

# Curriculum Vitae

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## Dr. Beneesh P. B.

### Official Address

Assistant Professor  
Department of Chemistry  
National Institute of Technology  
Karnataka NITK  
Srinivasnagar P. O.; Surathakal  
Pin: 575 025, Mangalore  
e-mail: pbbeneesh@nitk.edu.in

### Permanent Address

Pattoorpaday House  
Koottala P. O.  
Thrissur – 680 652  
Kerala, INDIA  
Ph: 0487-2282667 (Home)  
e-mail: pbbeneesh@gmail.com



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### Research Experience

- 1. Doctoral Research** – From January 2004 to December 2008  
*Novel Strategy for Carbocyclic Construction Involving Homo-enolates Generated by NHC Catalysis*  
  
Mentor – **Dr. G. Vijay Nair**  
Institute - Organic Chemistry Section, NIIST (CSIR), Trivandrum – 695 019  
University – University of Kerala, Trivandrum, Kerala
- 2. Post-doctoral Research Experience**
  - 16<sup>th</sup> July 2009 – 30<sup>th</sup> July 2010 - Department of Chemistry, School of Science, University of Tokyo, JAPAN. Mentor: **Prof. Eiichi Nakamura**
  - 1<sup>st</sup> February 2011 – 31<sup>st</sup> January 2013 - Department of Organic Chemistry, Arrhenius Laboratory, Stockholm University, SWEDEN. Mentor: **Prof. Jan-E Bäckvall**
- 3. DST-INSPIRE Faculty Fellow**  
24<sup>th</sup> October 2013 - 17<sup>th</sup> June 2014 - Department of Applied Chemistry, Cochin University of Science and Technology, Kochi

### Teaching Experience

- Department of Applied Chemistry, Cochin University of Science and Technology – CUSAT - 24/10/2013 to 17/06/2014  
Courses Taught: i) Stereochemistry in organic synthesis ii) Catalysis by metal Complexes.

ii) Department of Chemistry, Sree Kerala Varma College, Thrissur as Assistant Professor - 18/06/2014 to 31/03/2015 – B.Sc. and M.Sc. Chemistry – University of Calicut

***Awards / Honors***

- 1) DST – INSPIRE Faculty Award (July 2013)
- 2) JRF-CSIR and SRF-CSIR (January 2004 to December 2008) - CSIR-UGC-NET Examination, June 2003.
- 3) GATE – 2003 (Chemistry, 94.82%)
- 4) University First Rank in both B. Sc. – Chemistry (2001) and M. Sc. - Applied Chemistry (2003) – University of Calicut, Kerala, India
- 5) Prof. Geeta Parameswaran Endowment Award for the best out-going M.Sc. student

**Educational Qualifications**

Course	Subject(s)	University/Board	Year	Mark	Division
S.S.L.C	Kerala State School Syllabus	Secondary Education Board, Kerala	1996	512/600	First Class with Distinction
Pre-Degree	Physics, Chemistry, Mathematics, English and Hindi	University of Calicut, Kerala	1998	400/500	First Class with Distinction
B. Sc.	Chemistry(Main) Mathematics and Physics(Subsidiary)	University of Calicut, Kerala	2001	962/1000	I <sup>st</sup> Class (University First Rank)
M. Sc.	Applied Chemistry	University of Calicut, Kerala, India	2003	1641/2000	I <sup>st</sup> Class (University First Rank)

Master Thesis: A Novel Multicomponent Strategy for the Synthesis of Cyclopentene Derivatives  
 Submission: August 2003  
 Mentor: **Dr. G. Vijay Nair**, NIIST Trivandrum

**List of Publications**

1. **Babu, B. P.**, Meng, X. and Bäckvall, J.-E. - Aerobic Oxidative Coupling of Arenes and Olefins through a Biomimetic Approach - *Chem. Eur. J.* **2013**, *19*, 4140-4145.

