

Curriculum vitae
Pazhamalai Anbarasan

Department of Chemistry
Indian Institute of Technology Madras
Chennai, TN 600 036, India
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E-mail : anbarasansp@iitm.ac.in

Personal:

Date of Birth : 3rd June 1982
Sex : Male
Marital status : Married
Nationality : Indian

Professional Experience:

- July 2016-present** ***Associate Professor***
Department of Chemistry
Indian Institute of Technology Madras
Chennai, India
- Dec 2011-July 2016** ***Assistant Professor***
Department of Chemistry
Indian Institute of Technology Madras
Chennai, India
- Dec 2010-Nov 2011** ***Postdoctoral Fellow*** with Prof. F. Dean Toste
Department of Chemistry
University of California, Berkeley
Berkeley, USA
- July 2008-Nov 2010** ***Postdoctoral Fellow*** with Prof. Dr. Matthias Beller
(Alexander-von-Humboldt fellow)
Leibniz-Institut für Katalyse e. V.
Rostock, Germany
- Aug 2007-June 2008** ***Research Associate*** with Prof. K. R. Prasad
Indian Institute of Science, Bangalore, India

Academic profile:

- 2004- 2007** ***Doctor of Philosophy*** with Prof. K. R. Prasad
Department of Organic Chemistry
Indian Institute of Science, Bangalore, India
Thesis title: *Enantioselective synthesis of bio-active bicyclic acetals, cyclic ethers and lactones*
- 2002-2004** ***Master of Science (Chemistry)***
Madurai Kamaraj University
School of Chemistry, Madurai, India
- 1999-2002** ***Bachelor of Science (Chemistry)***
Periyar Arts College (University of Madras)
Cuddalore, India

Awards & Fellowships:

- *Institute Research & Development Awards (IRDA) – 2015-2016*, Indian Institute of Technology Madras
- *Young Scientist Medal-2015*, Indian National Science Academy (INSA)
- *Young Associate-2015*, Indian Academy of Sciences (IAS)
- *Thieme Chemistry Journals Award – 2013*
- *DAE-BRNS Young Scientist Research Award*
- *Post-doctoral fellowship* from Energy Biosciences Institute, Berkeley (Dec 2010-Nov-2011)
- *Post-doctoral fellowship* from Leibniz Society, Germany (Sep 2010-Nov 2010)
- *Alexander-von-Humboldt fellowship*, Germany (July 2008-Aug 2010)
- Received *Guha research medal* for the best Ph. D. thesis of the year in the Department of Organic Chemistry (2007-2008)
- *Research Associate Fellowship* by Indian Institute of Science, Bangalore (Aug 2007-June 2008)
- *Senior Research Fellowship* by Council of Scientific and Industrial Research, India (Jan 2007-July 2007)
- Awarded *Junior Research Fellowship* by Council of Scientific and Industrial Research (CSIR), India (Jan 2005-Dec 2006), one among *the top 20% of the students qualified in CSIR-JRF*
- *Junior Research Fellowship* by Indian Institute of Science, Bangalore (Aug 2004-Dec 2005)

- Secured *all India 8th rank with 99.76 percentile score* in Graduate Aptitude Test in Engineering (*GATE-2004*)
- Received *Prof. C. Natarajan endowment gold medal* in inorganic chemistry at university level (Apr 2004)
- Awarded *Dr. T. P. Meenakshisundaram endowment prize* in Master of Science (Chemistry) at university level (Apr 2004)
- Awarded *Maveeran Sundaralingam endowment scholarship* in Master of Science (Chemistry, 2003-2004)
- Stood First in Bachelor of Science at College level

List of Publications:

From IIT Madras:

