

Dr. Rani Rajan
(Curriculum Vitae)

Objective: Teaching is one of the most rewarding careers that one can embark on. I have decided to be a teacher because I believe only education can help us to construct a better world and a better future.

RESIDENTIAL ADDRESS

Thakadiethu House
Mallassery P. O.
Pramadom, Pathanamthitta,
Kerala-689646,
India.
e-mail: rani308@gmail.com
Phone: +91-468-2325916
Mob: 9400625916

PERSONAL PARTICULARS

Date of Birth : 3rd August 1981
Gender : Female
Marital status : Married
Nationality : Indian
Religion, Caste : Hindu, Ezhava

ACADEMIC CHRONICLE

Course	Year	University	Division
Ph. D. (Chemistry)	2013	Cochin University of Science and Technology, Kerala, India	
M. Sc (Chemistry)	2004	Sree Narayana College, Chengannur University of Kerala, Kerala, India.	First Class (71.5 %)
B. Sc (Chemistry)	2002	St. John's College, Anchal University of Kerala, Kerala, India.	First Class (80.2 %)

Pre-degree	1999	St. John's College, Anchal University of Kerala, Kerala, India.	First Class (60.0%)
------------	------	--	------------------------

AWARDS AND FELLOWSHIPS

- Awarded the prestigious CSIR, Senior Research Fellowship, Council of Scientific and Industrial Research (CSIR), Government of India (September 2008 – November 2011).

RESEARCH INTERESTS

- Design and synthesis and biological studies of neoglycoconjugates.
- In various carbon-carbon and carbon-heteroatom bond forming reactions *via* Multicomponent Reactions (MCRs).
- Palladium mediated catalytic reactions especially those dealing with π -allyl palladium intermediate.
- Dipolar cycloaddition of pentafulvenes.

RESEARCH EXPERIENCE

- **Senior Research Fellow (CSIR)** at Organic Chemistry Section, Chemical Sciences and Technology Division, National Institute for Interdisciplinary Science and Technology (NIIST), CSIR, Trivandrum – 695 019, from 19th November 2008- present, under the supervision of Dr. K. V. Radhakrishnan.
- **Junior Project Assistant Grade II (DST)** at Organic Chemistry Section, Chemical Sciences and Technology Division, National Institute for Interdisciplinary Science and Technology (NIIST), CSIR, Trivandrum – 695 019, from 25th April 2005 – 30th June 2008 under the supervision of Dr. K. V. Radhakrishnan.

TECHNICAL EXPERIENCE

- Synthesis and characterization of organic molecules using spectroscopic methods such as NMR, IR, HPLC, GC, HRMS, and CHN.
- Photophysical studies using UV-Visible-NIR spectrophotometer, fluorescence spectrophotometer and cyclic voltameter.
- Apt knowledge in using various MS Word, Power Point and other MS Office programs, Chem-Draw, Origin, End-Note and Titan Molecular Calculation Software.

PUBLICATIONS

1. An exclusive approach to 3,4-disubstituted cyclopentenes and alkylidene cyclopentenes via palladium catalyzed ring opening of azabicyclic olefins with aryl halides. Joseph, N., **Rajan, R.**, John, J., Devika, N. V., Chand, S. S., Suresh, E., Pihko, P. M., Radhakrishnan, K. V. *RSC Adv.*, **2013**, 3 (21), 7751 - 7757.
2. Palladium catalyzed reaction of ortho functionalized aryl iodides with bicyclic hydrazines: facile route towards heteroannulated cyclopentenes and azabicycles. John, J., **Rajan, R.**, Joseph, N., Chand, S. S., Prakash, P., Suresh, E. Radhakrishnan, K.V. *Tetrahedron*, **2012**, 69, 152-159.
3. Transition metal catalyzed carboannulation of diazabicyclic alkenes with ambiphilic bifunctional reagents: A facile route towards functionalized indanones and indanols. Joseph, N., John, J., **Rajan, R.**, Thulasi, S., Mohan, A., Suresh, E., Radhakrishnan, K.V. *Tetrahedron*, **2011**, 67, 4905-4913.
4. Expedient synthesis of N-bridged heterocycles via dipolar cycloaddition of pentafulvenes with 3-oxidopyridinium betaines. Kuthanapillil, J. M., Thulasi, S., **Rajan, R.**, Krishnan, K.S., Suresh, E., Radhakrishnan, K.V. *Tetrahedron*, **2011**, 67, 1272-1280.
5. Trapping the -allylpalladium intermediate from fulvene-derived azabicyclic olefin with soft nucleophiles. **Rajan, R.**, John, J., Thulasi, S., Joseph, N., Radhakrishnan, K.V., Sawant, R.C. *Synthesis*, **2010**, 3649-3656.
6. A facile synthesis of novel triazabicyclic molecules as potential bicyclic templates for pharmaceutical ligands by the ring opening metathesis-cross metathesis of triazatricyclo[3.2.1.0^{2,6}]dec-8-ene-3,5-diones. Anas, S., Sarika, C., **Rajan, R.**,

Radhakrishnan, K.V. *Indian Journal of Chemistry - Section B Organic and Medicinal Chemistry*, 2008, 1063-1070.

