Curriculum Vitae

1	**PERSONAL DATA**	
	Name	DR. PRASANTA ROY
	Date of Birth	12-05-1986
	Place of Birth	Berghosh, West Bengal, India
	Marital Status	Married
	Nationality	Indian
	Postal Address	Vill-Berghosh, P.O-Shashpur, P.S- Indas, Dist-Bankura West Bengal-722205, India
	Phone Number (Mobile)	Mobile No. : +91-9831234633
	E-Mail Address	prasantaray86@gmail.com

2.	**ACADEMIC/PROFESSIONAL PARTICULARS**				
(a)	**Field of Specialization:** Major Field of Specialization: Chemistry Fine Field of Specialization: Organic Chemistry				
(b)	**Research Summary** 1. Post-doctoral research work under Prof. X. Fang, Fujian Institute of Research on the Structure of Matter, Chinese Academy of Sciences, China. (09/2016-08/2018) **Topic:** NHC-Catalyst asymmetric synthesis, Asymmetric transfer hydrogenation of ketones or enamine using new generation Noyori's catalyst and Separation of enantiomer from racemic mixture using kinetic resolution 2**.** Post-doctoral research work under Prof. Wei-Lie Xiao at Yunnan University, China. (from 05/03/2019 to current) **Topic:** Organic Synthesis of Bioactive Molecules and Medicinal chemistry				
(b)	**Academic Qualifications**				
	Degree	**Name of the University**	**Year of passing**	**Subject(s) / Topic(s)**	**Marks**
	Ph. D.	Indian Institute of Technology, Guwahati	2016	Synthetic Organic Chemistry	-
	M. Sc.	Visva-Bharati University	2010	Organic Chemistry Specialization	64%

(c)	Academic Honours and Awards			
	Name of Award/Fellowship etc.	**Elected/Honorary Fellow**	**Awarded by**	**Year of Award**
	CSIR (Junior Research Fellow)	UGC-JRF	CSIR, New Delhi, Govt. of India	2011
	GATE	MHRD	IITs and IISC	2010
	Postdoctoral Fellow	-	University Outstanding Postdoctoral Fellow Award from Yunnan University, China	2019
	Postdoctoral Fellow	-	Yunnan Province Postdoctoral Funding Award at Yunnan University, China	2019

(d)	**Language Proficiency**
	List of spoken/written languages and level of proficiency: English, Bengali & Hindi

3 Teaching

(a) Summary of Courses Taught

S.No	Course Code	Course Name	Number of times Taught	Evaluation
1	CH 101	Chemistry	03	
2	CH 110	Chemistry Lab 1	01	

4	**RESEARCH DETAILS**
(a)	**Instrument Handled**
	400 & 600 MHz NMR, FT-IR, UV-VIS spectrophotometer, GC-MS/HRMS, HPLC, X-Ray Diffractometry (XRD) and EPR.
(b)	**Reagents Handled**
	Transition metal catalyst: Cu, Pd, Ru, Rh, Organolithium and Grignard reagent

5.	**List of Publications**
	1. **Prasanta Roy and** Wei-Lie Xiao* Synthesis and Evaluation of Anti-inflammatory Activities of Functionalized N-Propargylic/Allylic Indole-2-Carboxamides and N-Protected Propargylic/Allylic-2-Aroyl-/Alkyl Indoles (Communicated, **2020**) 2. **Prasanta Ray Bagdi**[#], Zhifei Zhao[#], Shuang Yang, Jinggong Liu, Weici Xu*, Xinqiang Fang*, Stereodivergent Access to Enantioenriched Epoxy Alcohols with Three Stereogenic Centers via Ruthenium-Catalyzed Transfer Hydrogenation, Org. Lett. **2019**, *21*, 5491-5494.

