

Dr. Rajeev S. Menon

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Academic and Professional Background

Assistant Professor (Feb. 2016- Present)	Department of Chemistry, School of Chemical Sciences, Central University of Haryana, Mahendergarh, Haryana.
Ramanujan Fellow (Jan. 2012- Feb. 2016)	Medicinal Chemistry and Pharmacology Division, CSIR-Indian Institute of Chemical Technology, Hyderabad
Research Associate (Apr. 2011-Oct. 2011)	Organic Chemistry Section, CSIR-National Institute for Interdisciplinary Sciences and Technology. Trivandrum, Kerala.
Australian Research Council (ARC) post-doctoral fellow (Oct. 2007-Dec. 2010)	Research School of Chemistry, The Australian National University, Canberra, Australia. Research Supervisor: Professor Martin Banwell
Alexander von Humboldt post-doctoral fellow (Feb. 2006 - Aug. 2007)	The Institute for organic Chemistry, Technical University, Braunschweig, Germany. Research Supervisor: Professor Henning Hopf
Ph.D. (2001- 2005)in Organic Chemistry	CSIR-National Institute for Interdisciplinary Sciences and Technology. Trivandrum, Kerala. Degree awarded by from Kerala University, India, Supervisor: Dr. G. Vijay Nair.

Awards and Honours

- Best Researcher Award 2018 for Sciences, Central University of Haryana (2018)
 - Early Career Research Award, SERB-DST, India (2017)
 - Ramanujan Fellowship from SERB-DST, India (2012)
 - Australian Research Council (ARC) post-doctoral fellowship (2008)
 - Alexander von Humboldt post-doctoral fellowship (2005)
 - CSIR Senior Research Fellowship (2002)
 - CSIR Junior Research Fellowship (2000)
 - College medal for the best graduate student (1998)
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Areas of Expertise

- Organic Chemistry, Synthetic Methods and Total Synthesis
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Courses taught

- Structure, bonding and stereochemistry
 - Pericyclic and free radical reactions
 - Reagents and reactions
 - Retrosynthesis, synthetic planning and total synthesis
 - Medicinal chemistry
 - Organic chemistry laboratory
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Research Supervision

Completed Ph.D. supervision (at CSIR-IICT, Hyderabad)

Name of student	Title of Thesis	PhD awarded by
Prabhakar Ramchandra Joshi (2012-2018)	Novel benzannulation reactions for the construction of substituted biaryls and related transformations	AcSIR, New Delhi
Sridhar Undeela (2012-2018)	Allenyl sulfones, sulfonamides and gold catalysts: A recipe for the rapid assembly of various nitrogen heterocycles	AcSIR, New Delhi

Ongoing Ph.D. supervision (at Central University of Haryana)

Name of student	Research Topic	Registered at
Deepak Yadav (2016-)	Chemistry of Unsaturated Sulfones	Central University of Haryana
Priyanka Yadav (2017-)	Benzannulation Reactions	

Number of Masters Students Supervised: 15 (completed); 04 (ongoing)

Publications

Total number of journal articles published:	38
Book chapters:	2
Conference Proceedings:	7
Total citations:	2225
h-index:	22
i10-index:	30

(Source: Google scholar- <https://scholar.google.co.in/citations?user=oHjE3gIAAAAJ&hl=en>)

List of Publications

a. Book Chapters

1. Intramolecular 1,3-dipolar cycloadditions of alkenes, alkynes and allenes in *Comprehensive Organic Synthesis*, 2nd edition, **Menon, R. S.:** Nair, V., in: Gary A. Molander and Paul Knochel (eds.), *Comprehensive Organic Synthesis, 2nd edition*, Vol 4, Oxford: Elsevier; **2014**. pp.1281-1341.
2. Modifications of the Ugi Reaction, **Menon, R. S.:** Nair, V., in *Multicomponent Reactions I, Science of Synthesis*, Ed. T. J. J. Muller, Thieme Chemistry, **2014**, pp. 503-529.