44. Rhodium Catalyzed Diastereoselective Synthesis of 2,2,3,3-Tetrasubstituted Indolines from *N*-Sulfonyl-1,2,3-Triazoles and *ortho*-Vinylanilines: D. Yadagiri, A. C. S. Reddy, P. Anbarasan; *Chem. Sci.* **2016**, DOI:10.1039/C6SC01075J.
43. Palladium Catalyzed Aerobic Oxidative Cyclization of *ortho*-Vinylanilines with Isocyanides: A. C. S. Reddy, P. Anbarasan; *Proc. Indian Nat. Sci. Acad.* **2016**, Accepted for publication. (Invited Article)
42. Copper-catalysed synthesis of trifluoromethyl(hetero)arenes from di(hetero)aryl- λ^3 -iodanes: V. K. Pandey, P. Anbarasan; *RSC Adv.* **2016**, 6, 18525.
41. One-Pot Aminoethylation of Indoles/Pyrroles with Alkynes and Sulfonyl Azides: S. Rajasekar, D. Yadagiri, P. Anbarasan; *Chem. Eur. J.* **2015**, 21, 17079.
40. Copper Catalyzed Trifluoromethylthiolation of Di(hetero)aryl- λ^3 -iodanes: Mechanistic Insight and Application to Synthesis of (Hetero)Aryl Trifluoromethyl Sulfides; P. Saravanan, P. Anbarasan; *Adv. Synth. Catal.* **2015**, 357, 3435.
39. Iodine(III) Mediated Oxidative Rearrangement of Enamines: Efficient Synthesis of α -Amino Ketones: D. Yadagiri, P. Anbarasan; *Chem. Commun.* **2015**, 51, 14203.
38. Rhodium Catalyzed Cyanation of C(sp^2)-H Bond of Alkenes: M. Chaitanya, P. Anbarasan; *Org. Lett.* **2015**, 17, 3766.
37. Tandem 1,2-Sulfur Migration and (Aza)-Diels-Alder Reaction of β -Thio- α -Diazoimines: Rhodium Catalyzed Synthesis of (Fused)-Polyhydropyridines, and Cyclohexenes: D. Yadagiri, P. Anbarasan; *Chem. Sci.* **2015**, 6, 5847.
36. Rhodium Catalyzed C2-Selective Cyanation of Indoles and Pyrroles: M. Chaitanya, P. Anbarasan; *J. Org. Chem.* **2015**, 80, 3695.
35. Rhodium Catalysed Direct Arylation of Diazo Compounds with Aryl Boronic Acids: Synthesis of Diarylmethine Derivatives: J. Ghorai, P. Anbarasan; *J. Org. Chem.* **2015**, 80, 3455.

34. Production of an acetone-butanol-ethanol mixture from *Clostridium acetobutylicum* and its conversion to high-value biofuels: S. Sreekumar, Z. C. Baer, **A. Pazhamalai**, G. Gunbas, A. Grippo, H. W. Blanch, D. S. Clark, F. D. Toste; *Nature Protocols* **2015**, *10*, 528.
33. Recent Advances in Transition Metal Catalyzed Denitrogenative Transformation of 1,2,3-Triazoles and Related Compounds: **P. Anbarasan**, D. Yadagiri, S. Rajasekar; *Synthesis* **2014**, *46*, 3004. (*invited review*)
32. Rhodium catalyzed transannulation of 1,2,3-triazoles to polysubstituted pyrroles: S. Rajasekar; **P. Anbarasan**; *J. Org. Chem.* **2014**, *79*, 8428.
31. Rhodium catalyzed direct arylation of α -diazoimines: D. Yadagiri, **P. Anbarasan**; *Org. Lett.* **2014**, *16*, 2510.
30. One-pot cascade trifluoromethylation/cyclization of imides: Synthesis of α -trifluoromethylated amine derivatives: V. K. Pandey, **P. Anbarasan**; *J. Org. Chem.* **2014**, *79*, 4154.
29. Palladium catalyzed aryl(alkyl)thiolation of unactivated arenes: P. Saravanan, **P. Anbarasan**; *Org. Lett.* **2014**, *16*, 848.
28. Rhodium catalyzed cyanation of chelation assisted C-H bonds: M. Chaitanya, D. Yadagiri, **P. Anbarasan**; *Org. Lett.* **2013**, *15*, 4960.
27. Rhodium-catalyzed denitrogenative [2,3]-sigmatropic rearrangement: An efficient entry to sulfur containing quaternary center: D. Yadagiri, **P. Anbarasan**; *Chem. Eur. J.* **2013**, *45*, 15115.