3. **Prasanta Ray Bagdi**[#], Xinqiang Fang*, The non-enzymatic acylative kinetic resolution of racemic substituted 1,2-diols (secondary vs. tertiary), with effective enantiodiscrimination achieved by using the isothiourea organocatalyst HyperBTM. **(Communicated, 2019)**
4. Karuna Mahato, **Prasanta Ray Bagdi**[#], Neha Arora[#], Radhakrishna Gattu, Siddhartha Sankar Ghosh and Abu T. Khan*, An Oxidative Cross Coupling Reaction of 4-Hydroxydithiocoumarin and Amines/Thiols Using a Combination of I_2 and TBHP: Access to Lead Molecules for Bio-medical Applications, Chem. Commun., **2018**, *54*, 1513-1516.
5. Radhakrishna Gattu, **Prasanta Ray Bagdi**[#], R. Sidick Basha[#], Abu Taleb Khan*, Camphorsulfonic Acid Catalysed One-Pot Three Component Reaction for the Synthesis of Fused Quinoline and Benzoquinoline Derivatives, J. Org. Chem., **2017**, *82*, 12416-12429.
6. Karuna Mahato**, Prasanta Ray Bagdi,** Abu T. Khan*, K_2CO_3 catalyzed regioselective synthesis of thieno[2,3-b]thiochromen-4-one oximes: access to the corresponding amine and nitroso derivatives, Org. Biomol. Chem., **2017**, *15*, 5625-5634.
7. Radhakrishna gattu, R. Sidick Basha, **Prasanta Ray Bagdi**, Abu T. Khan*, One-pot three component regioselective synthesis of C1-functionalised 3-arylbenzo[f]quinolone, RSC Adv., **2016**, *6*, 11675-11682.
8. **Prasanta Ray Bagdi**, Sidick Basha R, Abu T. Khan*, Synthesis of 2-triazolyl-imidazo[1,2-a]pyridine through one-pot three-component reaction using nano copper oxide assisted Click-catalyst, RSC Adv., **2015**, *5*, 61337-61344.
9. Karuna Mahato, **Prasanta Ray Bagdi,** Abu T. Khan*, Ytterbium(III)trifluoromethanesulfonate catalysed synthesis of unusual di- and tri-subsituted 3,4-dihydrothiochromeno[3,2-e][1,3]thiazin-5(2H)-one through a pseudo four-component hetero-Diels-Alder reaction, RSC Adv., **2015**, *5*, 48104-48111.
10. Sukhamoy Gorai, **Prasanta Ray Bagdi**, Rituparna Borah, Abu T. Khan*, Debasis Manna*, Insights into the Inhibitory mechanism of Triazole-Based Small Molecules on Phosphatidylinositol-4,5-bisphosphate Binding Pleckstrin Homology Domain, *B. B. Report*, **2015**, *2*, 75.
11. **Prasanta Ray Bagdi,** Sidick Basha R, Pranjal Kumar Baruah, Abu T. Khan*, Copper oxide nanoparticle mediated 'click chemistry' for the synthesis of mono-, bis- and tris-triazole derivatives from 10,10-dipropargyl-9-anthrone as a key building block, RSC Adv., **2014**, *4*, 10652-10659.
12. Karuna Mahato, **Prasanta Ray Bagdi,** Abu T. Khan*, L-Proline catalysed unusual product formation from the reaction of 4-hydroxydithiocoumarin and aldehydes through

	a pseudo three-component reaction, Synlett, **2014**, *25*, 2438-2441. 13. **Prasanta Ray Bagdi**, Sidick Basha R, Mohan Lal, Abu T. Khan*, Bromodimethylsulfonium bromide (BDMS) catalyzed synthesis of substituted pyrroles through a one-pot four-component reaction, Chem. Lett., **2013**, *42*, 939-941. 14. **Prasanta Ray Bagdi**, Sidick Basha R, Mohan Lal, Abu T. Khan*, Cobalttriflate Catalyzed One-pot Synthesis of Fluorophore 1,4-Dihydropyridine derivatives via Hantzsch Reaction, J. Indian Chem. Soc., **2013**, *90*, 1589-1598. (Special Issue in honor of Prof. Sunil Kumar Talapatra). 15. Mohan Lal, **Prasanta Ray Bagdi**, Sidick Basha R, Parameswaran Saravanan, Sanjukta Patra, Abu T. Khan*, Synthesis of tetra-substituted pyrroles, a potential phosphodiesterase 4B inhibitor, through nickel(II) chloride hexahydrate catalyzed one-pot four-component reaction, Tetrahedron Lett., **2012**, *53*, 4145-4150. (Recognized as one of the Top 25 most downloaded article). **16. Prasanta Ray Bagdi,** Abu T. Khan, Click Precursor in 'Click chemistry' for the synthesis of bis-di-triazolyl-anthrone and di-triazolyl-allenyl-anthracene in One-pot Three Component Reaction catalyzed by Copper oxide Nanoparticle in Aqueous medium (Communicated). 17. R. Sidick Basha, **Prasanta Ray Bagdi**, Abu T. Khan, Synthesis and characterization of Symmetrical and Unsymmetrical Vanadium salen complexes (Communicated). 18. Radhakrishna gattu, **Prasanta Ray Bagdi**, R. Sidick Basha, Abu T. Khan, ABC and Pseudo AB type three component reaction for the synthesis of substituted 1,2 and 1,2,3-quinolone derivative catalyzed by (±) Camphor sulfonic acid (Communicated). **[#]Contributed equally**

