

October-1993-May-1994: Worked on UGC Project in JNT University under the guidance of Prof.P.K.Dubey(Topic: Styrylation studies on Benzimidazoles).

Knowledge Purview:

- ✓ During my professional research worked on various organometallic reactions like Suzuki, Buchwald, Miyaura, handled moisture sensitive organic compounds under N₂ atmosphere, Grignard reactions, Epoxidations, Lithiations, Cryogenic reactions, Oxidations, Reductions and synthesis of small and active organic molecules and prodrugs in medicinal chemistry, asymmetric synthesis and resolution of various chiral molecules. Handling synthesis of drugs like Ciprofloxacin, Enrofloxacin etc. (Nitrogen Heterocycles)
- ✓ Worked on drugs like Roxithromycin, Azithromycin (broad spectrum of antibiotics) Citalopram, Carbamazepine (antidepressants), Losartan and Valsartan(anti-hypersensitive)
- ✓ Worked on Green Chemistry-Synthesis of Carbohydrate molecules(Nujiromycin)
- ✓ Worked on development of cardiovascular drug, betalactams(anti-infectious) and anti-asthama drug, Synthesis and isolation of various Pharmaceutical Impurities to support the projects at Global Level.
- ✓ Executing functions pertaining to Process Research & Development, Process & Chemical Analysis by IR, 1H and 13 C NMR, HPLC, GC and MASS spectrometry.
- ✓ Executing functions pertaining to process research and customs and contract research.
- ✓ Stabilizing the process in R&D, scale up in pilot plant and technology transfer to production.

PUBLICATIONS

- 1) Microwave assisted synthesis of maleimides under solvent free conditions, M. Suresh Babu, K. S.Manjula, K. B. Umesha, R. L. Jagadeesha, K. M. Lokanatha Rai, *Bulgarian Chemical Communications*, **2003**, 35, No.3, 192-194.
- 2) Synthesis of aromatic aldehydes via NiCl₂ reduction and hydrolysis of oxazolines, M. Suresh Babu, K. M. Lokanatha Rai, *Tetrahedron Letters*, **2004**, 45, 7969-7970.
- 3) Esterification under solvothermal conditions, M. Suresh Babu, K. M. Lokanatha Rai, K. Byrappa, *Bulgarian Chemical Communications*, **2004**, 36, No.2, 87-88.
- 4) Synthesis of thioesters and thioamides under solvothermal condition using thiourea as thionating agent, Suresh Babu, M., Aparna, E., Rai, K. M. L., Jagadeesh, R. L., Gaonkar, S. L., Byrappa, K. *Journal of Materials Science*, **2006**, 41, No.5,1391-93.

- 5) Synthesis of aryl ketones via decarboxylation of aromatic acids under solvothermal condition, M.Suresh babu, K. M. L. Rai, R. E. Riman, K. Byrappa, *Asian Journal of Chemistry*, **2012**, 24, No.3, 1395-96.
- 6) A simple way of recycling of homogeneous catalyst in Suzuki reaction, M. Suresh Babu, R.Paramasivappa, S. G. Manjunatha, Sureshkumar Sythana, Krishnaji Tadiparthi, ChennakrishnaReddy Gundala, *Green Chemistry Letters and Reviews*, **2013**, Vol.6, No.1, 77-87
- 7) A new and efficient synthesis of Podophyllotoxin and its derivatives by reduction of isoxazoline ring using NiCl₂ as a catalyst, M. Suresh Babu, K. M. L. Rai, *Asian Journal of Chemistry*, **2013**, 25, No.17, 9555-9557.
- 8) Novel approach towards one pot stereospecific synthesis of carbohydrate derived substituted imidazolines, Vibha Gautam, Veera Babu Kagita, Sudhir Nambiar, Gutala Phaneendra, Sulur G Manjunatha, Sridharan Ramasubramanian, Suresh Babu M, Jaikumar Keshwan, Sagar Bhagat, Ravindran Prakash, Ramachandra Puranik, *Tetrahedron letters*, **2014**, Vol.55, issue 35, 4943-47.
- 9) **Patents published on Roxithromycin** (antibacterial drug):
 - **US patent, 6,051,695 published on April 18, 2000**
 - **European patent, EP 1 004, 591 A1 published on May 31, 2000**

CONFERENCES AND SYMPOSIUMS ATTENDED

- 1) Synthesis of γ -Aminoalcohols, precursor for the synthesis of podophyllotoxin via reductive cleavage of isoxazoline ring using NiCl₂ as catalyst, paper presented in Indian Council of Chemists, 20th conference, 2001, Mysore, India.
- 2) Esterification under solvothermal condition, paper presented in Indian Council of Chemists, 21 st conference, 2002, Jabalpur, India.
- 3) Synthesis of Aryl Ketones via decarboxylation of aromatic acids by microwave irradiation, paper presented in National Seminar on Microwave mediated synthesis of biologically active(Heterocyclic) compounds (Enviro-Friendly Chemistry), 2003, Lucknow, India.
- 4) Synthesis of biologically active heterocycles from aromatic aldehydes via intramolecular 1,3-dipolar cycloaddition and reduction with NiCl₂, paper presented in National Symposium on Emerging Research Trends and Developments in Chemistry, 2004, Warangal, India.

