

SELVAKUMAR JAYARAMAN, Ph.D.

Curriculum Vitae

Postdoctoral Research Assistant
Chemistry Department
Wright State University
Dayton, Ohio, USA, 45435.

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Summary of Qualifications

- Organometallic and Organic Synthesis with strong problem-solving skills
- 17 peer-reviewed publications.

Research Interests

- Natural Product Synthesis
- Transition Metal-Catalyzed C–H Activation
- Organometallic Medicinal Chemistry

Research Experience

Wright State University

Postdoctoral Research Assistant with Dr Kuppuswamy Arumugam
Chemistry Department, Dayton, Ohio, USA (September 2016–August 2021)
Research topic: *redox active-N-heterocyclic carbene gold(I) complexes for anti-cancer applications*

Indian Institute of Technology Madras

Research Associate with Dr. Md. Mahiuddin Baidya
Department of Chemistry, Chennai, India (March 2015–August 2016)
Research topic: “*Transition metal catalyzed C-H activation reactions: C-C and C hetero atom bond formation and development of new directing group*”

Pondicherry University

Research Associate with Dr. C. R. Ramanathan
Department of Chemistry, Puducherry, India (August 2013–February 2015)
Research topic: “*Brønsted acid assisted construction of biologically active isoquinoline alkaloids*”

Education

Pondicherry University

Ph.D. Studies with Dr C. R. Ramanathan
Department of Chemistry, Puducherry, India (October 2007–July 2013)
Thesis title: “*Intramolecular cyclization of phenethylimides through imide carbonyl activation: synthesis of tetrahydroisoquinoline derivatives and related alkaloids*”

Periyar University M.Sc. Chemistry

Department of Chemistry, Salem, Tamilnadu India (2005-2007)

Thesis title: “*An easy and facile nitration of naphthols using ceric(iv) ammonium nitrate under solvent free conditions*”

Presentations in Conferences/ Seminars

Ohio Inorganic Weekend, Nov. 01-02, 2019, The University of Toledo, Ohio, USA.

Ohio Inorganic Weekend, Nov. 03-04, 2017, The Ohio State University, Ohio, USA.

48th Central Regional Meeting of American Chemical Society, Jun 6-9, 2017, Dearborn, Michigan, USA.

Ohio Inorganic Weekend, Nov. 13-14, 2016, University of Akron, Ohio, USA.

15th CRSI National Symposium in Chemistry, Feb 1-3 2013, Banaras Hindu University, India.

OSHWB, ICT, Hyderabad, India, Aug 1-4, 2010. (*Received best poster award*)

5th, J-NOST, Indian Institute of Technology Kanpur, Kanpur, India, Dec 2-5, 2009.

Instrumental Techniques

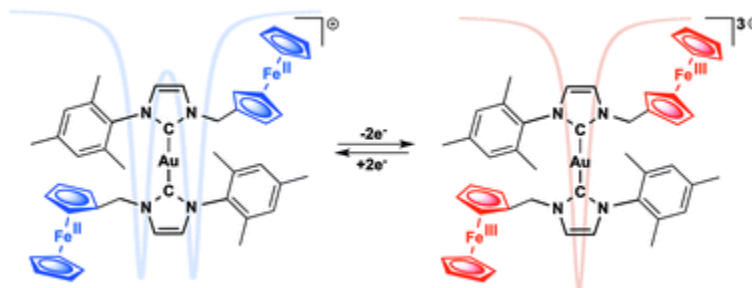
NMR (1D and 2D, COSY, HMBC, NOESY, HSQC, ¹⁹F, ³¹P and ¹¹B), IR, UV, GC-MS, LC-MS, X-ray diffraction (crystal selection and mounting), Electrochemical Workstation, Spectroelectrochemistry.