6.	**References**
	1. Dr. Abu Taleb Khan (Ph.D Supervisor), Professor, Department of Chemistry Indian Institute of Technology Guwahati, Guwahati–781039, Assam, India Vice-Chancellor, Aliah University, IIA/27, New Town, Near Eco-Space, Kolkata-700 156, India, Tel.: +91 361 2582305; Fax: +91 361 2582349 E-mail: atk@iitg.ac.in; prof.atkhan@gmail.com Home page: http://shilloi.iitg.ernet.in/~chem/faculty.html#page=page-1 2. Dr. Bhisma Kumar Patel (Ph.D Co-Supervisor), Professor, Department of Chemistry, Indian Institute of Technology Guwahati, Guwahati–781039, Assam, India, Tel.: +91 361 2582307; Fax: +91 361 2582349 E-mail: patel@iitg.ac.in

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3. Dr. Bhubaneswar Mandal, Department of Chemistry, Indian Institute of Technology Guwahati, North Guwahati, Assam, India, 781039
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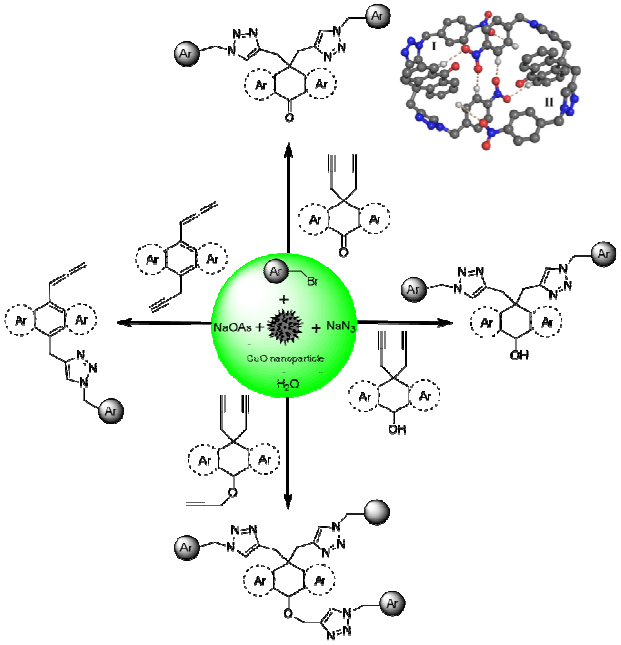
Research Summary

PhD Thesis Title: "Copper Oxide Nanoparticles Assisted Synthesis of 1,4-Triazole Based New

Organic Molecules and Facile Access to N-Heterocycles Using Multicomponent Reactions" **Advisors**: Prof. Abu Taleb Khan & Prof. B.K Patel.

During my PhD period, I have focused my research work, the utility of heterogeneous copper oxide nano catalyst for the synthesis of 1,4-triazole based new organic molecules such as mono-, bis-, tris- and tetra- triazolyl-anthrone, mono- and bis-triazolyl-allenyl-anthracene and 2-triazolylimidazo[1,2-a]pyridine derivatives. Furthermore, the development in multicomponent reaction to transport a new methodology for the synthesis of substituted pyrrole, substituted 1,4-dihydropyridine and fused pyridine derivatives. My Ph.D graduate work focused on the design and synthesis of organic molecules using newer synthetic methodologies as well as multi-step organic synthesis as shown below.

