19th February 2020, Department of Chemistry, Pondicherry University, Puducherry-605014, India. ***Role: Organizing Committee member*.**

Invited Talks/ Lectures

1. Invited lecture entitled *"Name Reactions and Pericyclic Reactions"* for III UG and I PG Chemistry students on 26th February 2019 organized by Department of Chemistry, Nirmala College for Women, Coimbatore-641018, India.
2. Invited talk as Resource Person entitled "Career Counselling and future Opportunities of Research in Chemistry" on 27th July 2020 organized by the Department of Chemistry, School of Advanced Sciences, Kalasalingam Academy of Research and Education, Krishnankoil, Tamil Nadu.

Other Academic Activities

Reviewer in Reputed Journals:

- ChemistrySelect

Important Research Publications

1. Biological evaluation of gallic acid and quercetin derived from Ceriops tagal: insights from extensive in vitro and in silico studies Biological evaluation of gallic acid and quercetin derived from Ceriops tagal: insights from extensive in vitro and in silico studies, V. Sachithanandam, A. Parthiban, P. Lalitha, Jayaraman Muthukumaran , Monika Jain, Dhanasekar Elumalai, **Kamalraja Jayabal**, R. Sridhar, Purvaja Ramachandran & Ramesh Ramachandran **Journal of Biomolecular Structure and Dynamics**. (Accepted https://doi.org/10.1080/07391102.2020.1828173). Impact Factor: 3.220.
2. Metal-Free and Regioselective Synthesis of Substituted and Fused Chromenopyrrole Scaffolds via the Divergent Reactivity of α-Azido Ketones in Water, Elumalai Dhanasekar, Tharanikkarasu Kannan, Rengarajan Venkatesan, Paramasivam Thirumalai Perumal, and **Jayabal Kamalraja*** **Journal of Organic Chemistry**, 2020, 85, 9631−9649. Impact Factor: 4.805.
3. $InCl_3$-Assisted Eco-Friendly Approach for N-Fused 1,4-Dihydropyridine Scaffolds via Ring Opening Michael Addition of Cyclic Nitroketene and Iminocoumarin: Synthesis and DFT Studies, Dhanasekar Elumalai, Ramachandran Gnanasekaran, Saraswathi Leelakrishnan, Gunavathy Nachimuthu, Tharanikkarasu Kannan, Thirumalai Perumal Paramasivam, and **Kamalraja Jayabal,*** **ChemistrySelect**, 2018, 3, 2070–2079. Impact Factor: 1.811.