Academic Qualifications

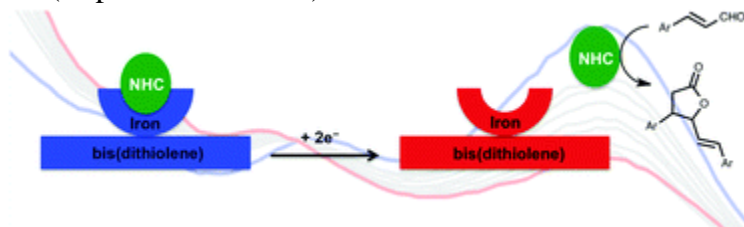
- National level exam qualified for the chemical sciences “**Graduate Aptitude Test in Engineering-2007 (GATE)**” conducted by IIT Kanpur, Kanpur, India.
- “**CSIR-JRF-NET-June 2009**” sponsored by Council of Scientific & Industrial Research (CSIR)”, New Delhi, India (2010-2013).
- Dr. D. S. Kothari Postdoctoral Fellowship from UGC, India, **2015**.
- American Institute of Chemists (**AIC**), Postdoctoral research award **2021**.

Research Publications

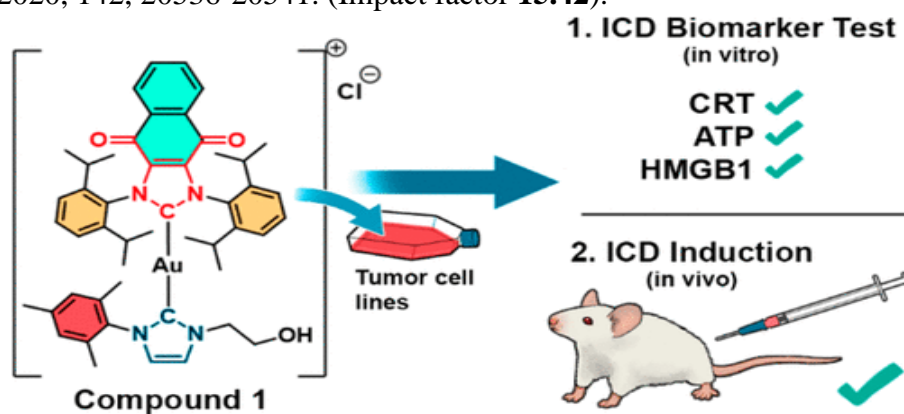
1. *Detailed Structural and Spectroscopic elucidation of Ferrocenium coupled N-heterocyclic carbene gold(I) complexes.* Reinhard, G. L.; **Selvakumar J.**; Prybil, J. W.; Arambula, J. F.; Kuppuswamy Arumugam, K. *Dalton Trans.* 2022, 51, 1533-1541. (Impact factor **4.39**).



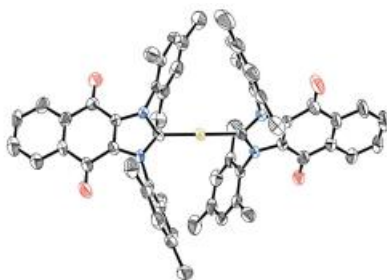
2. *Predictive medicinal metabolites from Momordica dioica against comorbidity related proteins of SARS-CoV-2 infections*, Chavan, S.; Harikrishnan, A.; **Selvakumar, J.**; Choudhury, A. R. and Veena, V. J. *Biomol. Struct. Dyn.* 2021, DOI: 10.1080/07391102.2020.1868340. (Impact factor **3.39**).
3. *An electrochemically controlled release of NHCs using iron bis(dithiolene) N-heterocyclic carbene complexes*, **Selvakumar, J.**; Simpson, S. M.; Zurek, E.; Arumugam, K. *Inorg. Chem. Front.* 2021, 8, 59-71 (Impact factor **5.958**).



