# Curriculum Vitae

**Name:** **Dr. Rajesh G. Kalkhambkar** **M.Sc.,Ph.D**
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**Date of Birth:** December 31st, 1980

**Academic Qualifications:**

**B.Sc** (Chemistry, Physics and Mathematics), Karnatak University, Dharwad, Karnatak 1999-2001.

**M.Sc** (Organic Chemistry), Karnatak University, Dharwad, Karnatak 2001-2003.

**Ph.D** (Synthetic Organic Chemistry), Karnatak University, Dharwad, Karnatak 2003-2007 (Awarded in 2008)
Title of Ph.D Thesis: "Synthetic Studies in Heterocycles of Biological Interest"
Name of Research Supervisor- Late... Dr (Smt.) G. M. Kulkarni (Associate Professor of Chemistry, Department of Chemistry, Karnatak Science College, Dharwad)

**Positions Held:**

1. R & D Manager in the Department of Research and Development. BenzoChem Industries Pvt. Ltd. Mumbai, Maharastra. (September 2007-September 2008)

2. Postdoctoral Research Fellow in the Department of Medicinal Chemistry at AstraZeneca India Pvt Ltd. Bangalore, Karnatak. (September 2008-March 2010)

3. Postdoctoral Research Fellow in the Department of Chemistry, University of North Florida, Jacksonville, Florida USA, in the synthetic laboratory of Professor, Kenneth K. Laali. (April 2010-June 2011)

4. Assistant Professor, Department of Chemistry Karnatak Science College, Dharwad (2011-Till the Date)

**Awards & Honors:**

1. Hon, Shri Sharadraoji Pawar **Gold Medal** for standing first to B.Sc in the

   B.K.College, Belgaum In the year 2001.

2. National Merit Scholarship at B.Sc (1999-2001)

3. National Merit Scholarship at M.Sc (2001-2003)

4. University Research Felloship at Ph.D (2003-2007)

5. Professor D. S. Bhakuni Young Scientist Award at the 43rd annual Convention Of Chemists organized by the Indian Chemical Society, Kolkata at Dr. Babasaheb Ambedkar Marathawada University, Aurangabad in the year December 2006. Fellow,

**National/International Committee Work:**

1. Member, International Year of Chemistry, 2011 at Karnatak Science College, Dharwad (December 2011)
2. Organizing Secretary, National Conference on environmental pollution, Remediation and Sustainable development 2013 at Karnatak Science College, Dharwad (To be conducted in January 2013)

**Research Interest:**

**Broad area of interest in Synthetic Organic and Medicinal Chemistry**

- Synthetic work involves one-pot and multi-step synthesis of novel coumarin and 1-aza coumarin molecules of biological importance.
- Synthetic work also involves synthesis and characterization of small organic Molecules and drug intermediates.
- Synthesis involves the use and handling air and moisture sensitive Reagents, solvents, and organic compounds in general and extensive use of ionic Liquid as a catalyst and as a solvent medium, a tool for green chemistry in particular.
- Characterization of all the newly synthesized molecules involves the use of IR, $^{1}$H NMR, $^{13}$C NMR, $^{19}$F NMR, 2D-NMR, GC-MS, FAB-MS, LC-MS, ESI-MS and some of the molecules are characterized by X-Ray Diffraction study.
- Biological evaluation (in collaboration with microbiology department) involves the *in vitro* antibacterial and antifungal activities with minimum four to five bacterial and fungal strains.
- Pharmacological evaluation (in collaboration with institues of pharmacy) involves *Invivo* analgesic and anti-inflammatory activities.

**Teaching Interest:**

Thorough in teaching theory and practicals for Pre-University (PUC), Under Graduate (B.Sc) and Post graduate classes (M.Sc).

Topics of my interest in organic chemistry.

- Introduction to Modern Organic Chemistry
- Organic Name Reactions
- Heterocyclic Chemistry
- Reagents in Organic Synthesis
- Spectroscopy in Organic Synthesis
- Steriochemistry
- Plants products viz Alkaloides and Terpenoids

**Post-graduate (M. Sc) Students trained in synthetic organic research (Projects)**

1. Kum. Trishaladevi A. Durgannavar (2010-2012), scored highest marks 133/150 for the project entitled "Synthesis of Nitriles by dehydration of aldoximes" at Karnatak Science College Dharwad (2012).
2. Shri. Shrishail Pattanshetty (2012).

