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### ***PERSONAL***

Date of Birth : 19<sup>th</sup> March, 1986  
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**Current Address:** Department of Chemistry,  
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 India

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### ***ACADEMIC PROFILE***

- 1. Ph. D (Organic Chemistry):** Indian Association for the Cultivation of Science,  
 Jadavpur, Kolkata, India  
**Supervisor:** Prof. Brindaban C. Ranu (FNA, FASc, J C Bose National Fellow).

**Thesis title:** **Synthetic Studies on the Catalysis by Supported Metal, Metal Nanoparticles and Other Benign Materials.**

- 2. M. Sc. (Chemistry):** 2010, IIT-Kharagpur, India (1<sup>st</sup> class: 9.21 CGPA out of 10).  
**(University Rank 1<sup>st</sup>)**

**Thesis title:** **"Synthesis of carbacycles and seven-membered oxacycles by Pd-catalysed intramolecular Heck reaction and intramolecular tandem Michel-Aldol reaction."** **Supervisor:** Prof. Jayanta K. Ray (FRSC)

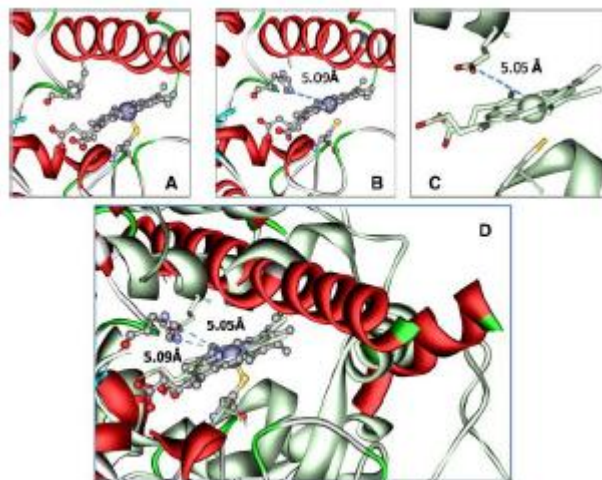
3. **B. Sc. (Chemistry):** 2008, Visva-Bharati university, West Bengal, India (1<sup>st</sup> class: 76.9%). (**University rank 1<sup>st</sup>**)
4. **Higher Secondary Education in Science (10+2):** 2004, Birbhum Zilla School, Birbhum, India (1<sup>st</sup> division: 86.1%).
5. **Secondary Education:** 2002, Birbhum Zilla School, West Bengal, India (1<sup>st</sup> division: 83.1%).

