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GURU BRAHAMAM RAMANI

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PROFILE AND OBJECTIVE

Doctor of experimental organic chemistry with more than five years postdoctoral research experience. An independent and ambitious researcher with high motivation for research and academic activities. Keen to publish and review research work in the field of asymmetric synthesis, alkyne/allene chemistry and hypervalent iodine chemistry.

PROFESSIONAL EXPERIENCE AND EDUCATION



भारतीय प्रौद्योगिकी
संस्थान जम्मू
INDIAN INSTITUTE OF
TECHNOLOGY JAMMU

Assistant Professor

Oct 2019 – till date

A regular faculty member at department of chemistry, Indian Institute of Technology Jammu, Jammu, Jammu and Kashmir, India.

Syngene

A Biocon company

Senior Research Investigator

May 2019 – Sep 2019

Syngene International Ltd., Biocon park, Electronic city, Bangalore.

Successfully completed a CRO project and the delivery was synthesized in more than 40 steps at Dr. Jeya Prakash's group.



Stockholm
University

Postdoctoral Fellow

Mar 2017 – Mar 2019

Department of Organic Chemistry, Arrhenius Laboratory, Stockholm University, Stockholm, Sweden.

Project topic: Synergistic organo-metal catalysis for asymmetric alkynylations and alkenylations using hypervalent iodine reagents.



Postdoctoral Fellow

Sep 2013 – Jan 2017

Department of Chemistry, National Taiwan Normal University, Taipei, Taiwan.

Project topic: Kinetic resolution and asymmetric organocatalysis.



Research Assistant

Apr 2013 – Aug 2013

School of Chemistry, University of Hyderabad, Hyderabad, India.

Project topic: Application of chiral allenes in cycloaddition reactions:

An axial chirality transformation to centre chirality

Doctorate of Philosophy, Ph.D.

July 2006 – Mar 2013

School of Chemistry, University of Hyderabad, Hyderabad, India.

Supervisor: Prof. Mariappan Periasamy

Thesis title: Synthesis of chiral C₁- and C₂-symmetric nitrogen and sulfur heterocycles for application in asymmetric transformations.

Master of Science in Chemistry

2004 - 2006

School of Chemistry, University of Hyderabad, Hyderabad, India.

SUPERVISION, LEADERSHIP AND ADMINISTRATION

- Graduate students: Akashdeep Sharma (2020 Aug, CSIR-JRF); Paru Jamwal (2021 Sep, UGC-JRF); Himani Vaid (2021 Sep, JRF); Kavita Devi (2023 June, JRF).
- Under-graduate students: Riya Kotwal (2022), Priyanka Sharma (2022).
- Anz Hostel Warden and DPGC.

CONFERENCES

- Presented a poster in the “Junior National Organic Trust Conference” held at School of Chemistry, University of Hyderabad, Hyderabad, 28th to 31st January 2011; Title: Convenient methods for synthesis of C₂-symmetric tetrahydrothiophenes.
- Attended several scientific lectures delivered by world class renowned group leaders at Hyderabad, Taipei and Stockholm.

SCHOLARSHIPS AND AWARDS

- Wenner-Gren Foundation postdoctoral fellowship, Sweden (Mar 2017- present)
- Ministry of Science and Technology (MOST)-Taiwan, PDF (Sep 2013 – Jan 2017)
- Council of Scientific and Industrial Research (CSIR)-India, RA (Apr-Aug 2013).
- CSIR PhD fellowship from August 2006-July 2011
- Recipient of *Dr. Reddy's Spirit of Excellence Award* for the year 2004-2005
- All INDIA 6th rank-M.Sc. Entrance-2004-University of Hyderabad, Hyderabad, India.
- All INDIA 7th rank-M.Sc. Entrance-2004-Pondicherry Central University, India.
- A.P. State 7th rank-M.Sc. Entrance-2004-Osmania University, Hyderabad, India.