2. **Babu, B. P.**, Endo, Y. and Bäckvall, J.-E. - Biomimetic Aerobic Oxidation of Amino Alcohols to Lactams - *Chem. Eur. J.* **2012**, *18*, 11524 – 11527.
3. Nair, V., **Babu, B. P.**, Vellalath, S., Varghese, V., Raveendran, A. E. and Suresh, E. - Nucleophilic Heterocyclic Carbene Catalyzed Annulation of Enals to Chalcones in Methanol: A Stereoselective Synthesis of Highly Functionalized Cyclopentanes. *Org. Lett.* **2009**, *11*, 2507-2510.
4. Nair, V., **Babu, B. P.**, Vellalath, S. and Suresh, E. – Stereoselective Synthesis of Spirocyclopentanones via N-Heterocyclic Carbene Catalyzed Reaction of Enals and Dienones. *Chem. Commun.* **2008**, 747-749.
5. Nair, V., Vellalath, S. and **Babu, B. P.** - Recent Advances in Carbon- Carbon Bond-Forming Reactions Involving Homo-enolates Generated by NHC catalysis. *Chem. Soc. Rev.* **2008**, *37*, 2691-2698.
6. Nair, V., Vellalath, S., **Babu, B. P.**, Varghese, V., Paul, R. R and Suresh, E. - NHC-Catalyzed Annulation of Enals to Tethered Dienones: Efficient Synthesis of Bicyclic Dienes. *Org. Biomol. Chem.* **2010**, *8*, 4861-4866.
7. Nair, V., Sinu, C. R., **Babu, B. P.**, Varghese, V., Jose, A. and Suresh, E. - Novel Nucleophilic Heterocyclic Carbene Mediated Stereoselective Conjugate Addition of Enals to Nitrostyrenes via Homo-enolate. *Org. Lett.* **2009**, *11*, 5570-5573.
8. Nair, V., Varghese, V., **Babu, B. P.**, Sinu, C. R. and Suresh, E. – A Novel Pseudo Four Component Reaction Involving Homo-enolate for the Synthesis of  $\alpha$ -Aminobutyric Acid Derivatives. *Org. Biomol. Chem.* **2010**, *8*, 761-764.
9. Rajan, R., **Babu, B. P.**, Kumar, A., Paul, R. R., Sinu, C. R., Suresh, E and Nair, V. - A Facile Multicomponent Reaction Involving Isoquinoline, Dimethyl Allenedicarboxylate and 2-Oxo-1H-indol-3-ylidenes – *Synthesis* **2012**, *44*, 417-422.
10. Nair, V., **Babu, B. P.**, Varghese, V., Sinu, C. R., Paul, R. R., Anabha, E. R. and Suresh, E. - A Novel Multicomponent Reaction Involving Isoquinoline, Allenolate and Cyanoacrylates. *Tetrahedron Lett.* **2009**, *50*, 3716-3718.
11. Nair, V., **Beneesh, P. B.**, Sreekumar, V., Bindu, S., Menon, R. S. and Deepthi, A. - The Multicomponent Reaction of Dimethoxycarbene, Dimethyl Butynedioate and Electrophilic Styrenes: An Unprecedented Synthesis of Highly Substituted Cyclopentenone Acetals. *Tetrahedron Lett.* **2005**, *46*, 201-203.

12. Nair, V., Pillai, A. N., **Beneesh, P. B.** and Suresh, E. - Engaging the Pyridine-DMAD Zwitterion in a Novel Strategy for the Selective Synthesis of Highly Substituted Benzene and Cyclopentenedione Derivatives. *Org. Lett.* **2005**, *7*, 4625-4628.
13. Nair, V., Menon, R. S., **Beneesh, P. B.**, Sreekumar, V. and Bindu, S. – A Novel Multicomponent Reaction Involving Isocyanide, Dimethyl Acetylenedicarboxylate (DMAD) and Electrophilic Styrenes: Facile Synthesis of Highly Substituted Cyclopentadienes. *Org. Lett.* **2004**, *6*, 767-769.
14. Nair, V., Deepthi, A. and **Babu, B. P.** - A Novel Three Component Reaction of Triphenylphosphine, DMAD and Electron Deficient Styrenes: Facile Synthesis of Stable Cyclopentenyl Phosphoranes. *Synthesis* **2006**, 1443-1446.
15. Nair, V., Biju, A. T., Mathew, S. C. and **Babu, B. P.** - Carbon-Nitrogen Bond-Forming Reactions Mediated by Dialkyl Azodicarboxylate: A Promising Synthetic Strategy. *Chem. Asian J.* **2008**, *3*, 810-820.
16. Nair, V., Deepthi, A., Poonoth, M., Santhamma, B., Vellalath, S., **Babu, B. P.**, R. Mohan and Suresh, E. - The Reaction of Dimethoxycarbene - DMAD Zwitterion with 1, 2-Diones and Anhydrides: A Novel Synthesis of Highly Substituted Dihydrofurans and Spirodihydrofurans. *J. Org. Chem.* **2006**, *71*, 2313-2319.
17. Paul, R. R., Varghese, V., **Beneesh, P. B.**, Sinu, C. R., Suresh, E., Anabha, E. R. - Nitrene cycloaddition to quinones: A novel strategy for the synthesis of benzisoxazolidenes – *J. Heterocycl. Chem.* **2010**, *47*, 396-399.

#### **D) Poster Presentations in Academic Conferences**

1. Beneesh P. B. and Jan-E. Bäckvall (2014): Aerobic Dehydrogenative Coupling of Arenes and Olefins – A Biomimetic Approach. - International Symposium on Nature Inspired Initiatives in Chemical Trends (NIICT). IICT, Hyderabad. March 2014. Poster # 54
2. P. B. Beneesh, V. Sreekumar, S. Bindu and V. Nair (2005): The Multicomponent Reaction of Dimethoxycarbene, Dimethyl Butynedioate and Electrophilic Styrenes: An Unprecedented Synthesis of Highly Substituted Cyclopentenone Acetals. 7<sup>th</sup> CRSI National Symposium in Chemistry, February-2005. Kolkata. Poster # P-110.
3. Beneesh P. B., Abhilash N. Pillai and V. Nair (2006): Novel Pyridine Catalyzed Ring Expansion Reactions of Cyclobutene-1, 2-dione Derivatives. INSOC- January-2006, MG University, Kottayam. Poster # P-36.

4. A. N. Pillai, B. Rema Devi, P. B. Beneesh, K. G. Abhilash and V. Nair (2006): New Synthetic Transformations Involving Zwitterions Derived from N-Heterocycles and Activated Acetylenes. 8<sup>th</sup> CRSI National Symposium in Chemistry, Mumbai, February-2006, Poster # P-80.
5. P. B. Beneesh and V. Nair (2007): A Novel Multicomponent Reaction Involving Isoquinoline, Allene and Electrophilic Styrenes. 3<sup>rd</sup> International Symposium on Current Trends in Drug Discovery Research, CDRI, Lucknow, February-2007, Poster # P-15.