### **ACADEMIC ACHIEVEMENTS AND AWARDS**

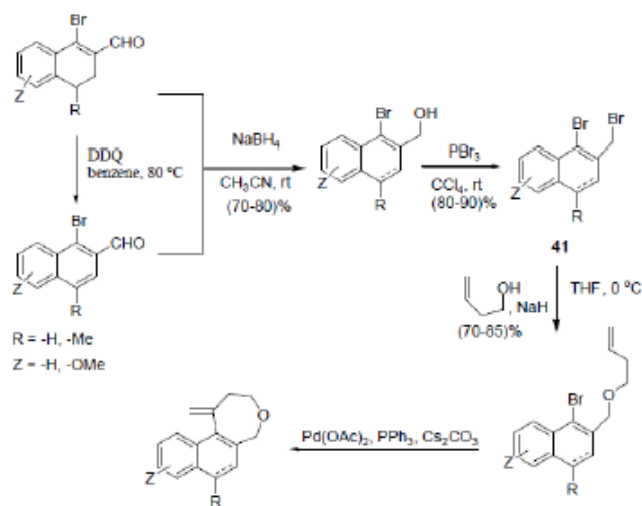
1. University Merit Scholarship for **1<sup>st</sup> Rank holder** in B.Sc. in University.
2. **UGC Merit Scholarship** (One of the most prestigious scholarships in India) for University first rank in B.Sc during the period of 2009-2010.
3. All India rank in JAM-2008 is **38**.
4. **INSTITUTE SILVER MEDAL** for **1<sup>st</sup> position in M.Sc.** in IIT-Kharagpur.
5. **10 pointer** in IIT-Kharagpur in 3<sup>rd</sup> semester in Autumn 2009 (Reportedly only Ten pointer in the past 30 years in Chemistry department of IIT Kharagpur).
6. Selected for Summer Research Fellowship Programme (**SRFP**) in 2009 in **JNCASR**, Bangalore (Only 30 students were selected from all over India).
7. Registered as a **VSRP-2009** (Visiting Students Research Programme) in **TIFR**, Mumbai.
8. **Senior Research Fellowship** (2012-2015) and **Junior Research Fellowship** (2010-2012) from CSIR-New Delhi, India.
9. **National Merit scholarship** for ranking in higher secondary examination (rank-770 out of more than 350000 students).
10. Selected in the **2<sup>nd</sup> Indo-German Symposium on Sustainable Catalysis** in ICT-Mumbai for poster presentation.
11. **Best Poster Award** in International Symposium of **Light in Chemistry, Materials and Biology (LCMB-2014)** held in IIT-Kharagpur.
12. Selected for PhD interview in **BIG-NSE Germany; only 20 students were selected from all over the world.**
12. **DST-DFG Award** of Selection as an **Indian researcher participant** in **65<sup>th</sup> Lindau Nobel Laureate Meeting-2015, Germany** which is dedicated to Chemistry, Physics, Medicine and Physiology (672 research scholars were selected from 88 countries and only 16 research scholars were selected from India.)
13. **Eli Lilly Asia Outstanding Thesis Award 2015** for PhD research in application of sustainable catalysis in organic synthesis.

### PROJECTS TAKEN in M.Sc.

1. **“Enhancement in peroxidase activity in thermophilic Cytochrome P 450(CYP175A1) through rational protein engineering”** under the guidance of **Prof. Shyamalava Mazumdar** in **TIFR Mumbai**. In this project I carried out site – specific mutation of a cyt P-450(A221D) enzyme (changing Alaline into Glutamic acid) and studied the peroxidase activity of the mutated enzyme in different reactions. The mutated enzyme shows appreciable increase in rate of the reaction.

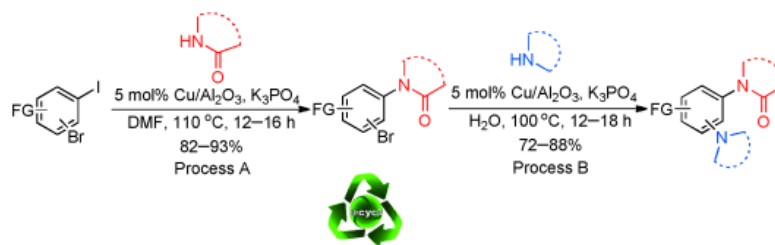


2. **“Synthesis of Carbacycles and seven-membered oxacycles by Pd-catalysed intramolecular Heck reaction and intramolecular tandem Michel-Aldol Reaction”** under the guidance of **Prof. Jayanta K. Ray** in **IIT-Kharagpur**. In this Project I have developed a general method for the synthesis of fused **seven membered oxacycles** derivative by palladium catalyzed intramolecular heck reaction. This methodology can be applied for the synthesis of Naphthoxepine related natural product in due time. I have also developed a new methodology for the synthesis of **cyclopentenones** which are the building block of several drug targets and biologically active molecules.