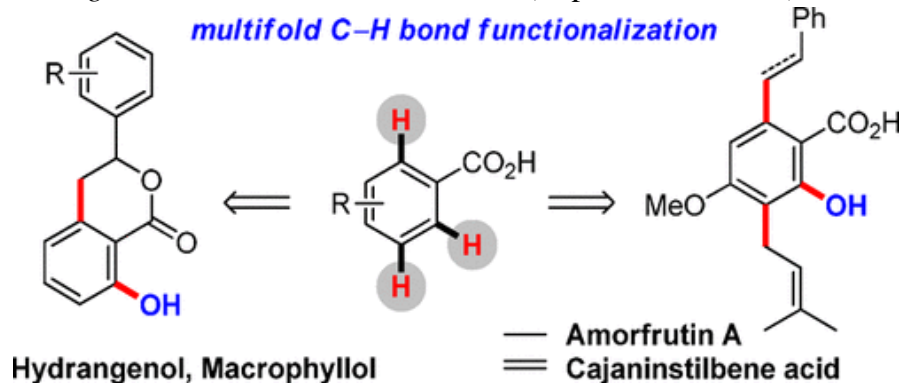
4. *Rationally Designed Redox-Active Au(I) N-Heterocyclic Carbene: An Immunogenic Cell Death Inducer*, Sen, S.; Hufnagel, S.; Maier, E. Y.; Aguilar, I.; **Selvakumar, J.**; DeVore, J. E.; Lynch, Kuppuswamy Arumugam, Zhengrong Cui, Jonathan L Sessler and Jonathan F Arambula. *J. Am. Chem. Soc.* 2020, 142, 20536-20541. (Impact factor **15.42**).



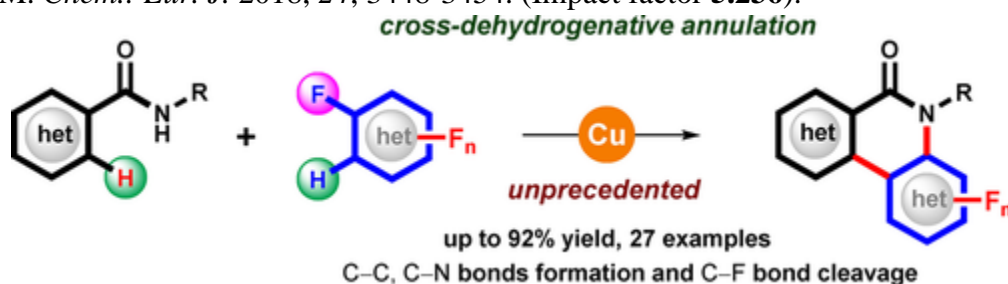
5. *Synthesis and molecular structure of biologically significant bis(1,3-dimesityl-4,5-naphtho-quinoidimidazol-2-ylidene)gold(I) complexes with chloride and dichloridoaurate counter-ions*, **Selvakumar J.**, Miles, M. H., Grossie D. A., and Arumugam, K., *Acta Cryst.* 2019, C75, 462-468. (Impact factor **1.056**).



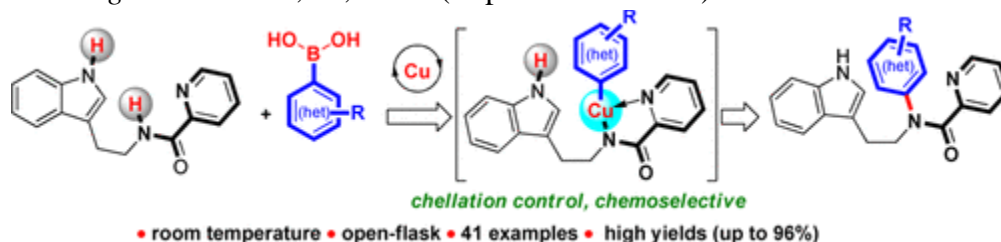
6. *1,1',3,3'-Tetramesitylquinobis (imidazole)-2,2'-dithione*, **Selvakumar, J.**; Arumugam, K. IUCrData 2019, 4, x191268 (Impact factor --).
7. *Directed C-H bond functionalization: A unified approach to formal synthesis of Amorfrutin A, Cajaninstilbene Acid and Hydrogenol, and Macrophyllol*, Grandhi, G. S; **Selvakumar, J**; Dana, S; Baidya, M. *J. Org. Chem.* 2018, 83, 12327-12333. (Impact factor **4.354**).