- **Copper oxide nanoparticle mediated 'click chemistry' for the synthesis of mono-, bis- and tris-triazole derivatives using 10,10-dipropargyl-9-anthrone as a key building block** The synthesis of mono-, bis- and tris-triazole derivatives was accomplished using 10,10dipropargyl-9-anthrone as a key starting material. Various acetylenic compounds derived from 10,10-dipropargyl-9-anthrone on reaction with alkyl/benzyl bromides and sodium azide in the presence of 10 mol% of copper oxide nanoparticles along with 20 mol% sodium ascorbate in water afforded a wide variety of triazoles derivatives under heating at 70 °C. The salient features of the present protocol are: mild reaction conditions, a shorter reaction time, the reusability of the catalyst, and its applicability with a wide range of substrates.



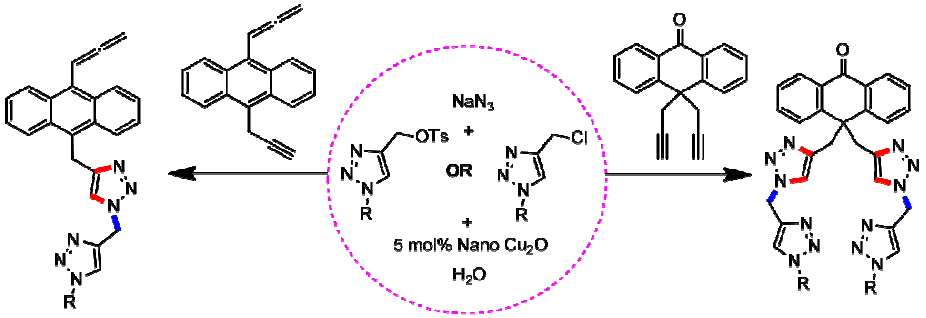
Moreover, the mono-triazole 8b undergoes extended assembly in the solid state forming a zigzag supramolecular structure stabilized by π–π and C–H/π interactions. Interestingly, the single crystal X-ray structure of 9b shows that it forms a supramolecular ball structure stabilized by a combination of C–H/O interaction and hydrogen bonding. Furthermore the presence of water molecules embedded in the crystal lattice of **9b** allows these supramolecular balls to arrange in a chain generating a fascinating supramolecular architecture.

RSC Advances, **2014**, *4*, 10652

- **Click precursor in 'click chemistry' for the synthesis of bis-di-triazolyl-anthrone and ditriazolyl-allenyl-anthracene in One-pot Three Component Reaction catalyzed by Cuprous oxide Nanoparticle in Aqueous medium**

  In the previous paper, we have developed a highly efficient method for the synthesis of various 1,4-triazole based new organic molecules i.e. mono-, bis- and tris-triazole derivatives by employing copper oxide nanoparticles along with sodium ascorbate as a catalyst. The use of excess amount of copper oxide nanoparticles along with the reductant sodium ascorbate brings some limitations to this method which prompted us to look for an alternative protocol which would be free from these short comings.The facts envisaged us that cuprous oxide nanoparticle might be an useful catalyst for the synthesis of 1,4-triazole based organic molecules. Here we would like to report the synthesis of bis-di-triazolyl-

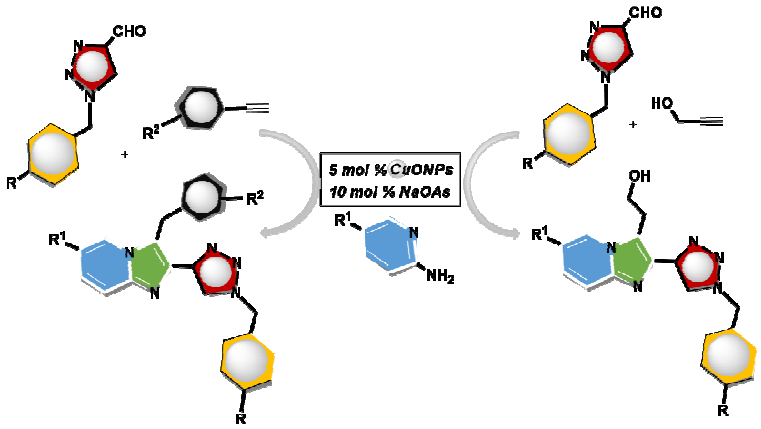
anthrone and di-triazolyl-allenyl-anthracene derivatives using cuprous oxide nanoparticles as a catalyst.