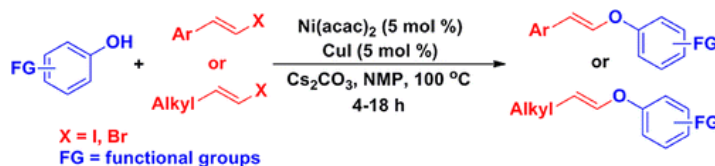


## PUBLICATIONS

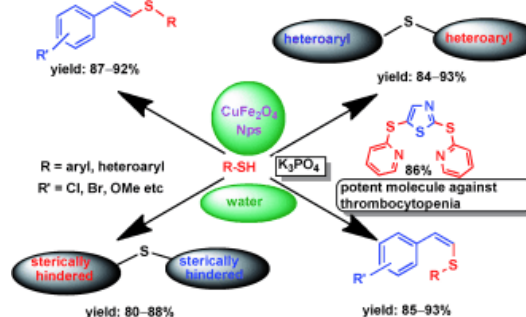
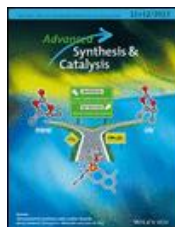
- 1) Heterogeneous Cu(II) catalyzed solvent controlled selective *N*-arylation of cyclic amides and amines with bromo-iodoarenes, **Debasish Kundu**, Sukalyan Bhadra, Nirmalya Mukherjee, Bojja Sreedhar and Brindaban C. Ranu, *Chem. -Eur. J.*, **2013**, *19*, 15759.



- 2) Copper assisted nickel catalyzed ligand free C(*sp*<sup>2</sup>)-O cross coupling of vinyl halides and phenols, **Debasish Kundu**, Pintu maity and Brindaban C. Ranu, *Org. Lett.*, **2014**, *6*, 1040.



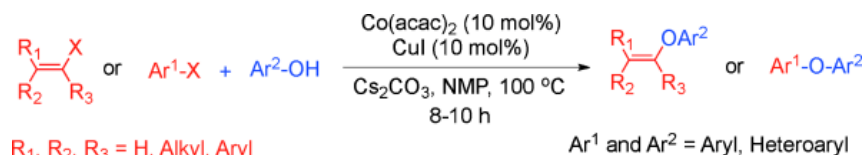
- 3) Magnetically Separable CuFe<sub>2</sub>O<sub>4</sub> Nanoparticles Catalyzed Ligand-free C-S Coupling in Water: Access to (*E*)- and (*Z*)-Styrenyl-, Heteroaryl and Sterically Hindered Aryl Sulfides, **Debasish Kundu**, Tanmay chatterjee, Brindaban C. Ranu., *Adv. Synth. Catal.*, **2013**, *355*(11+12), 2285.



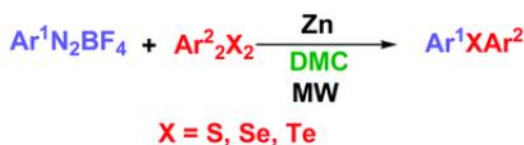
- 4) Visible light photocatalyzed direct conversion of aryl-/heteroaryl amines to selenides at room temperature, **Debasish Kundu**, Sabir Ahammed and Brindaban C. Ranu, *Org. Lett.*, **2014**, *6*, 1814.



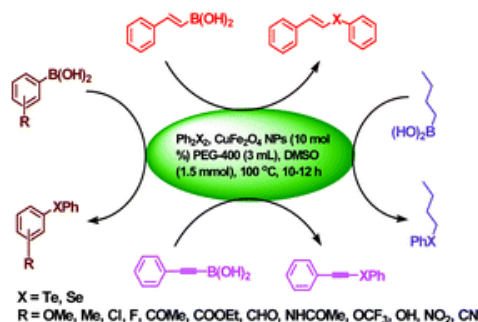
- 5) First Cobalt-catalyzed Intermolecular C(sp<sup>2</sup>)-O Cross-Coupling, **Debasish Kundu**, Manisha Tripathy, Pintu Maity, Brindaban C. Ranu, *Chem.-Eur. J.* **2015**, *21*, 8727.