MARKS or CGPA

B.Sc. (Maths, Physics, Chemistry)	Acharya Nagarjuna University	2001-2004	88.1%
Intermediate (M.P.C)	Acharya Nagarjuna University	1999-2001	87.8%
SSC	Govt. Ashram High School	1998-1999	84.0%

PUBLICATIONS, REVIEWS AND PATENTS

- 1. Doyle–Kirmse Reaction on Alkynyl Hydrazone Carboxylates: Synthesis of 1,4-Allenynes and 1,5-Enynes Thioaryl Carboxylates**
Vaid, H.; Sharma, A.; Jamwal, P.; Sharma, P.; Gurubrahamam, R.* *Manuscript is submitted.*
- 2. Synthesis of Tetrasubstituted 1,4-Dicarbonyl (Z)-2,3-Dihaloalkenes via Electrophilic Halogenation of Alkynyl Hydrazones**
Jamwal, P.;[†] Sharma, A.;[†] Gurubrahamam, R.* *Org. Lett.* **2023**, 25, 7236-7241.
- 3. Decomposition of Alkynyl Hydrazones: Synthesis of Allenates, Dihaloallenes, and Angularly Fused Tricyclic Azepines.**
Jamwal, P.;[†] Sharma, A.;[†] Gurubrahamam, R.* *Org. Lett.* **2023**, 25, 6607-6612.
- 4. Synthesis of Alkynyl Hydrazones from Unprotected Hydrazine and Their Reactivity as Diazo Precursors.**
Sharma, A.; Jamwal, P.; Vaid, H.; Gurubrahamam, R.* *Org. Lett.* **2023**, 25, 1889-1894.
- 5. Formal Alkenylation and Amination of 2-Nitrobenzofurans with Fumaric Acid Amide Ester under Metal-Free Conditions.**
Rao, G. A.; Jamwal, P.; Gurubrahamam, R.;* Chen, K.* *ChemistrySelect*, **2023**, 8, e202204467.
- 6. Asymmetric Organocatalytic Reactions of Activated Racemic Allenes**
Jamwal, P.; Vaid, H.; Chen, K.;* Gurubrahamam, R.* *Asian J. Org. Chem.* **2022**, 11, e202200622.
- 7. Base-Catalysed [4+2]-Annulation Between 2-Nitrobenzofurans and N-Alkoxyacrylamides: Synthesis of [3,2-b]Benzofuropyridinones.**
Rao, G. A.; Gurubrahamam, R.;* Chen, K.* *Eur. J. Org. Chem.* **2022**, e202200657.
- 8. Asymmetric organocatalysis of activated alkynes and enynes.**
Sharma, A.; Nagaraju, K.; Rao, G. A.; Gurubrahamam, R.;* Chen, K.* *Asian J. Org. Chem.* **2021**, 10, 1567-1579.
- 9. Enantioselective aza-Friedel-Crafts Reaction of Heteroarenes with in situ Generated Isoxazolium Ions via Chiral Phosphoric Acid Catalysis.**
Cheng, Y.-S.; S.-H. Chan; Rao, G. A.; Gurubrahamam, R.;* Chen, K.* *Adv. Synth. Catal.*, **2021**, 363, 3502-3506.
- 10. Enantioselective organocatalytic synthesis of δ -lactone-fused 4-chromanones.**
Lai, Y.-T.; Nagaraju, K.; Gurubrahamam, R.;* Chen, K.* *Adv. Synth. Catal.*, **2020**, 362, 3846-3850.
- 11. Organocatalytic diastereoselective synthesis of diazoaryl-benzo[b]azepine derivatives.**
Nagaraju, K.; Gurubrahamam, R.; Chen, K.* *J. Org. Chem.* **2020**, 85, 7060-7067.