From Ph.D and Postdoc:

26. A well-defined iron catalyst for improved hydrogenation of carbon dioxide and bicarbonate: C. Ziebart, C. Federsel, **P. Anbarasan**, R. Jackstell, W. Baumann, A. Spannenberg, M. Beller; *J. Am. Chem. Soc.* **2012**, *134*, 20701.
25. Integration of chemical catalysis with extractive fermentation to produce fungible fuels: **P. Anbarasan**, Z. C. Baer, S. Sreekumar, E. Gross, J. B. Binder, H. W. Blanch, D. S. Clark, F. D. Toste; *Nature* **2012**, *491*, 235.
24. Recent development and perspectives in the palladium-catalyzed cyanation of Aryl-X derivatives: synthesis of benzonitriles: **P. Anbarasan**, T. Schareina, M. Beller; *Chem. Soc. Rev.* **2011**, *40*, 5049 (*invited review*).
23. A general cyclocarbonylation of aryl bromides and triflates with acetylenes: palladium-catalyzed synthesis of 3-alkylidenefuran-2-ones: X.-F. Wu, B. Sundararaju, **P. Anbarasan**, H. Neumann, P. H. Dixneuf, M. Beller; *Chem. Eur. J.* **2011**, *17*, 8014.
22. A novel and convenient synthesis of benzonitriles: electrophilic cyanation of aryl and heteroaryl bromides: **P. Anbarasan**, H. Neumann, M. Beller; *Chem. Eur. J.* **2011**, *17*, 4217. (Selected as *VIP* and Highlighted in the “cover page”).

21. Novel C–H functionalization of arenes: palladium-catalyzed synthesis of diaryl sulfides: **P. Anbarasan**, H. Neumann, M. Beller; *Chem. Commun.* **2011**, 47, 3233.
20. A general rhodium-catalyzed cyanation of aryl and alkenylboronic Acids: **P. Anbarasan**, H. Neumann, M. Beller; *Angew. Chem. Int. Ed.* **2011**, 50, 519.
19. From noble metal to nobel prize: palladium-catalyzed coupling reactions as key technologies in organic synthesis: X.-F. Wu, **P. Anbarasan**, H. Neumann, M. Beller; *Angew. Chem. Int. Ed.* **2010**, 49, 9047.
18. Palladium-catalyzed carbonylative C-H activation of heteroarenes: X.-F. Wu, **P. Anbarasan**, H. Neumann, M. Beller; *Angew. Chem. Int. Ed.* **2010**, 49, 7316 (“Hot Paper”).
17. A general and efficient catalyst for palladium-catalyzed C–O coupling reactions of aryl halides with primary alcohols: S. Gowrisankar, A. G. Sergeev, **P. Anbarasan**, A. Spannenberg, H. Neumann, M. Beller; *J. Am. Chem. Soc.* **2010**, 132, 11592.
16. A new and practical Grignard-coupling-fluorination sequence: synthesis of 2-aryl-fluoroarenes: **P. Anbarasan**, H. Neumann, M. Beller; *Chem. Asian J.* **2010**, 5, 1775.
15. A convenient synthesis of benzonitriles *via* electrophilic cyanation with *N*-cyanobenzimidazole: **P. Anbarasan**, H. Neumann, M. Beller; *Chem. Eur. J.* **2010**, 16, 4725.
14. Efficient synthesis of aryl fluorides: **P. Anbarasan**, H. Neumann, M. Beller; *Angew. Chem. Int. Ed.* **2010**, 49, 2219 (“Hot Paper”; highlighted in “Synfacts”; one of the *most accessed articles* in 8/2009–7/2010).
13. Stereoselective synthesis of (–)-6-acetoxyhexadecanolide: a mosquito oviposition attractant pheromone: K. R. Prasad, **P. Anbarasan**; *Tetrahedron: Asymmetry* **2007**, 18, 2479.
12. Enantioselective synthesis of α -benzyloxy- ω -alkenals: application to the synthesis of (+)-*exo*-brevicomin, (+)-*iso-exo*-brevicomin, and (–)-isolaurepan: K. R. Prasad, **P. Anbarasan**; *Tetrahedron: Asymmetry* **2007**, 18, 1419.
11. Enantiodivergent synthesis of both enantiomers of gypsy moth pheromone disparlure: K. R. Prasad, **P. Anbarasan**; *J. Org. Chem.* **2007**, 72, 3155.
10. Stereoselective synthesis of (–)-microcarpalide: K. R. Prasad, K. Penchalaiah, A. Choudhary, **P. Anbarasan**; *Tetrahedron Lett.* **2007**, 48, 309.
9. Stereoselective formal synthesis of (–)-centrolobine: K. R. Prasad, **P. Anbarasan**; *Tetrahedron* **2007**, 63, 1089.
8. Enantiospecific synthesis of (–)-muricatacin from L-(+)-tartaric acid: K. R. Prasad, **P. Anbarasan**; *Tetrahedron: Asymmetry* **2006**, 17, 2465.
7. An expeditious enantiospecific synthesis of (+)-2-hydroxy-*exo*-brevicomin: K. R. Prasad, **P. Anbarasan**; *Synlett* **2006**, 2087.