7. Periselectivity in the cycloaddition reactions of pentafulvenes with 3-oxidopyrylium betaines: Effect of substituent on the C-6 carbon. Krishnan, K.S., **Rajan, R.**, Radhakrishnan, K.V. *Synthesis*, **2008**, 1955-1959.
8. A simple and efficient strategy towards eleven-membered carbocycles via novel synthetic transformations of pentafulvenes. Krishnan, K.S., Kuthanapillil, J.M., **Rajan, R.**, Suresh, E., Radhakrishnan, K.V. *European Journal of Organic Chemistry*, **2008**, 5847-5851.
9. Iodine assisted palladium catalyzed ring opening of bicyclic hydrazines with organoboronic acids: Stereoselective synthesis of functionalized cyclopentenes and alkylidene cyclopentenes. Anas, S., John, J., Sajisha, V.S., John, J., **Rajan, R.**, Suresh, E., Radhakrishnan, K.V. *Organic and Biomolecular Chemistry*, **2007**, 4010-4019.
10. Ionic liquid [bmim]PF₆-mediated synthesis of 1,2-orthoesters of carbohydrates and the glycosidation reactions of 4-pentenyl orthoesters. Anas, S., Sajisha, V.S., **Rajan, R.**, Kumaran, R.T., Radhakrishnan, K.V. *Bulletin of the Chemical Society of Japan*, **2007** 553-560.

ORAL / POSTERS PRESENTED IN NATIONAL AND INTERNATIONAL CONFERENCES

Posters presented:

1. Palladium catalyzed desymmetrization of pentafulvene derived bicyclic hydrazines with soft nucleophiles. Jijy, E.; **Rajan, R.**; Radhakrishnan, K. V. *International Conference on Heterocyclic Chemistry (ICHC 2011)*, Jaipur, December 10-13, **2011**.
2. Facile Access towards Alkylidene Cyclopentenes via Palladium Catalyzed Ring-Opening of Pentafulvene Derived Bicyclic Hydrazines. **Rajan, R.**; Radhakrishnan, K. V. *Recent Trends in Chemical Sciences: Frontiers and Challenges (RTCSFC 2011)*, University of Kerala, Trivandrum, August 25-26, **2011**.
3. Palladium catalyzed bisallylation of isoquinoline-DMAD derived 1,4-dipoles. Jijy, E.; Rajan, R.; and Radhakrishnan, K. V. *Recent Trends in Organic Synthesis (RTOS 2011)*, Bharathidasan University, Tiruchirappalli, February 24-26, **2011**.
4. Efforts towards the Synthesis and Lanthanide binding Studies of Mannose Based Neoglycoconjugates. **Rajan, R.**; Sajisha, V. S.; Radhakrishnan, K. V. *International Conference on Materials for the Millennium (MATCON 2010)*, CUSAT, Kochi, January 11-13, **2010**.

5. Facile and environmentally benign synthesis of 1,2-orthoesters of carbohydrates in ionic liquid [bmim]PF₆. Anas, S.; Sajisha, V. S.; **Rajan, R.**; Chacko, J. M.; Radhakrishnan, K. V., *Joint International Conference on Building Bridges, Forging Bonds for 21st Century Organic Chemistry and Chemical Biology (ACS-CSIR OCCB 2006)*, Pune, January, **2006**, P 005.
6. Synthesis of novel multifunctional triazabicyclic molecules as potential bicyclic templates for pharmaceutical ligands. Anas, S.; **Rajan, R.**; Radhakrishnan, K. V., *3rd International Conference on Current Trends in Drug Discovery Research (CTDDR 2007)*, Lucknow, February, **2007**, P 171.
7. Studies on the Synthetic Utility of the [6+3] Cycloaddition of Pentafulvenes with 3-Oxidopyrylium Betaines: Efficient Synthesis of Fused Ring Cyclooctanoids. Krishnan, K. S.; **Rajan, R.**; and Radhakrishnan, K. V. *3rd International Symposium on "Current Trends in Drug Discovery Research" (CTDDR-2007) held at CDRI, Lucknow during 17-21st February 2007.*