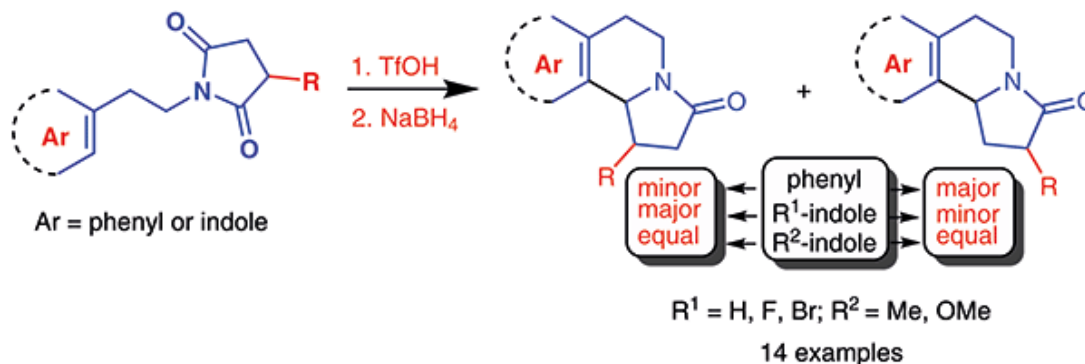
8. *A cross-dehydrogenative annulation strategy towards synthesis of polyfluorinated phenanthridinones with copper*, Mandal, A; **Selvakumar, J**; Dana, S.; Mukherjee, U and Baidya, M. *Chem.: Eur. J.* 2018, 24, 3448-3454. (Impact factor **5.236**).



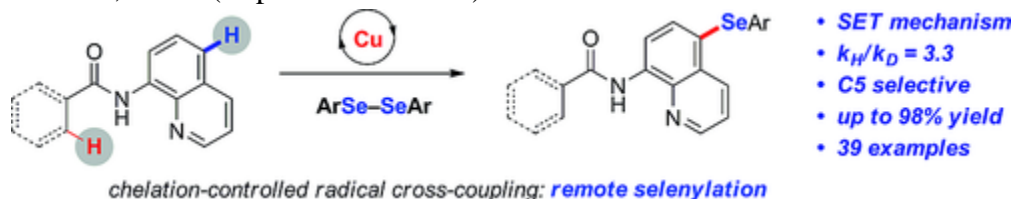
9. *Copper Catalyzed C-N Cross-Coupling Reaction of Aryl Boronic Acids at Room Temperature through Chelation Assistance*, Sahoo, H.; Mukherjee, S.; Grandhi, G. S.; **Selvakumar, J.** Baidya, M. *J. Org. Chem.* 2017, 82, 2764. (Impact factor **4.354**).



10. *Triflic acid mediated cyclization of N-phenethyl and N-(3-indolyethyl) unsymmetrical succinimides: regio and diastereoselective synthesis of substituted pyrroloisoquinolinones and indolizinoindolones*, **Selvakumar, J.**; Mangalaraj, S.; Mohan Achari, K. M.; Mukund, K.; Ramanathan, C. R., *Synthesis* 2017, 49, 1053. (Impact factor **3.157**).



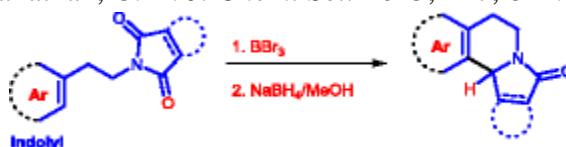
11. *Remote C–H Selenylation of 8-Aminoquinolines via Copper-Catalyzed Radical Cross-Coupling*. Harekrishna Sahoo, Anup Mandal, **Jayaraman Selvakumar**, and Mahiuddin Baidya. *Eur. J. Org. Chem.* 2016, 4321. (Impact factor **3.021**).