*Communicated (**2020**)*

❖ **Synthesis of 2-triazolyl-imidazo[1,2-a]pyridine through one-pot three-component reaction using nano copper oxide assisted Click-catalyst**

The syntheses of 2-triazolyl imidazo[1,2-a]pyridine were accomplished through three component A3 coupling followed by 5-exo dig cyclisation by employing 1-alkyl-1,2,3-triazole-4carbaldehyde, amidine and terminal alkynes using 5 mol% nanocopper oxide together with 10 mol% sodium ascorbate as a click-catalyst in ethanol at 70 ˚C. The present protocol was further utilized for the synthesis of 2-(2-triazolyl-imidazo[1,2-a]pyridin-3-yl)ethanol.

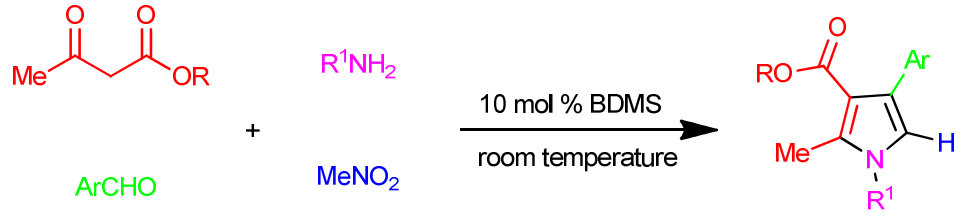


In addition, the molecular structure of **8c** possesses a C–H/π interaction (H17b/C10) along with a peculiar supramolecular layered structure architecture. This protocol features ready recyclability of the catalyst, good yields and wide substrate scope. Moreover, the syntheses of triazolyl precursors (1-alkyl-1,2,3-triazol-4-yl)methanol

have also been achieved through a nano copper oxide mediated click-catalyst in water at 70 °C.

RSC Advances, **2015**, *5*, 61337

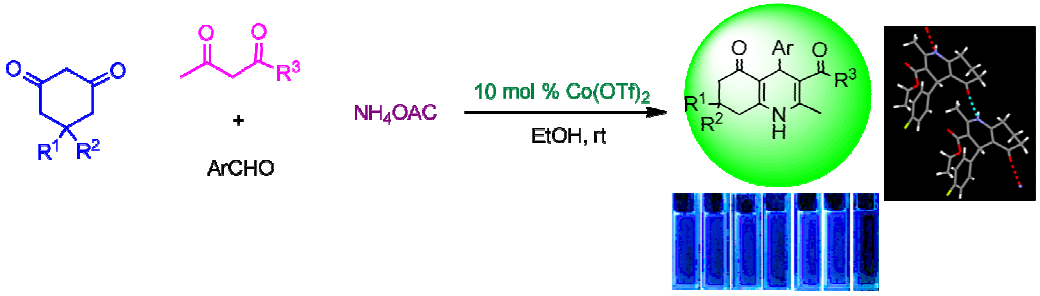
❖ **Bromodimethylsulfonium bromide (BDMS) catalyzed synthesis of substituted pyrroles through a one-pot four-component reaction**



Chemistry Letters, **2013**, 42, 939

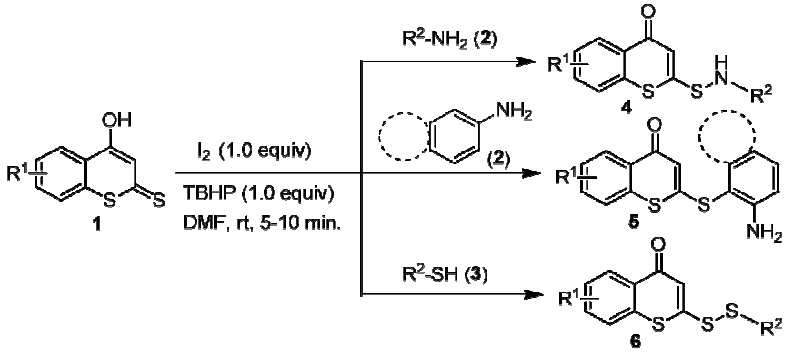
❖ **Cobalt triflate Catalyzed One-pot Synthesis of Fluorophore 1,4-Dihydropyridine derivatives via Hantzsch Reaction**

A wide variety of 1,4-dihydropyridines have been synthesized through one-pot condensation of aromatic aldehydes, β-ketoesters, cyclic 1,3-diones and ammonium acetate using cobalt triflate as a catalyst through Hantzsch reaction. Some of the salient features of the present protocol are shorter reaction time, mild reaction conditions, good yields, non-aqueous work-up, reusability of the catalyst and non-requirement of column chromatographic separation.