b. As an Independent Investigator in Refereed International Journals

1. Gold-catalysed regioselective cascade cycloisomerisation reactions of aza-enediynes for the synthesis of substituted benzoisoquinoline derivatives; Undeela, S.; Chandra, R.; Nanubolu, J. B.; **Menon, R. S. *Org. Biomol. Chem.* 2019, 17, 369.**
2. Nucleophile-initiated Catalytic and Multicomponent Reactions; Nair, V.; **Menon, R. S. *Chem. Rec.* 2018, 18, 1.**
3. Facile synthesis of 1-benzoazepine derivatives *via* gold-catalyzed regioselective cycloisomerization reactions of *N*-(*o*-alkynylaryl)-*N*-vinyl sulfonamides; Undeela, S.; Ravikumar, G.; Nanubolu, J. B.; Singarapu, K. K.; **Menon, R. S. *Chem. Commun.* 2016, 52, 4824**
4. Novel oxygenative and dehydrogenative [3+3] benzannulation reactions of α,β -unsaturated aldehydes and γ -phosphonylcrotonates mediated by air: A regioselective synthesis of 4-hydroxybiaryl-2-carboxylates. Joshi, P. R.; Nanubolu, J. B.; **Menon, R. S. *Org. Lett.* 2016, 18, 752.**
5. Facile synthesis of 4*H*-chromene derivatives *via* base-mediated annulation of *ortho*-hydroxychalcones and 2-bromoallyl sulfones; Thadkapally, S.; Kunjachan, A. C. and **Menon, R. S. *Beilstein J. Org. Chem.* 2016, 12, 16.**
6. Base-mediated cyclocondensation of salicylaldehydes and 2-bromoallyl sulfones for the synthesis of 3-sulfonylchromene derivatives and their regioselective Friedel-Crafts heteroarylation reactions; Kumar, A.; Thadkapally, S and **Menon, R. S. *J. Org. Chem.* 2015, 80, 11048.**
7. Catalyst-controlled divergence in cycloisomerisation reactions of *N*-propargyl-*N*-vinylsulfonamides: gold-catalysed synthesis of 2-sulfonylmethyl pyrroles and dihydropyridines, Undeela, S.; Thadkapally, S.; Nanubolu, J. B.; Singarapu, K. K.; **Menon, R. S. *Chem. Commun.* 2015, 51, 13748 (Highlighted on the journal cover).**
8. Regioselective Synthesis of Substituted Arenes *via* Aerobic Oxidative [3+3] Benzannulation Reactions of α,β -Unsaturated Aldehydes and Ketones, Joshi, P. R.; Undeela, S.; Reddy, D. D.; Singarapu, K. K.; **Menon, R. S. *Org. Lett.* 2015, 17, 1449.**
9. A Convenient Synthesis of 2-Substituted Benzofurans from Salicylaldehydes, Reddy, S.; Thadkapally, S.; Mamidyala, M.; Nanubolu, J. B.; **Menon, R. S. *RSC Advances* 2015, 5, 8199.**
10. A sequential synthesis of substituted furans from aryl alkynes and ketones involving a cerium(IV) ammonium nitrate (CAN)-mediated oxidative cyclisation. Undeela, S.; Ramchandra, J, P.; **Menon, R. S. *Tetrahedron Lett.* 2014, 55, 5667.**