4. Synthesis, characterization and biological evaluation of chromen and pyrano chromen-5-one derivatives impregnated into a novel collagen scaffold for tissue engineering application, S. Kandhasamy, G. Ramanathan, **Jayabal Kamalraja**, R. Balaji, N. Mathivanan, T. V. Uma and P. T. Perumal, **RSC Advances**, 2015, 5, 55075-55087. Impact Factor: 3.289.
5. $InCl_3$-mediated eco-friendly three-component domino reaction for synthesis of highly functionalized triazolylspiroxindolinopyrans and triazolylpyrans under solvent-free conditions, **Jayabal Kamalraja**, Potharaj Murugasan, Paramasivan Thirumalai Perumal, **RSC Advances**, 2014, 4, 19422–19432. Impact Factor: 3.289.
6. An expedient four-component domino protocol for the regioselective synthesis of highly functionalized pyranopyrazoles and chromenopyrazoles via nitroketene N,S-acetal chemistry under solvent-free condition, **Jayabal Kamalraja**, Thirumalai Perumal Paramasivan, **Tetrahedron Letters**, 2014, 55, 2010–2014. Impact Factor: 2.379.
7. Greener approach for regioselective synthesis of multifunctionalized indolylpyrrole and indolyltriazolylpyrrole hybrids via Michael addition of alpha-azidoketones, **Jayabal Kamalraja**, Ramachandran Sowndarya, Paramasivan Thirumalai Perumal, **Synlett**, 2014, 2208-2212. Impact Factor: 2.323.
8. Microwave assisted InCl3 mediated regioselective synthesis of highly functionalized indolylpyran under solvent-free condition and its chemical transformation to indolyltriazolylpyran hybrids, **Jayabal Kamalraja**, Paramasivan Thirumalai Perumal, **Tetrahedron Letters**, 2014, 55, 3561–3564. Impact Factor: 2.379.
9. Indium Trichloride Catalysed Domino Reactions of Isatin: A Facile Access to the Synthesis of Spiro(indoline-3,4′-pyrano[2,3-c]pyrazol)-2-one Derivatives, Nataraj Poomathi, **Jayabal Kamalraja**, Sivakalai Mayakrishnan, D. Muralidharan, Paramasivan T. Perumal, **Synlett**, 2014, 708-712. Impact Factor: 2.323.
10. An Efficient, One-Pot Regioselective Synthesis of Highly Functionalized Chromen-5-ones and Pyrano[3,2-c]chromen-5-ones via a Tandem Knoevenagel–Michael–Cyclization Sequence, **Jayabal Kamalraja**, Doraiswamy Muralidharan, Paramasivan Thirumalai Perumal, **Synlett**, 2012, 2894-2898. Impact Factor: 2.323.
11. A facile method for the synthesis of 3-(aminomethylene) oxindoles from isatylidene malononitriles and α-azidoketones, **Jayabal Kamalraja**, Thelagathoti Hari Babu, Doraiswamy Muralidharan, Paramasivan Thirumalai Perumal, **Synlett**, 2012, 1950-1954, Impact Factor: 2.323.
12. Michael addition of α-azido ketones on iminocoumarin derivatives: an efficient access to new functionalized azido chromenes, Thelagathoti Hari Babu, **Jayabal Kamalraja**, Doraiswamy Muralidharan, Paramasivan T. Perumal, **Tetrahedron Letters**, 2011, 52, 4093-4096. Impact Factor: 2.379.

Other Publications

1. 7,7-Dimethyl-2-methylamino-4-(4-methylphenyl)-3-nitro-7,8-dihydro-4H-chromen5(6H)-one, S. A. Inglebert, **Jayabal Kamalraja**, K. Sethusankar P.T. Perumal, **Acta Cryst**. 2014, E70, 710–711. Impact Factor: 0.347.