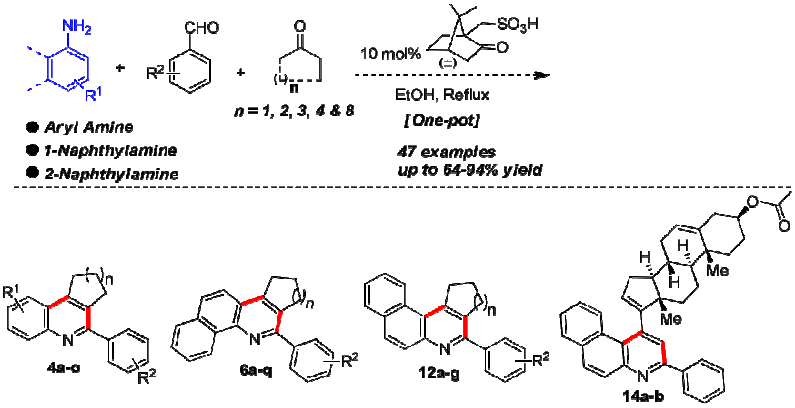
J. Indian Chem. Soc., **2013**, *90*, 1589. *(Special Issue in honor of Prof. Sunil Kumar Talapatra)*

❖ **An Oxidative Cross Coupling Reaction of 4-Hydroxydithiocoumarin and Amines/Thiols Using a Combination of I2 and TBHP: Access to Lead Molecules for Bio-medical Applications**



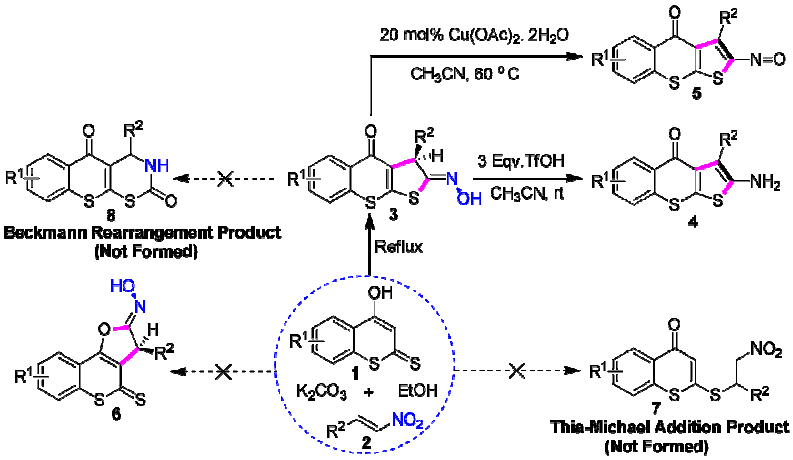
Chem. Commun., **2018,** *54*, 1513

❖ **Camphorsulfonic Acid Catalysed One-Pot Three Component Reaction for the Synthesis of Fused Quinoline and Benzoquinoline Derivatives**



J. Org. Chem., **2017,** *82*, 12416

❖ **K_2CO_3 catalyzed regioselective synthesis of thieno[2,3-b]thiochromen-4-one oximes: access to the corresponding amine and nitroso derivatives**



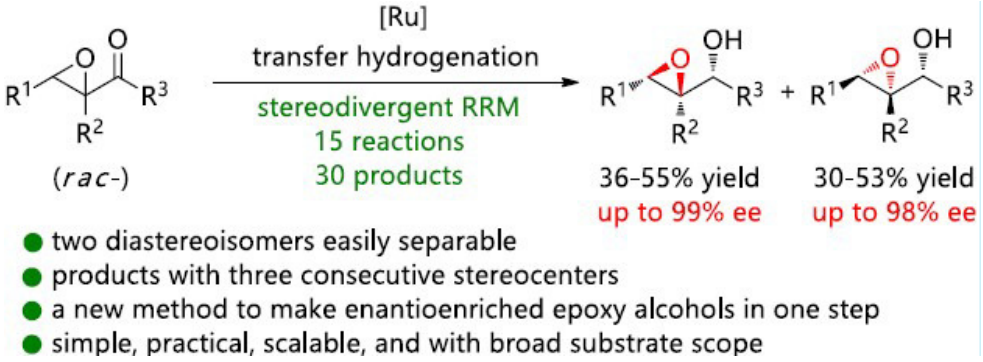
Org. Biomol. Chem., **2017**, *15*, 5625