c. As co-author

11. An Uncommon Multicomponent Reaction Involving Nucleophilic Heterocyclic carbenes: Facile Synthesis of Fully Substituted Cyclopentanones, Krishnan, J.; Jose, A.; Sasidhar, B. S.; Suresh, E.; **Menon, R. S.**; Nair, V. *Org. Chem. Front.* **2018**, *5*, 1202.
12. Recent advances in N-heterocyclic carbene (NHC)-catalysed benzoin reactions; Menon, R. S.; Biju, A. T.; Nair, V. *Beilstein J. Org. Chem.* **2016**, *12*, 444.
13. Recent advances in employing homoenolates generated by N-heterocyclic carbene (NHC) catalysis in carbon-carbon bond-forming reactions, Menon, R. S.; Biju, A. T.; Nair, V. *Chem. Soc. Rev.* **2015**, *44*, 5040.
14. Phosphine Mediated Reaction of Cyclic 1,2-Diones and 3-Alkyl Allenolates: An Efficient Protocol for Benzannulation Applicable to the Synthesis of Polycyclic Aromatic Hydrocarbons, Jose, A.; Jayakrishnan, A. J.; Vedhanarayana, B.; **Menon, R. S.**; Varughese, S.; Suresh, E.; Nair, V. *Chem. Commun.* **2014**, *50*, 4616.
15. 1,2-Benzoquinones in Diels-Alder reactions, dipolar cycloadditions, nucleophilic additions, multicomponent reactions and more. Nair, V.; **Menon, R. S.**; Biju, A. T.; Abhilash, K. G. *Chem. Soc. Rev.* **2012**, *41*, 1050.
16. Employing Homo-enolates Generated by NHC Catalysis in Carbon-Carbon Bond-Forming Reactions: State of the Art. Nair, V.; **Menon, R. S.** Biju A. T., Sinu, C. R.; Paul, R. R.; Jose, A. and Sreekumar, V. *Chem. Soc. Rev.* **2011**, *40*, 5336.
17. N-Heterocyclic carbene catalyzed annulation of enals and vinyl ketones: A novel synthesis of [2H]-pyranones. Nair, V.; Paul, R. R.; Seetha, L. K. C.; **Menon, R. S.**; Jose, A.; Sinu, C. R. *Tetrahedron Lett.* **2011**, *52*, 5992.
18. Perhydroazulenes-A New Class of Liquid Crystalline Materials. Hopf, H.; Hussain, Z.; **Menon, R. S.**; Raev, V.; Jones, P. G.; Pohl, L. M. *Synlett* **2011**, 1273.
19. New Methods for the Synthesis of Certain Alkaloids and Terpenoids. Banwell, M. G.; Lehmann, A. L.; **Menon, R. S.**; Willis, A. C. *Pure and Appl. Chem.* **2011**, *83*, 411.
20. Total syntheses of furanosesquiterpenes Crassifolone and Dihydrocrassifolone via a Au(I)-catalysed intramolecular Michael addition reaction. **Menon, R. S.** and Banwell, M. G. *Org. Biomol. Chem.* **2010**, *8*, 5483 (**Article advertised on front cover of the Journal**).
21. NHC-catalyzed transformation of aromatic aldehydes to acids by carbon dioxide: An unexpected reaction. Nair, V.; Varghese, V.; Paul, R. R.; Jose, A.; Sinu, C. R.; **Menon, R. S.** *Org. Lett.* **2010**, *12*, 2653.
22. Mild and Convenient Hydroarylation Reactions catalyzed by a Gold(I) complex: Efficient Syntheses of Chromenes, Benzofurans, Coumarins and Dihydroquinolines. **Menon, R. S.**; Findlay, A. D.; Bissember, A. C.; Banwell, M. G. *J. Org. Chem.* **2009**, *74*, 8901.
23. Engaging Zwitterions in Carbon-carbon and Carbon-nitrogen Bond-forming Reactions: A Promising Synthetic Strategy. Nair, V.; **Menon, R. S.**; Sreekanth, A. R.; Abhilash, N.; Biju, A. T. *Acc. Chem. Res.* **2006**, *39*, 520.
24. Asymmetric Synthesis of Quinine: A Landmark in Organic Synthesis. Nair, V.; **Menon, R. S.**; Sreekumar, V. *Natural Product Communications* **2006**, *1*, 899.
25. The reaction of diaryl-1,2-diones with triphenylphosphine and diethyl azodicarboxylate leading to N,N-dicarboethoxymonohydrazones via a novel rearrangement. Nair, V.; Biju, A. T.; Abhilash, K. G.; **Menon, R. S.**; Suresh, E. *Org. Lett.* **2005**, *7*, 2121.