6. Enantiodivergent synthesis of both antipodes of hydroxy-*exo*-brevicommin from L-(+)-tartaric acid: K. R. Prasad, **P. Anbarasan**; *Tetrahedron* **2006**, *62*, 8303.
5. Asymmetric synthesis of both enantiomers of α -methyl- α -methoxyphenylacetic acid from L-(+)-tartaric acid: formal enantioselective synthesis of insect pheromone (-)-frontalin: K. R. Prasad, A. Chandrakumar, **P. Anbarasan**; *Tetrahedron: Asymmetry* **2006**, *17*, 1979.
4. Stereoselective synthesis of (+)-boronolide and (-)-5-*epi*-boronolide: K. R. Prasad, **P. Anbarasan**; *Tetrahedron: Asymmetry* **2006**, *17*, 1146.
3. Enantiospecific synthesis of (-)-2-hydroxy-*exo*-brevicommin: K. R. Prasad, **P. Anbarasan**; *Tetrahedron: Asymmetry* **2006**, *17*, 850.
2. An enantiospecific synthesis of (+)-hydroxy-*exo*-brevicommin: K. R. Prasad, **P. Anbarasan**; *Tetrahedron Lett.* **2006**, *47*, 1433.
1. Asymmetric synthesis of unsaturated α -benzyloxyaldehydes: an enantioselective synthesis of (+)-*exo*-brevicommin: K. R. Prasad, **P. Anbarasan**; *Tetrahedron: Asymmetry* **2005**, *16*, 3951.

Patents:

- Method for producing fuels, gasoline additives and lubricants: E. Sacia, **A. Pazhamalai**, B. Madhesan, S. Sreekumar, F. D. Toste, A. A. Gokhale, E. M. Carrera, T. A. Bell, G. Gunbas; *PCT Int. Appl.* (**2014**), WO2014US40760 20140603.
- Method to convert fermentation mixture into fuels: F. D. Toste, **P. Anbarasan**, J. B. Binder, P. Williams, D. S. Clark, Z. C. Baer, S. Sreekumar, H. W. Blanch; *PCT Int. Appl.* (**2012**), WO 2012166267 A2 20121206.

Invited Talks (selected):

- *New Avenues in Metal Catalyzed Functionalization of Diazo Compounds*; **XVII NOST-Organic Chemistry Conference (NOST-OCC)**, 27-30 Oct 2015, Jaipur.
- *New Avenues in Metal Catalyzed Functionalization of Diazo Compounds*; **10th Mid-Year Chemical Research Society of India (CRSI) Symposium**, 25th July 2015, NIT-Trichy.
- *Transition Metal Catalysis: A Key Technology for the Synthesis of Fine Chemicals*; **Workshop on Catalysis**, 16th July 2015, University of Manchester, UK.
- *The New Age of α -Diazoimines: Rhodium-Catalyzed Denitrogenative Functionalization of N-Sulfonyl-1,2,3-Triazoles*; **Catalysis and Catalyzed Reactions**, 28th March 2014, Madurai Kamaraj University, Madurai.
- *Lignocellulosic Biomass: Feedstock for Renewable Fuels*; 19th March 2013, Mother Teresa Women's University, Kodaikanal.

- *Renewable Fuels: Lignocellulosic Biomass as Feedstock; Expanding Frontiers in Chemistry*, 14-15 Feb 2013, Arul Anandar College (Autonomous), Karumathur.
- *Renewable Fuels: Lignocellulosic Biomass as Feedstock; Frontiers in Chemistry (FIC-2013)*, 1st Feb 2013, St. Xavier's College (Autonomous), Palayamkottai.
- *Electrophilic Coupling Reactions: A New Powerful Tool for the Synthesis of Building Blocks for Pharmaceuticals and Agrochemicals*; 27th July 2012, Orchid Chemicals & Pharmaceuticals Ltd., Chennai.
- “*Electrophilic coupling reactions: a new powerful tool for the synthesis of functionalized (hetero)arenes*”; 13th Sept 2010, Department of Organic Chemistry, Indian Institute of Science, Bangalore.