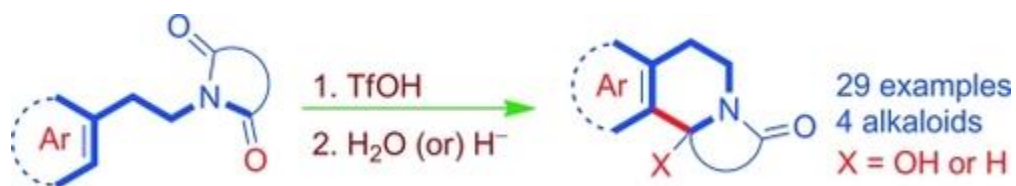
12. *Copper-Mediated Etherification of Arene C–H Bond Directed by (2-Aminophenyl)pyrazole Group*. **Selvakumar, J.**; Grandhi, G.S.; Sahoo, H.; Baidya, M. *RSC. Advances*, 2016, 6, 79361. (Impact factor **3.36**).



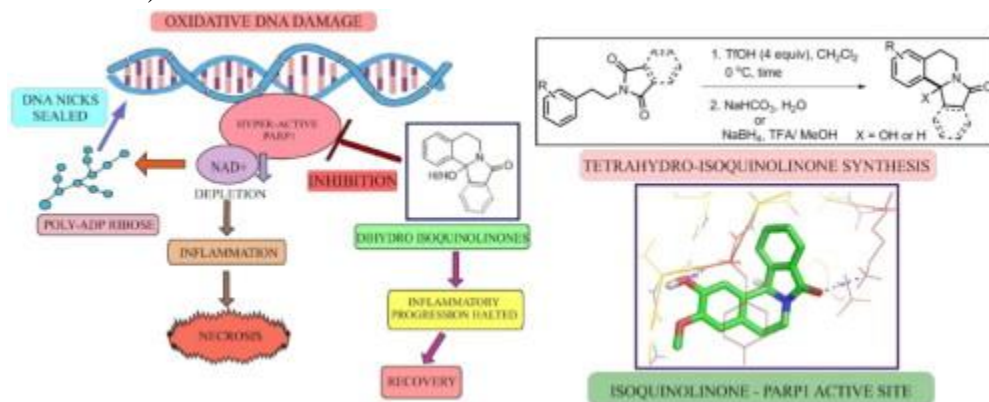
13. *Syntheses of fused tetrahydro-β-carboline analogues through imide carbonyl activation using BBr₃: Evidence for the involvement of fused cyclic N-acyliminium ion intermediate*. Mangalaraj, S.; **Selvakumar, J.**; Ramanathan, C. R. *J. Chem. Sci.* 2015, 127, 811. (Impact factor **1.573**).



14. *Synthesis of condensed tetrahydroisoquinoline class of alkaloids by employing TfOH-mediated imide carbonyl activation*, **Selvakumar, J.**; Srinivasa Rao, R.; Srinivasapriyan, V.; Ramanathan, C. R. *Eur. J. Org. Chem.* 2015, 2175. (Impact factor **3.021**).