26. A Pyridine-catalyzed Addition of Diaryl-1,2-diones to Dimethyl Butynedioate Leading to the Formation of 1,2-Diaroyl Dimethyl Maleates *via* an Unprecedented Rearrangement. Nair, V.; Pillai, A. N.; **Menon, R. S.**; Suresh, E. *Org. Lett.***2005**, *7*, 1189.
27. Multicomponent Reactions Based on Nucleophilic Carbenes and their Applications in Organic Synthesis. Nair, V.; **Menon, R. S.**; Sreekumar, V. *Pure and Appl. Chem.* **2005**, *77*, 1191.
28. One-pot Four-component Reaction of Isocyanides, Dimethyl Acetylenedicarboxylate and Cyclobutene-1,2-diones: Synthesis of Novel Spiroheterocycles. Nair, V.; **Menon, R. S.**; Deepthi, A.; Devi, B. R.; Biju, A. T. *Tetrahedron Letters***2005**, *46*, 1337.
29. A Novel Multicomponent Reaction Involving Isocyanide, Dimethyl Acetylenedicarboxylate (DMAD), and Electrophilic Styrenes: Facile Synthesis of Highly Substituted Cyclopentadienes. Nair, V.; **Menon, R. S.**; Beneesh, P. B.; Sreekumar, V.; Bindu, S. *Org. Lett.***2004**, *6*, 767.
30. Novel Pyridine Catalyzed Reaction of Dimethyl Acetylenedicarboxylate (DMAD) and Arylidene malononitriles: A Stereoselective Synthesis of Highly Substituted Buta-1,3-dienes. Nair, V.; Remadevi, B.; Vidya, N.; **Menon, R. S.**; Abhilash, N.; Rath, N. P. *Tetrahedron Lett.***2004**, *45*, 3203.
31. The Multicomponent Reaction of Dimethoxycarbene, Dimethyl Butynedioate and Electrophilic Styrenes: An Unprecedented Synthesis of Highly Substituted Cyclopentenone Acetals. Nair, V.; Beneesh, P. B.; Sreekumar, V.; Bindu, S.; **Menon, R. S.** *Tetrahedron Lett.***2004**, *45*, 201.
32. Multicomponent Reactions Involving Zwitterionic Intermediates for the Construction of Heterocyclic Systems: One-pot Synthesis of Aminofurans and Iminolactones. Nair, V.; Vinod, A. U.; N. Abhilash.; **Menon, R. S.**; Santhi, V.; Varma, L. R.; Viji, S.; Mathew, S.; Srinivas, R. *Tetrahedron*,**2003**, *59*, 10279.
33. Novel Pyridine Catalyzed Reaction of Dimethyl Acetylenedicarboxylate with Aldehydes and *N*-tosylimines: Efficient Synthesis of 2-Benzoyl fumarates and 1-Azadienes. Nair, V.; Sreekanth, A. R.; Abhilash, N.; Biju, A. T.; Remadevi, B.; **Menon, R. S.**; Rath, N. P.; Srinivas, R. *Synthesis***2003**, 1895.
34. [4+1] Cycloaddition Reactions of *o*-Thioquinones with Isocyanides: Novel Synthesis of 2-Imino-1,3-Oxathioles. Nair, V.; Mathew, B.; Vinod, A. U.; Mathen, J. S.; Ros, S.; **Menon, R. S.**; Varma, L. R.; Srinivas, R.; *Synthesis* **2003**, 662.
35. Oxidative Intramolecular Cyclization Reactions of Cinnamyl Ethers Mediated by Cerium (IV) Ammonium Nitrate (CAN): A Stereoselective Synthesis of 3,4-*trans*-Disubstituted Tetrahydrofuran Derivatives. Nair, V.; Balagopal, L.; **Menon, R.S.**; Ros, S.; Srinivas, R. *Arkivoc*, **2003**, 199.
36. [4+2] Cycloaddition Reactions of *o*-Thioquinones with Pentafulvenes: Efficient Synthesis of Benzothiazines. Nair, V.; Mathew, B.; **Menon, R. S.**; Mathew, S.; Vairamani, M. *Tetrahedron* **2002**, *58*, 3235.
37. An Efficient Multicomponent Reaction Involving the Interception of the Zwitterionic Intermediate between DMAD and Isocyanides with Some Active Methylene Compounds. Nair, V.; Vinod, A. U.; Ramesh, R.; **Menon, R. S.**; Varma, R. L.; Mathew, S.; Chiaroni, A. *Heterocycles* **2002**, *58*, 147.
38. A Facile Three-component Reaction Involving [4+1] Cycloadditions Leading to Furan Annulated Heterocycles. Nair, V.; **Menon, R. S.**; Vinod, A. U.; Viji, S. *Tetrahedron Lett.***2002**, *43*, 2293.

Sponsored Research Projects

- 1) **Early Career Research Award** granted by **DST-SERB**. Titled *Exploiting the synthetic potential of unsaturated sulfones in heterocyclic construction and alkaloid synthesis*, worth Rs. 48 Lakhs, 3 Years **(2017-20, ongoing)**
- 2) **Ramanujan Fellowship Research Grant** awarded by **SERB-DST, India**, January 2012 worth **31 Lakhs. (2012-17, 5 years, completed)**
- 3) **Fast track project** titled "*Development of Novel Gold-catalysed Carbon-carbon Bond Forming Reactions and Rearrangements*" awarded by **SERB-DST, India** worth **Rs. 16.36 Lakhs (2012-15, completed)**.