Conference presentations:

- **17th International Symposium on Homogeneous Catalysis (ISHC-17)** in Poznan, on 4-9th July 2010 and presented a poster entitled “*Functionalization of aryl bromides via Grignard reagent: fluorination and cyanation*”.
- **16th European Symposium on Organic Chemistry** in Prague, on 12-16th July-2009 and presented a poster entitled “*Synthesis of P, N-bidentate ligands via direct cycloaddition of disubstituted ethynylphosphine and aryl azide*”.
- Attended the **Eighth Tetrahedron Symposium – “Challenges in Organic Chemistry”** at Berlin, on 26-29th Jun-2007 and presented a poster on “*General approach to the enantioselective synthesis of α -benzyloxyaldehydes: application to the total synthesis of Disparlure and Solamin*”.
- **In-house symposium** on Chemical Science Division Day (20th Jan 2007), Indian Institute of Science, delivered a talk on “*Enantioselective synthesis of α -hydroxy aldehydes: Total synthesis of bio-active lactones and cyclic ethers*”.
- Second Junior-National Symposium organized by **National Organic Symposium Trust (NOST)** in Jaipur, on 11-14th Oct-2006 and delivered a talk on “*Enantiodivergent synthesis of insect pheromones from L-(+)-tartaric acid*”.

Research highlights:

- Rhodium Catalyzed Diastereoselective Synthesis of 2,2,3,3-Tetrasubstituted Indolines from *N*-Sulfonyl-1,2,3-Triazoles and *ortho*-Vinylanilines (*Chem. Sci.* **2016**, DOI:10.1039/C6SC01075J) was highlighted in Synfacts: “Synthesis of Indolines from 1,2,3-Triazoles by a Rhodium-Catalyst” *Synfacts* **2016**, 823.

- Rhodium Catalyzed C2-Selective Cyanation of Indoles and Pyrroles (*J. Org. Chem.* **2015**, *80*, 3695) was one of the most read articles of the month April 2015.
- Renewable Fuels: Catalytic Upgrade – *Nature News*.
- Sweet Diesel: Discovery Resurrects Process to Convert Sugar Directly to Diesel – *Science Daily*.
- On the Road to more Energetic Biofuels – *RSC Chemistry World*.
- Green Energy: Diesel to be made from Sugar – *The Times of India*.
- Berkeley Fermentation Process Converts Sugar Directly to Diesel – *Biodiesel Magazine*.
- More Bang for the Biofuel Buck – *LBNL and US DOE*.
- Synthesis of benzonitriles through electrophilic cyanation of aryl and heteroaryl bromides was selected as VIP article and highlighted in the “cover page”.
- Efficient synthesis of aryl fluorides (*Angew. Chem. Int. Ed.* **2010**, *49*, 2219) was selected as ‘Hot paper’ by editors of *Angew Chem*. This work was also highlighted in *Synfacts*: “Two Expedient Protocols for the Electrophilic Fluorination of Grignard Reagents” *Synfacts* **2010**, (*6*), 696.

Research interest:

- Design and development of new synthetic methodologies
- Synthesis of therapeutically important natural products
- Trifluoromethylation and trifluoromethylthiolation
- Organometallic- and organocatalysis
- Carbon dioxide fixation.

PROFESSIONAL EXPERIENCE. September 2011 – present. Leading research fellow, Poletayev Institute for Theoretical and Historical Studies in the Humanities (IGITI) National Research University Higher School of Economics (Moscow). September 2011 – present. Associate Professor, Sociology Department, National Research University Higher School of Economics (Moscow). August 2016 - present. Head of “Urban Studies” MA Program, Moscow School of Economic and Social Sciences. October 2007 – February 2013. July 2016 Conference “The Transgressive City” organized by International Sociological Association, COLMEX, Mexico. Presentation “Living with Terror: Urban Fatalism and Care for Fellow Riders in the Moscow subway”. PROFESSIONAL EXPERIENCE: Associate Professor of Management, Graduate School of Management, University of California, Davis, CA. July 2008 present. JOSEPH S CHEN Phone: (530) 752-7155 Graduate School of Management Fax: (530) 752-2924 University of California, Davis One Shields Avenue, 3216 Gallagher Hall e-mail: chenjs@ucdavis.edu Davis, CA 95616. More information. CURRICULUM VITAE William Roberts Clark June 16, 2003 Associate Professor Department of Politics 726 Broadway, 7 th Floor NY, NY 10003-6806 212.998.8504 (fax) 212.995.4184 Education Ph. D., Rutgers University, More information.