**Funding Agencies / Sponsored Research (National and International):**

1. Applied for UGC Sponsored Minor research project entitled "Synthesis of novel room temperature ionic liquids bearing fluorine, trifluoromethyl, and trifyl groups: an approach towards increasing Lewis / protic acidity of the cationic core, and exploring the applications as dual solvent / catalyst for organic synthesis" in 11$^{th}$ UGC-MRP plan 2012.

**List of Research Publications (2007-2012)**

***Total list of 30 Research Papers (27 published and 3 Accepted)***

***A. List of 27 published papers in descending order***

27. $Pd(OAc)_2$ catalyzed synthesis of 2-aryl- and 2-heteroaryl-benzoxazoles and benzothiazoles in imidazolium ionic liquids (ILs) without additives and with recycling/reuse of the Ionic Liquid.
**Rajesh G. Kalkhambkar**, Kenneth K Laali.
*Tetrahedron. Letters.* **2012**, *53*, 4212-4215.

26. $Pd(OAc)_2$-catalyzed cross-coupling of polyfluoroarenes with simple aromatics in imidazolium ionic liquids (ILs) without oxidant and additive and with recycling/reuse of the Ionic Liquid.
**Rajesh G. Kalkhambkar**, Kenneth K Laali.
*Tetrahedron. Letters*. **2011**, *52*, 5525-5529.

25. Reaction of trifyl-imidazole with aldoximes: facile synthesis of nitriles and formation of novel aldoxime-bis(N-trifyl)-imidazole adducts
**Rajesh G. Kalkhambkar**, Scott D. Bunge, Kenneth K. Laali .
*Tetrahedron. Letters*. **2011**, *52*, 5184-5187.

24. Arenediazonium Salts Immobilized in Imidazolium Ionic Liquids as Electrophilic Partners in the $Pd(OAc)_2$ - Catalyzed Matsuda-Heck Arylation.
**Rajesh G. Kalkhambkar**, Kenneth K Laali.
*Tetrahedron. Letters.* **2011**, *52*, 1733-1737.

23. Highly Efficient Synthesis of Amides via Ritter reaction in Ionic Liquids.
**Rajesh G. Kalkhambkar**, Saraha N. Waters, Kenneth K Laali.
*Tetrahedron. Letters*. **2011**, *52*, 867-871.

22. Synthesis and biological activities of novel ethers of quinolinone linked with Coumarins.
**Rajesh G. Kalkhambkar**, Geeta M. Kulkarni, Chandrappa M. Kamanvalli. G. Aridoss.
*Monatshefte fur Chemie - Chemical Monthly*. **2011**, *142*, 305-315.

21. Synthesis and Biological studies of some new acrylic acid ethyl esters of quinolinone.
**Rajesh G. Kalkhambkar**, Geeta M. Kulkarni, Chandrappa M. Kamanvalli, N. Premkumar, Asdaq S M.B. G. Aridoss, Y.T. Jeong.

*Monatshefte fur Chemie - Chemical Monthly*. **2012**, *143*, 1075.

20. 1-(3,5-Dichlorophenyl)-1H-1,2,3,4-tetrazole
Rajesh G. **Kalkhambkar**, D. Gayathri, Vivek K. Gupta, Rajni Kant and Yeon Tae Jeong
*Acta Cryst*. **2012**, *E68*, o433.

19. (E)-Ethyl 2-cyano-3-(furan-2-yl)acrylate
Rajesh G. Kalkhambkar, D. Gayathri, Vivek K. Gupta, Rajni Kant and Yeon Tae Jeong
*Acta Cryst*. **2012**, *E68*, o1482.

18. 8-Formyl-4-methyl-2-oxo-2H-chromen-7-yl4-methylbenzenesulfonate
H. Yuvaraj, D. Gayathri, **Rajesh G. Kalkhambkar**, Geeta M. Kulkarni and Rajendra M. Bapset
*Acta Cryst*. **2011**, *E67*, o1513.

17. 8-[(Hydrazinylidene)methyl]-4-methyl-2-oxo-2*H*-chromen-7-yl-4-Methylbenzenesulfonate.
Haldorai Yuvaraj, S. Sundaramoorthy**,** D. Velmurugan and **Rajesh G. Kalkhambkar**
*Acta Cryst*. **2011**, *E67*, o323.