Postdoctoral Research work

I have completed two years post-doctoral research work in N-Heterocyclic carbene-catalyzed asymmetric synthesis and asymmetric transfer of hydrogenation via dynamic kinetic resolution using new generation Noyori catalyst under advisor Prof. Dr. X. Fang at Fujian Institute of Research on the Structure of Matter, Chinese Academy of Sciences, China from September 2016 to August 2018. Presently, I am doing my 2nd post-doctoral research work in organic synthesis of bioactive molecules and medicinal chemistry at Yunnan University, China.

Stereodivergent Access to Enantioenriched Epoxy Alcohols with Three Stereogenic Centers via Ruthenium-Catalyzed Transfer Hydrogenation (September 2016 to August 2017)

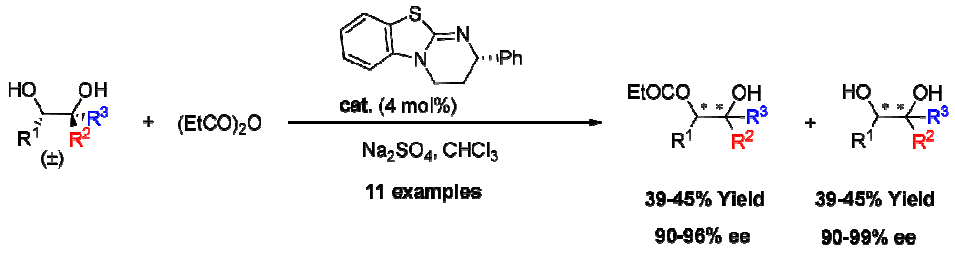
The resolution technique of stereodivergent reaction on racemic mixtures (stereodivergent RRM) was employed for the first time in ruthenium complex catalysed transfer hydrogenation of racemic epoxy ketones, providing a new and very simple method that allows access to enantioenriched epoxy alcohols with three stereogenic centers in a one-step fashion. The protocol features simple reaction conditions, practical operation, ability to scale up, and broad group tolerance as shown in below.



Org. Lett. **2019**, *21*, 5491

Organocatalytic Acylation for the Kinetic Resolution of 1,2-Diol; Secondary vs. Tertiary (September 2017 to August 2018)

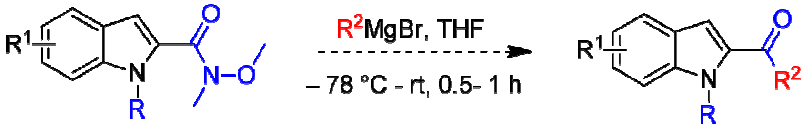
The non-enzymatic acylative kinetic resolution of racemic substituted 1,2-diols (secondary vs. tertiary) is described, with effective enantiodiscrimination achieved using the isothiourea organocatalyst HyperBTM and propionic anhydride. Main effort in this project are separation four enantiomer in single step with good yields and excellent enantioselective of the ester products and chiral 1,2-diols as shown in below.



*Communicated (**2020**)*

Design, Synthesis and Pharmacological Evaluation of N-Protected Propargylic/Allylic Indole-2Carboxamides and N-Protected Propargylic/Allylic - 2-Aroyl-/Alkyl Indoles (March 2019 to February 2020)

We describe the synthesis and anti-inflammatory activities of N-protected propargylic / allylic indole-2-carboxamide and N-protected propargylic / allylic-2-aroyl-/alkyl indole derivatives in good yields from Weinreb amides using Grignard reagent under mild conditions.



R = propargylic / allylic
R^1 = - OCH_3, Cl, Br, F
R^2 = aryl, alkyl

□ Good yields, □ Shorter reaction time, □ Substrate scope,
□ SAR-studies of both substrates and products &
□ Anti-inflammatory activity of both substrates and products

*Communicated (**2020**)*

****** I have changed my name from Prasanta Ray Bagdi to Prasanta Roy**