- 5) AstraZeneca Nobel Medicine Initiative Lecture - March 2012, Lecture By Prof. Doherty (1996 Nobel Laureate in Physiology or Medicine) on “Immunity to influenza & the problem of pandemics”
- 6) AstraZeneca Excellence in Chemistry Award 2011 – Symposium Ulf Widengren Auditorium, AstraZeneca India Pvt Ltd Bellary Road, Hebbal Bangalore – 560 024, India
- 7) Professor Sune Bergström Distinguished Public Lecture – 2010 & 2011 , Professor P Balaram, Professor of Molecular Biophysics, Director of the Indian Institute of Science, Bangalore & Dr. Trevor J Trust, Former Vice President and Head of Infection Discovery Research at AstraZeneca R&D Boston.
- 8) Seminar by Professor Marisa Kozlowski, Department of Chemistry, University of Pennsylvania, Philadelphia on “Asymmetric Oxidative Coupling, Claisen Rearrangement and Quaternary Amino Acid Synthesis”
- 9) Seminar by Dr. Ganesh Pandey, FNA, Division of Organic Chemistry, National Chemical Laboratory, Pune - “Organic Chemistry: A science of Art, Imagination, Creativity and Human Behaviour”
- 10) Dr. K. V. Radhakrishnan, Scientist, Organic Chemistry Section, NIIST-CSIR (formerly RRL, TVM), Trivandrum - Palladium catalyzed skeletal rearrangement of heterobicyclic olefins: A facile method towards pharmaceutically important heterocycles and cyclopentanoids.
- 11) Lecture by Takayuki Shioiri, Honorary President of the Japanese Society for Process Chemistry - My Organic Synthesis during this Half-Century”.

AWARDS AND RECOGNITIONS IN ASTRAZENECA

- ◆ Science Team Award (AZD6642) – 2011 (Award for best scientific applications)
- ◆ Project Team Award (BLi)- 2011 (Award for short time frame work project)
- ◆ Awarded “Award of Excellence” – Award for Best Safe Laboratory in July 2011
- ◆ Published 1 article in an internal journal Pharminnova circulated globally-2011
- ◆ Special Project Award of the year BLi(Beta Lactamase inhibitor) – 2012
- ◆ Published 1 article in an internal journal Pharminnova circulated globally in October, 2013.
- ◆ Our team nominated for best team of the year in Global Medicinal Development(GMD) awards-2013 from Bangalore.

◆ Our team won the IMED(Innovative Medicines and Early Development) award at global level-2014 for BLi synthetic route optimization.

◆ **Life time member of Indian Council of Chemists.**

REFERENCES

1. Prof. K. M. Lokanatha Rai

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Letter of Motivation

From:
M.Suresh Babu,
Bangalore,
India.

March 11, 2015.

Dear Sir,

Sub:Chemist/Scientist/Postdoc in organic chemistry

I was awarded my Ph.D. degree in synthetic organic chemistry entitled “Synthetic Application of Nickel Chloride” from University of Mysore, Mysore, India on 21st February, 2009. I used Nickel Chloride in presence of sodium borohydride for the various reactions during my research work. I synthesized the anticancer agent – PODOPHYLLOTOXIN via 3+2 cycloaddition of safrole with oximes in presence of Chloramine-T(The reagent which converts oximes into nitrile oxides) and reduction of isoxazoline ring with NiCl₂/NaBH₄ reagent followed by diazotization and the resultant alkene on reaction with Manganese triacetate in presence of potassium acetate leads to formation of podophyllotoxin. In addition I also worked on solvothermal, microwave techniques and isolation techniques of natural products during my Ph.D.

I had some industrial experience in organic synthesis and recently worked as a Postdoctoral fellow/associate research scientist-2 in UK based multinational company, **AstraZeneca**, Bangalore, India.

I have an experience in handling air and moisture sensitive pyrophoric reagents like Methyl / hexyl / t-butyl lithium reagents and Grignard reagents on smaller as well as larger scale. I have also done several reactions like Mitsunobu, Gillmann, Sagusa-Ito oxidation, Trost chemistry for chiral induction, Ugi-deboc cyclisation , Suzuki and Miyara coupling etc. I have also been trained for handling pressure reactions like hydrogenation.

I have worked on multistep (20 step) synthesis of β -lactum, wherein we have used Trost ligand to induce dynamic kinetic asymmetric transformation and **Ring Closing Metathesis (RCM)** reaction for building the core piperidine ring. During the development of this reaction we could identify that cis isomer was cyclising faster than the trans isomer. Further, this reaction was carried out on larger scale. I also have extensive experience in various types of column purifications. I worked on Carbohydrate chemistry during synthesis and isolation of Nojiromycin. I have undergone training in application of Physical-organic chemistry techniques during the reaction in AstraZeneca. I had experience in operation of HPLC, LCMS and NMR instruments and their analysis(reports).

Recently I worked on the development of cardiovascular drug (FLAP-CD1 and CD3)(Five Lipoxygenase Activating Protein) in AstraZeneca.

I studied biology upto my graduation (Intermediate and B.Sc.) which will be helpful for the present post. I taught chemistry experiments for B.Tech students and guide M.Sc students for their project work during my research.

At this time I am interestingly waiting for the chemist position in your group and I would be very thankful to you if I am given the opportunity to work with you.

Thanking you

Yours Sincerely,

(Dr.M.Suresh babu)