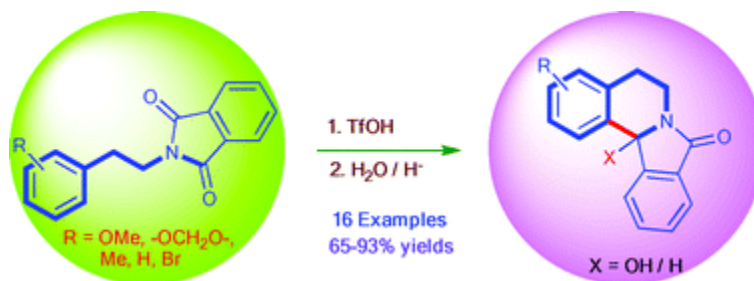
15. *Synthesis and biological evaluation of isoindoloisoquinolinone, pyroloisoquinolinone and benzoquinazolinone derivatives as PolyADP-Ribose Polymerase-1 inhibitors.* Suyavaran, A.; Ramamurthy, C.; Mareeswaran, R.; Shanthi, Y.V.; **Selvakumar, J.**; Mangalaraj, S.; Suresh Kumar, M.; Ramanathan, C. R.; Thirunavukkarasu, C. *Bioorg. Med. Chem.* 2015, 23, 488. (Impact factor **3.641**).



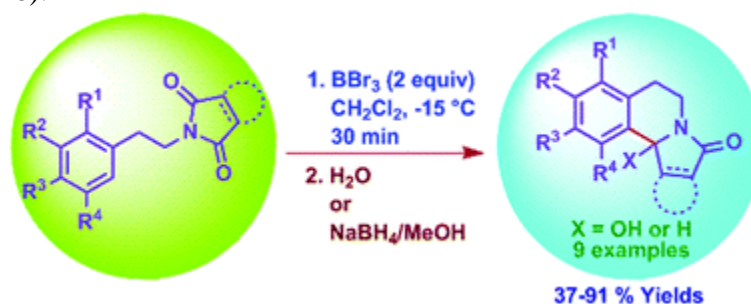
16. *1-[2-(3-Methoxyphenyl)ethyl] pyrrolidine-2,5-dione*, Fatima, Z.; **Selvakumar, J.**; Srinivasan, T.; Velmurugan, D. *Acta Cryst. E.* 2013, 69, o1489 (Impact factor --).
17. *Friedel-Crafts hydroxyalkylation through activation of carbonyl group using AlBr₃: An easy access to pyridyl aryl / heteroarylcarbinols*, Harikrishnan, A.; **Selvakumar, J.**; Gnanamani, E.; Suman, B.; Ramanathan, C. R. *New J. Chem.*, 2013. 37, 563. (Impact factor **3.591**).



18. *Brønsted acid assisted activation of imide carbonyl group: Regioselective synthesis of isoindoloisoquinolinone alkaloid (±)-Nuevamine*, **Selvakumar, J.**; Ramanathan, C. R. *Org. Biomol. Chem.*, 2011, 9, 7643-7646. (One of the top 10 most accessed article in the month of September 2011). (Impact factor **3.876**).



19. An unusual reactivity of BBr₃: Accessing tetrahydroisoquinoline units from N-phenethylimides, **Selvakumar, J.**; Makriyannis, A.; Ramanathan, C. R. *Org. Biomol. Chem.*, 2010, 8, 4056-4058. (Impact factor **3.876**).



Research Publications under process

1. *Hydrophilic Redox active N-Heterocyclic carbene gold(I) complexes for anticancer applications.* **Selvakumar, J.**, and Arumugam, K.,* (manuscript under preparation)
2. *Investigation of ligand induced geometric distortion of Iron-bis(dithiolene)-N-heterocyclic carbene adducts.* **Selvakumar, J.**, and Arumugam, K.,* (manuscript under preparation).
3. *Synthesis and spectroscopic characterization of redox-active N-heterocyclic carbene metal-bis(dithiolene) adducts,* **Selvakumar, J.**, and Arumugam, K.,* (manuscript under preparation)

Academic Achievements

- 294 google Scholar Citations
- Researchers from 41 countries cited my publications.
- Invited to act as a referee for reviewing articles from international journals like *Synthesis*, *Tetrahedron Letters*, *Organic Preparations and Procedures International*, *Journal of Biomolecular structure and Dynamics*, *Results in Chemistry* and *Analytical Chemistry Letters*.
- Has been admitted as a Member of Royal Society of Chemistry (MRSC)