2. 4-(4-Bromophenyl)-7,7-dimethyl-2-methylamino-3-nitro-7,8-dihydro-4Hchromen5(6H)-one including an unknown solvate, S. A. Inglebert, **Jayabal Kamalraja**, K. Sethusankar P.T. Perumal, **Acta Cryst**. 2014, E70, 579-580. Impact Factor: 0.347.
3. (4S*)-2-Methylamino-3-nitro-4-(4-nitrophenyl)-5,6,7,8-tetrahydro-4H-chromen5-one, P. Narayanan, **Jayabal Kamalraja**, Paramasivam T. Perumal, K. Sethusankara, **Acta Cryst**. 2013, E69, 1380–1381. Impact Factor: 0.347.
4. 4-(4-Bromophenyl)-2-methylamino-3-nitro-5,6,7,8-tetrahydro-4H-chromen-5-one, P. Narayanan, **Jayabal Kamalraja**, Paramasivam T. Perumal, K. Sethusankara, **Acta Cryst**. 2013, E69, 931–932. Impact Factor: 0.347.
5. rac-4-(4-Chlorophenyl)-2-methylamino-3-nitro-5,6,7,8-tetrahydro-4H-chromen5-one, P. Narayanan, **Jayabal Kamalraja**, Paramasivam T. Perumal, K. Sethusankara, **Acta Cryst**. 2013, E69, 1053–1054, Impact Factor: 0.347.
6. Crystal structure of 4-(4-methoxyphenyl)-7,7-dimethyl-2-methylamino-3-nitro-7,8-dihydro-4H-chromen-5(6H)-one, S. A. Inglebert, **Jayabal Kamalraja**, K. Sethusankar P.T. Perumal, **Acta Cryst**. 2014, E70, 901–902, Impact Factor: 0.347.
7. 2-Amino-6-(piperidin-1-yl)-4-p-tolylpyridine-3,5-dicarbonitrile, S. A. Inglebert, **Jayabal Kamalraja**, K. Sethusankar, G. Vasuki, **Acta Cryst**, 2013, E69, 1807. Impact Factor: 0.347.
8. 2-Amino-4-(4-chlorophenyl)-6-(pyrrolidin-1-yl)pyridine-3,5-dicarbonitrile, S. A. Inglebert, **Jayabal Kamalraja**, K. Sethusankar, G. Vasuki, **Acta Cryst**. 2012, E68, 1000. Impact Factor: 0.347.
9. 2-Amino-6-(pyrrolidin-1-yl)-4-p-tolylpyridine-3,5-dicarbonitrile, S. A. Inglebert, **Jayabal Kamalraja**, G. Vasuki, K. Sethusankar, **Acta Cryst**. 2011, E67, 1972. Impact Factor: 0.347.
10. Crystal structure of 2-methylamino-3-nitro-4-p-tolylpyrano[3,2-c]chromen-5(4H)-one, J. Govindaraj, Y. Aamina Naaz, **Jayabal Kamalraja**, Paramasivam T. Perumal and A. SubbiahPandi, **Acta Cryst**. 2015, E71, 0158. Impact Factor: 0.347.
11. Crystal structure of 4-(2-azidophenyl)-5-benzoyl-2-(1H-indol-3-yl)-1H-pyrrole3-carbonitrile, G. Vimala, **Jayabal Kamalraja**, Y. Amina Naaz, P. T. Perumal and A. Subbiah Pandi, **Acta Cryst**. 2015, E71, 0335. Impact Factor: 0.347.
12. Crystal structure of 1'-(prop-2-yn-1-yl)-1,4-dihydrospiro[benzo[d][1,3]oxazine-2,30-indolin]-2'-one, Y. Aamina Naaz, **Jayabal Kamalraja**, G. Vimala, P. T. Perumal, and A. Subbiah Pandi, **Acta Cryst**. 2015, E71, o510–o511. Impact Factor: 0.347.
13. 5-Benzoyl-2-(1H-indol-3-yl)-4-(naphthalen-2-yl)-1H-pyrrole-3-carbonitrile, G. Vimala, **Jayabal Kamalraja**, P. T. Perumal and A. Subbiah Pandi, **Acta Cryst**. 2016, 1, x160526. Impact Factor: 0.347.
14. 5-Benzoyl-2-(5-bromo-1H-indol-3-yl)-4-(4-methoxyphenyl)-1H-pyrrole-3-carbonitrile, G. Vimala, **Jayabal Kamalraja**, P. T. Perumal and A. Subbiah Pandi, **Acta Cryst**. 2016, 1, x160724. Impact Factor: 0.347.
15. 5-Benzoyl-2-(5-bromo-1H-indol-3-yl)-4-(4-nitrophenyl)-1Hpyrrole-3-carbonitrile dimethyl sulfoxide monosolvate, Y. AaminaNaaz, **Jayabal Kamalraja**, Paramasivam T. Perumal and A. Subbiah Pandi, **Acta Cryst**. 2016, 1, x160597. Impact Factor: 0.347.

16. 5-Nitro-1,4-dihydrospiro[3,1-benzoxazine-2,3'-indolin]-2'-one. Y. Aamina Naaz, **Jayabal Kamalraja**, Paramasivam T. Perumal and A. Subbiah Pandi. **IUCrData**, 2018, 3, x180664. Impact Factor: 0.347.
17. Crystal Structure Analysis of (6-hydroxy-8-(2-hydroxyphenyl)- 9-nitro-2, 3, 4, 8-tetrahydro-1H-pyrido [1, 2-a] pyrimidin-7-yl) (1H-indol-3-yl) methanone. K. Hemanathan, R. Raja, **J. Kamalraja**, K. Sakthi Murugesan, **Int. J. Adv. Sci. Eng**. 2019, 5, 1132. Impact Factor: 5.183.
18. Crystal structure analysis, Molecular Docking and Interaction Studies of 2,4-diamino6-nitro-5-(p-tolyl)-7,8,9,10-tetrahydro5H-pyrimido[1,2-a][1,8]naphthyridine-3-carbonitrile N,Ndimethylformamide monosolvate. K. Hemanathan, R. Raja, **J. Kamalraja**, K. Sakthi Murugesan, **Int. J. Adv. Sci. Eng**, 2019, 6, 1200. Impact Factor: 5.183.