16. (Z)-2-[2-(4-Methylbenzylidene)hydrazinyl]pyridine.
Haldorai Yuvaraj, S. Sundaramoorthy**,** D. Velmurugan and **Rajesh G. Kalkhambkar**
*Acta Cryst*. **2011**, *E67*, o178.

15. (E)-Ethyl 2-cyano-3-(1H-pyrrol-2-yl)acrylate
Haldorai Yuvaraj, D. Gayathri, Rajesh G. Kalkhambkar, Vivek K. Gupta and Rajnikant
*Acta Cryst*. **2011**, *E67*, o2165.

14. (Z)-2-[2-(4-Methylbenzylidene)hydrazinyl]pyridine.
Haldorai Yuvaraj, S. Sundaramoorthy**,** D. Velmurugan and **Rajesh G. Kalkhambkar**
*Acta Cryst*. **2011**, *E67*, o178.

13. 1-(2-Azidoacetyl)-3-methyl-2,6-diphenylpiperidin-4-one.
Haldorai Yuvaraj, S. Sundaramoorthy**,** D. Velmurugan and **Rajesh G. Kalkhambkar**
*Acta Cryst*. **2010**, *E66*, o2733.

12. Ethyl 4-(3-bromophenyl)-6-methyl-2-oxo-1,2,3,4-tetrahydropyrimidine-5-carboxylate.
Haldorai Yuvaraj, S. Sundaramoorthy**,** D. Velmurugan and **Rajesh G. Kalkhambkar**
*Acta Cryst*. **2010**, *E66*, o3325.

11. Synthesis and Biological studies on Mono and Bis-methylene bridged heterocyclic Sulfides and sulfones carbostyrils.
**Rajesh G. Kalkhambkar**, Geeta M. Kulkarni, R. Nagendra Rao and H. Shivakumar
*J.Sulphur.Chemistry*. **2009**, *30, 6*, 596-610.

10. Solid State Confirmation of [2-Chloro-quinolin-3-ylmethylene]-phenyl-amine.
**Rajesh G. Kalkhambkar**, Geeta M. Kulkarni, H.S.Hwang and C. S. Lee
*Acta Cryst*. **2008**, *E64*, O258.

09. Synthesis and Biological evaluation of some new fluorinated Coumarins and 1-aza coumarins.
**Rajesh G. Kalkhambkar**, Geeta M. Kulkarni, N.Premkumar, and Chang M. Sun
*Eur.J.Med.Chem.* **2008**, *43*, 2178-2188.

08. The inhibition effects of chloroquinolines on the corrosion of mild steel in HCl.
A.V.Shanbhag, T.V.Venkatesha, R.A.Prabhu, **R.G.Kalkhambkar** and G.M.Kulkarni
*Materials Chemistry and Physics.* **2008**, *108*, 283-289.

07. Inhibition effects of some Schiff's bases on the corrosion of mild steel in HCl Solution.
R.A. Prabhu, T.V. Venkatesha b, **R.G.Kalkhambkar** and G.M. Kulkarni,
*Corrosion Science.* **2008**, *50*, 3356–3362.

06. Corrosion inhibition of mild steel in acidic medium using hydrazide derivatives. A.V.Shanbhag, T.V.Venkatesha, R.A.Prabhu, **R.G.Kalkhambkar** and G.M.Kulkarni
*J. Appl. Electrochem.* **2008**, *38*, 279-287.

05. A facile Selective and highly efficient method of acylation of amines.
M.B.Patil, M.V.Kulkarni, **R.G.Kalkhambkar** and G.M.Kulkarni
*Synthetic.Communication*. **2008**, *38*, 2929-2940.

04. Crystal Structure of 7-Methyl-4-[(4-fluoro) anilinomethyl] coumarin.
**Rajesh G. Kalkhambkar**, Geeta M. Kulkarni and C. S. Lee
*Analytical Sciences, Japan*. **2007**, 23, x31 - x32.

03. Synthesis and Pharmacological activities of some new Triheterocyclic Thiazoles.
**Rajesh G. Kalkhambkar**, Geeta M. Kulkarni, R. Nagendra Rao and H. Shivakumar
*Eur.J.Med.Chem.* **2007**, *42*, 1272-1276.

02. Crystal Structure of 4-[(4-formyl) phenoxymethyl] carbostyril.
**Rajesh G. Kalkhambkar**, Geeta M. Kulkarni, H.S.Hwang and C. S. Lee
*Analytical Sciences, Japan*. **2007**, *23*, x145 – x146.