- 12. An unprecedented organocascade synthesis of functionalized bicyclic nitrones from 2-aminomalonate derived nucleophiles and 1-nitro-1,3-enynes via allenes formation and subsequent rearrangement.**
Huang, W.-Y.; Gurubrahamam, R.; Chen, K.* *Adv. Synth. Catal.*, **2019**, 361, 170-175.
- 13. Organocatalytic synthesis of densely functionalized oxa-bridged 2,6-epoxybenzo[b][1,5]oxazocine heterocycles.**
Gurubrahamam, R.;[‡] Nagaraju, K.;[‡] Chen, K.* *Chem. Commun.* **2018**, 54, 6048-6051.
- 14. Synthesis of phenols and aryl silyl ethers via arylation of complimentary hydroxide surrogates.**
Reitti, M.; Gurubrahamam, R.; Walther, M.; Lindstedt, E.; Olofsson, B.* *Org. Lett.* **2018**, 20, 1785-1788.
- 15. Diastereoselective synthesis of functionalized angularly fused tricycles via an organocatalytic quadruple reaction sequence.**
Chang, F.-J.; Gurubrahamam, R.; Chen, K.* *Adv. Synth. Catal.*, **2017**, 359, 1277-1282.
- 16. Preparation method of chiral multiple substituted tetrahydropyran.**
Chen, K.*; Gurubrahamam, R.; Cheng, Y.-S. *U.S. Patent Application* US 2016/0355495 A1 (Dec. 8, **2016**) (*patent*).
- 17. Organocascade synthesis of annulated (Z)-2-methylene pyrans: Nucleophilic conjugate addition of hydroxy coumarins and pyranone to branched nitroenynes via in situ allene formation/oxa-Michael cyclization/alkene isomerization sequence.**
Gurubrahamam, R.; Gao, B.-F.; Chen, Y. M.; Chan, Y.-T.; Tsai, M.-K.,* Chen, K.* *Org. Lett.* **2016**, 18, 3098-3101.
- 18. Dihydrooxazine N-oxide intermediates as resting states in organocatalytic kinetic resolution of functionalised nitroallylic amines with aldehydes.**
Gurubrahamam, R.; Chen, Y. M.; Huang, W.-Y.; Chan, Y.-T.; Chang, H.-K.; Tsai, M.-K.,* Chen, K.* *Org. Lett.* **2016**, 18, 3046-3049.
- 19. Recent advances in organocatalytic kinetic resolution (OCKR) for the synthesis of functionalized products.**
Gurubrahamam, R.;[‡] Cheng, Y.-S.;[‡] Huang, W.-Y.; Chen, K.* *ChemCatChem*, **2016**, 8, 86-96 (*invited review article*).
- 20. Control of five contiguous stereogenic centers in an organocatalytic kinetic resolution via michael/acetalization sequence: Synthesis of fully substituted tetrahydropyrans.**
Gurubrahamam, R.; Cheng, Y.-S.; Chen, K.* *Org. Lett.* **2015**, 17, 430-433.
- 21. Enantioselective synthesis of functionalized polycarbocycles via a three-component organocascade quadruple reaction.**
Chang, Y.-P.; Gurubrahamam, R.; Chen, K.* *Org. Lett.* **2015**, 17, 2908-2911.
- 22. Rauhut-Currier-initiated organocascade reaction: synthesis of substituted dispirocyclohexanes through [2+2+2] strategy between 2-arylideneindan-1,3-diones and activated alkenes.**

- Zhang, Y.-Y.; Gurubrahamam, R.; Chen, K.* *Adv. Synth. Catal.*, **2015**, 357, 2457-463.
- 23. Organocatalytic kinetic resolution of racemic secondary nitroallylic alcohols combined with simultaneous desymmetrization of prochiral cyclic anhydrides.**
Roy, S.; Chen, K.-F.; Gurubrahamam, R.; Chen, K.* *J. Org. Chem.* **2014**, 79, 8955-8959.
- 24. Convenient methods for synthesis of chiral amino alcohols and amines.**
Periasamy, M.;* Gurubrahamam, R. *et. al. Chimia* **2013**, 67, 23-29 (invited review article as part of chemistry in India).
- 25. Methods for synthesis of chiral sulfur heterocycles and their application in asymmetric Baylis Hillman reaction.**
Periasamy, M.;* Gurubrahamam, R.; Muthukumaragopal, G. P. *Tetrahedron: Asymmetry* **2013**, 24, 568-574.
- 26. Copper (I) halide promoted diastereoselective synthesis of chiral propargylamines and chiral allenes using 2-dialkylaminomethylpyrrolidine, aldehydes and 1-alkynes.**
Gurubrahamam, R.; Periasamy, M.* *J. Org. Chem.* **2013**, 78, 1463-1470.
- 27. Highly enantioselective synthesis of chiral allenes by sequential creation of asymmetric center and chirality transfer in a single pot operation.**
Periasamy, M.;* Sanjeevakumar, N.; Dalai, M.; Gurubrahamam, R.; Reddy, P. O. *Org. Lett.* **2012**, 14, 2932-2935.
- 28. Convenient methods for synthesis of C₂-symmetric tetrahydrothiophenes.**
Periasamy, M.;* Ramani, G; Muthukumaragopal, G. P. *Synthesis* **2009**, 1739-1743.

Research groups with worked		
Prof. Berit Olofsson Dept. of Organic Chemistry Stockholm University, Stockholm-106 91, Sweden. E-mail: berit.olofsson@su.se	Prof. M. Periasamy School of Chemistry University of Hyderabad Hyderabad-500046, India. E-mail: mpsc@uohyd.ac.in	Prof. K. Chen Dept. of Chemistry National Taiwan Normal Univ., Taipei, Taiwan. Email: kchen@ntnu.edu.tw