Conference Presentations

1. "National Symposium on Recent Advances in Chemistry (NSRAC-2020)" 18th -19th February 2020, Department of Chemistry, Pondicherry University, Puducherry-605014, India.
2. Participated in "Recent Trent in Chemistry" on 20th February 2017 at Department of Chemistry, Pondicherry University, Puducherry-605014.
3. Participated in "International Conference on Recent Advances In Material Chemistry (ICRAMC-2017)" on 15-17, February 2017 at SRM University, Chennai.
4. Oral presentation on "National Conference on Innovations in Chemical Sciences (NCIC-2016)" held from 28th to 30th January 2016 at Guru Nanak College (Autonomous), Velachery, Chennai-600020.
5. Participated National Seminar on "National Level Workshop on Analytical Techniques in Chemistry-2015 (ATRC-2015)" Organized by the Department of Chemistry, B.S. Abdur Rahman University, Vandalur, Chennai, on April 21st & 22nd 2015.
6. Participated in "National Seminar on National Level Workshop on Analytical Techniques in Chemistry-2015 (ATRC-2015)" Organized by the Department of Chemistry, B.S. Abdur Rahman University, Vandalur, Chennai, on April 21st & 22nd, 2015.
7. Poster presented entitled "Microwave assisted $InCl_3$ mediated regioselective synthesis of highly functionalized indolylpyran under solvent-free condition and its chemical transformation to indolyltriazolylpyran hybrids" Jayabal Kamalraja, P. T. Paramasivan in the National Conference on "Emerging Trend in Chemistry and Materials (ETCM)" held at 9th & 10th April, 2015 organized by Department of Chemistry, Thiruvalluvar University, Tamilnadu, India.
8. Poster presented entitled "$InCl_3$-mediated eco-friendly three-component domino reaction for synthesis of highly functionalized triazolylspiroxindolinopyrans and triazolylpyrans under solvent-free conditions" Jayabal Kamalraja, P. T. Paramasivan in the 17th CRSI National Symposium in Chemistry held from 6th & 8th Feb-2015 at CSIR-National Chemical Laboratory, Pune, India.

9. Poster presented entitled "A Greener Approach for the Regioselective Synthesis of Multifunctionalized Indolylpyrrole and Indolyltriazolylpyrrole Hybrids via Michael Addition of α-Azido Ketones" Jayabal Kamalraja, P. T. Paramasivan, in the "Nation Symposium on Transcending Frontier in Organic Chemistry-2014" held at CSIR-NIIST, Trivandrum, Kerala during October 9th & 10th, 2014.
10. Poster presented entitled "An expedient four-component domino protocol for the regioselective synthesis of highly functionalized pyranopyrazoles and chromenopyrazoles via nitroketene-N, S-acetal chemistry under solvent-free condition" Jayabal Kamalraja, P. T. Paramasivan, "International Conference on Advances in New Materials (ICAN)" conducted by the Department of Inorganic Chemistry, 20th & 21st June 2014 at University of Madras, Chennai.
11. Participated in the "8th J-National Organic Symposium Trust (J-NOST)" Conferences for research scholars from 15-17th December 2012 held at the Department of Chemistry, Indian Institute of Technology Guwahati, Assam, India.
12. Poster presented entitled "Michael addition of α-azido ketones on iminocoumarin derivatives: An efficient access to new functionalized azido chromenes" Jayabal Kamalraja, P. T. Perumal in the "3rd International Conference on Heterocyclic Chemistry" held at Department of Chemistry, University of Rajasthan, Jaipur, India, December 10th & 23rd, 2011.

Official Links:

1. https://www.pondiuni.edu.in/faculy_profiles/dr-j-kamalraja-dst-inspire-2/
2. https://vidwan.inflibnet.ac.in/profile/168691

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