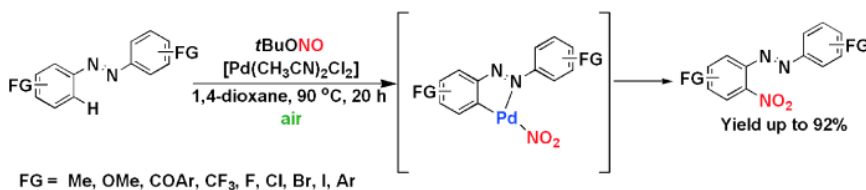
- 6) Microwave-assisted reaction of aryl diazonium fluoroborate and diaryldichalcogenides in dimethyl carbonate: a general procedure for the synthesis of unsymmetrical diaryl chalcogenides, **Debasish Kundu**, Sabir Ahammed and Brindaban C. Ranu, *Green Chem.*, **2012**, *14*, 2024.



- 7) Magnetically separable and recyclable CuFe<sub>2</sub>O<sub>4</sub> nanoparticle catalysed coupling of organoboronic acids and dichalcogenides in PEG-400: A general protocol for the synthesis of organochalcogenides, **Debasish Kundu**, Nirmalya Mukherjee and Brindaban C. Ranu, *RSC Adv.*, **2013**, *3*, 117–125.



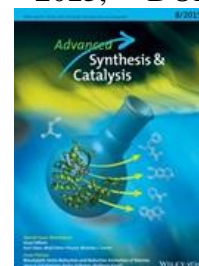
- 8) *Tert*-butyl nitrite mediated regiospecific nitration of (*E*)-azoarenes via palladium catalyzed directed C-H activation, Biju Majhi, **Debasish Kundu**, Sabir Ahammed and Brindaban C. Ranu, *Chem.-Eur. J.* **2014**, *20*, 9862.



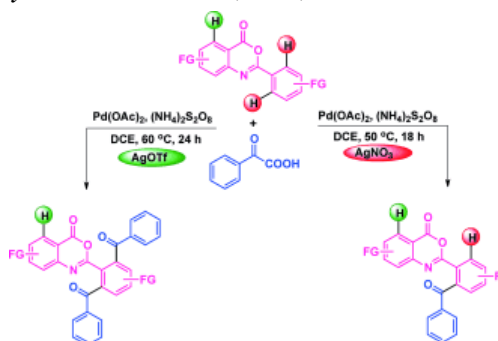
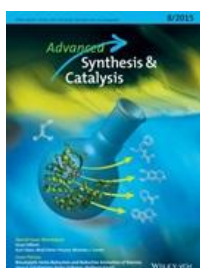




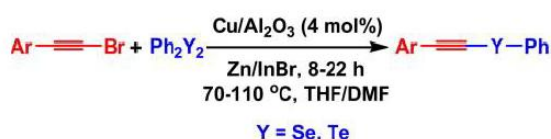
- 14) Nickel-Copper Catalyzed C(sp<sup>2</sup>)-N Cross Coupling of Cyclic and Bridged Amides: An Access to Cyclic Enamides and Alkenyl Vince Lactams, Pintu Maity, Debasish Kundu and Brindaban C. Ranu, *Adv. Synth. Catal.* **2015**, DOI 10.1002/adsc.201500457 (accepted).



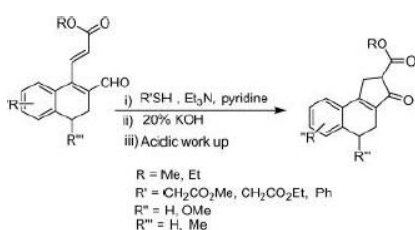
- 15) Palladium-Catalyzed Decarboxylative Selective Acylation of 4H-benzo[d][1,3]oxazin-4-one Derivatives with  $\alpha$ -Oxocarboxylic acids via Cyclic Imine- N-directed Aryl C-H Activation, Biju Majhi, Debasish Kundu, Tubai Ghosh and Brindaban C. Ranu, *Adv. Synth. Catal.* **2016**, 358, 283.