01. Inhibition effect of some imines on the corrosion of mild steel in hydrochloric acid.
A.V.Shanbhag, R.A.Prabhu, G.M.Kulkarni, **R.G.Kalkhambkar** and T.V.Venkatesha
*Ind.J.Chem.Technol*. **2007**, *14*, 584-591.

***B. List of 3 Accepted papers in descending order***

03. Synthesis, Characterization and antimicrobial studies of benzdipyran analogue of Chloramphenicol.
**Rajesh G. Kalkhambkar**, Geeta M. Kulkarni, J.C.Kadakol
*J.Het.Chem.* (Accepted for publication June **2012**)

02. A facile One Pot Synthesis of new tricyclic Coumarins from Single Synthon.
**Rajesh G. Kalkhambkar**, Geeta M. Kulkarni and Manohar V. Kulkarni.
*J.Het.Chem.* (Accepted for publication July **2012**)

01. Synthesis and Biological evaluation of Cyclic imides with coumarins and azacoumarins
Marulasiddaiah. R, **Rajesh G. Kalkhambkar** and Manohar V. Kulkarni.
*Open. J. Med. Chem.* (Accepted for publication July **2012**)

***C. List of 2 Papers submitted for publication in descending order***

02. Highly Efficient Synthesis of 1,3-Dioxanes via Prins reaction in Brønsted-acidic imidazolium Ionic Liquid
**Rajesh G. Kalkhambkar**, G Aridoss, Yeon Tae Jeong.
*Synlett.* (Submitted to Journal, August 2012).

01. Trifluoromethanesulfonic anhydride: a mild and efficient reagent for the synthesis of 1,2-benzisoxazole, and isoxazolo and isothiazolo quinolines.
**Rajesh G. Kalkhambkar**, G Aridoss, Yeon Tae Jeong.
*Monatshefte fur Chemie - Chemical Monthly*. (Submitted to the journal, June **2012**).

**National / International Conferences / Seminars attended**

1. Participated in the "Professor S. Ramasheshan Distinguished Lecture" Organized by AstraZeneca Research Foundation, Bangalore in the year 2004

2. Attended the One-day seminar on "Nuclear Energy – 50 years in the service of Nation" Organized By the Nuclear Power Corporation of India Ltd and Karnatak University, Dharwad in the year April 2004 in Dharwad.

3. Participated in the "Intellectual Property Rights Awareness Programme" Organized by CIPRA, National Law School of India University, Bangalore and PG Department of Law, Karnatak University, Dharwad in the year January 2005 in Dharwad.

4. Attended the 7$^{th}$ Tetrahedron Symposium on "Recent Challenges in Organic Chemistry" At Kyoto, Japan in the year 2006.

5. Attended the "43$^{rd}$ Annual Convention of Chemists" Organized by the Indian Chemical Society, Kolkata at Dr. Babasaheb Ambedkar Marathawada University, Aurangabad in the year 2006.

6. Attended the one day Symposium on "Recent Trends in NMR and Users Meeting" Organized By the NMR Research Centre, Indian Institute of Science, Bangalore in the Year 2007.

7. Attended the "45$^{th}$ Annual Convention of Chemists" Organized by the Indian Chemical Society, Kolkata at Krnatak University, Dharwad, Karnataka in the year 2009.

8. Attended the one day Training / Seminar in "Fire Prevention and Fire Fighting" Organized by 'WHEN-IT-STRIKES' Crisis management Pvt.Ltd at AstraZeneca India Pvt.Ltd, Bangalore in The year 2009.

9. Poster presentation on Reaction of Trifyl-imidazole with Aldoximes: Facile Synthesis of Nitriles and formation of novel Aldoxime/(bis)N-trifyl imidazole adduct by K. K. Laali in "43$^{rd}$ IUPAC World Chemistry Congress-Bridging Innovation Among the Americas and the World" on 30 July 2011 to 07 August 2011 at San Juan, Puerto Rico, USA.

10. Poster presentation on Highly Efficient Synthesis of 1,3-Dioxanes via Prins reaction in Brønsted-acidic imidazolium Ionic Liquid at international conference in "Chemical Constellation Cheminar - 2012 (CCC-2012)" at Department of Chemistry, National Institute of Technology, Jalandhar, Punjab INDIA on 10-12$^{th}$ September 2012.