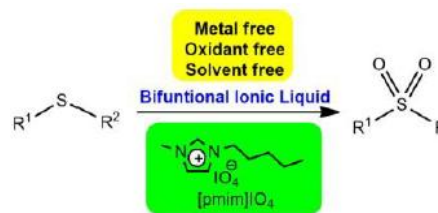
- 16) An efficient and general procedure for the synthesis of alkynyl chalcogenides(selenides and tellurides) by alumina-supported Cu(II)-catalyzed reaction of alkynyl bromides and diphenyl dichalcogenides; Sabir Ahammed, Sukalyan Bhadra, **Debasish Kundu**, Bojja Sreedhar and Brindaban C. Ranu; *Tetrahedron*, **2012**, 68, 10542.



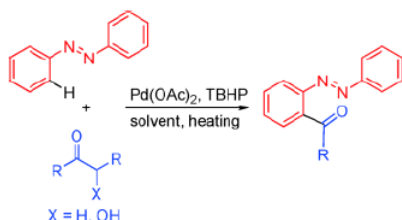
- 17) Thiol-mediated tandem Michel-aldol reaction: a convenient method for the synthesis of fused cyclopentenones, Subhankar Samanta, Nasima Yasmin, **Debasish Kundu** and Jayanta K. Ray., *Tetrahedron Lett.*, **2010**, 51, 4132-4136



- 18) Metal and solvent free selective oxidation of sulfides to sulfone using bifunctional ionic liquid [pmim]IO<sub>4</sub>, Sabir Ahammed, **Debasish Kundu** and Brindaban C. Ranu, *Tetrahedron Lett.*, **2015**, 56, 335.

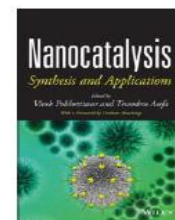


- 19) Palladium-Catalyzed Oxidative C—C Bond Cleavage of  $\alpha$ -Hydroxyketones: Application to C—H Acylation of Azoarenes and Synthesis of a Liver(X) Receptor Agonist, B. Majhi, S. Ahammed, **D. Kundu**, B. C. Ranu, *Asi. J. Org. Chem.* DOI: 10.1002/ajoc.201402280.



- 20) Ionic liquid as base and phase transfer agent: A green protocol for the synthesis of diaryl sulphides in water, **Debasish Kundu** and Brindaban C. Ranu, *J. Ind. Chem. Soc.*, **2013**, 90, 1761. [Invited Manuscript in honour of Prof. Sunil Kumar Talapatra on the occasion of his 80<sup>th</sup> birthday.

- 21) Book Chapter on Aryl Carbon-Heteroatom Coupling Reactions Using Nano-Metal Catalyst, in **Nanocatalysis: Synthesis and Applications** (eds V. Polshettiwar and T. Asefa), John Wiley Sons, Inc., Hoboken, NJ, USA. doi: 10.1002/9781118609811.ch 6, pp 189-220, Brindaban C. Ranu, Debasree Saha, **Debasish Kundu** and Nirmalya Mukherjee.



## PROFESSIONAL COMPETENCE

- \* **Operational experience:** (i) FT-NMR (<sup>1</sup>H, <sup>13</sup>C NMR)  
 (ii) UV-VIS Spectrophotometer.  
 (iii) Fluorescence Spectrophotometer.  
 (iv) UV-VIS spectrometer  
 (v) EPR



- (vi) TEM
- (vii) SEM
- (viii) Liquid Chromatography Mass Spectra
- (ix) Microwave reactor (CEM Discover)
- (X) Cell Culture and protein extraction

- \* **Synthetic skill:** (i) Synthesis of useful organic molecules  
 (ii) Chromatographic purification  
 (iii) Spectral analysis for characterization of the molecules,  
 (iv) Designing of heterogeneous catalysts, nano-catalysts and their application in synthetic organic chemistry

## ***PARTICIPATIONS***

1. 13<sup>th</sup> CRSI National Symposium in Chemistry (NISER and KIIT Bhubaneswar, India), 4-6<sup>th</sup> February, 2011. (**Attendee**).
2. International Symposium on Chemistry and Complexity (IACS-Kolkata), 6-8<sup>th</sup> December, 2011. (**Attendee**).
3. 7<sup>th</sup> J-NOST conference (IISER Mohali), 15-18<sup>th</sup> December, 2011, (**Oral Presentation**), *Copper Catalysed Solvent Selective Differential N-Aylations of Cyclic amides and amines with Bromo-iodobenzenes*.
4. National Seminar on “Recent Trends in Chemical Research: Challenges Ahead” (Guru Ghasidas University, Bilaspur), 30-31<sup>st</sup> March, 2012, (**Poster Presentation**), *Microwave-assisted reaction of aryl diazonium fluoroborate and diaryl dichalcogenides in dimethylcarbonate: A general procedure for the synthesis of unsymmetrical diaryl chalcogenides*.
5. ACS-Meeting at IACS-Kolkata, 12<sup>th</sup> October, 2012, (**Attendee**).
6. **2<sup>nd</sup> International Indo-German Symposium** on “Green Chemistry and Catalysis for Sustainable Development” (ICT-Mumbai, Matunga), 29-31<sup>st</sup> October, 2012, (**Poster Presentation**), *Copper Catalysed Solvent Selective Differential N-Aylations of Cyclic amides and amines with Bromo-iodobenzenes*.
7. 8<sup>th</sup> J-NOST Conference (IIT-Guwahati), 8-10<sup>th</sup> December, 2012, (**Oral Presentation**), *CuFe<sub>2</sub>O<sub>4</sub> Nanoparticle Catalysed Coupling of Different Types of Organoboronic Acids and Dichalcogenides in PEG-400*.

8. International Symposium of Light in Chemistry, Materials and Biology (LCMB-2014) (IIT-Kharagpur), 24-25<sup>th</sup> February, 2014, (**Poster Presentation**), *Visible Light Photocatalyzed Direct Conversion of Aryl-/Heteroarylamines to Selenides at Room Temperature.*

### *Visited Research Institutes*

- 1) Visiting researcher in **University of Tübingen**, Germany.
- 2) Visiting researcher in **Spemann Graduate School for biology and medicine (SGBM), University of Freiburg**, Germany.
- 3) Visiting researcher in **Max-Planck –Institute for the Science of Light (MPL)**, Erlangen, Germany.
- 4) Visiting researcher in **Institute of Molecular Biology gGmbH (IMB)**, Mainz, Germany.
- 5) Visiting researcher in **Collaborative Research Center (SFB) 1083: Structure and Dynamics of Internal Interfaces**, Marburg, Germany.
- 6) Visiting researcher in **Cluster of Excellence (EXC 147): Cardio Pulmonary System**, Giessen, Germany.
- 7) Visiting researcher in **Summer School of the IRTG 1642 (International Research Training Group)**, Mittelwihr, France.
- 8) Visiting researcher in **IIT-Guwahati** during oral presentation in 8<sup>th</sup> J-NOST conference.
- 9) Visiting researcher in **IISER- Mohali** during oral presentation in 7<sup>th</sup> J-NOST conference.
- 10) Visiting researcher in **ICT-Mumbai** during 2<sup>nd</sup> International Indo-German Symposium on Sustainable catalysis.
- 11) Visiting Researcher in **Tata Institute of Fundamental Research (TIFR-Mumbai)** in visiting student's research programme (VSRP-2009).

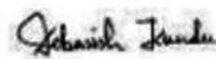
## References

1. **Dr. Brindaban C. Ranu** (FASc, FNA, J C Bose National Fellow)  
Department of Organic Chemistry, Indian Association for the  
Cultivation of Science, Jadavpur, Kolkata-700032, India.  
Email: [ocbcr@iacs.res.in](mailto:ocbcr@iacs.res.in), Contact No. +91-9433053856
2. **Prof. Jayanta K. Ray** (FRSC)  
Department of Chemistry, IIT-Kharagpur, Kharagpur-721302, India  
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### *Declaration*

I hereby declare that all the above mentioned information given is true to the best of my knowledge.

Date : 17/08/2015



Signature