

# Curriculum Vitae

## Dr. Biplab Maji

Assistant Professor  
Indian Institute of Science Education and Research Kolkata  
Mohanpur-741246, Nadia, WB  
Email: [biplab.maji@iiserkol.ac.in](mailto:biplab.maji@iiserkol.ac.in)  
Born: 26<sup>th</sup> January, 1987, Howrah, India



### Research interest

- **Molecular catalysis:** Metal catalysis, Organocatalysis, Photoredox catalysis.
- **Development of new methodology:** Carbon-carbon and Carbon-hetero atom bonds formation, cascade reactions
- **Physical organic chemistry:** Kinetics and mechanisms
- **Organic synthesis:** Synthesis of natural products and bioactive compounds

### Professional Experiences

- July, 2016- Assistant Professor  
Indian Institute of Science Education and Research Kolkata, Mohanpur, India
- 2015-2016 Alexander von Humboldt fellow  
Host: **Prof. Dr. Frank Glorius**  
Westfälische Wilhelms-Universität Münster, Germany
- 2013-2015 Postdoc  
Supervisor: **Prof. Dr. Hisashi Yamamoto**  
Molecular Catalyst Research Center, Chubu University, Japan
- 2012-2013 Postdoc  
Supervisor: **Prof. Dr. Herbert Mayr**  
Ludwig-Maximilians-Universität München, Germany
- 2009-2012 Ph.D.  
Supervisor: **Prof. Dr. Herbert Mayr**  
Ludwig-Maximilians-Universität München, Germany  
Thesis: **Reactivity parameters for understanding nucleophilic organocatalysis**
- 2008-2009 Master thesis  
Supervisor: **Prof. Dr. Manas K. Ghorai**  
Indian Institute of Technology, Kanpur, India  
Thesis: **Synthesis and ring-opening rearrangement of azetidines: Application towards the synthesis of amino-tetrahydrofurans and imino-cyclitols**
- 2008 Summer internship  
Supervisor: **Prof. Dr. P. K. Bharadwaj**  
Indian Institute of Technology, Kanpur, India

### Educational Qualifications

- 2012 **Ph.D.**, Supervisor: **Prof. Dr. Herbert Mayr**  
Ludwig-Maximilians-Universität München, Germany, Grade: **summa cum laude**
- 2009 **M.Sc.**, Chemistry  
Indian Institute of Technology, Kanpur, India, Grade: **9.7/10**
- 2007 **B.Sc.**, Chemistry (Honours)  
Ramakrishna Mission Vidyamandira, University of Calcutta, Kolkata, India, Grade: **77.75%**

## Awards & Distinctions

- Alexander von Humboldt Fellowship (2015).
- “Förderpreis 2013” (Promotionspreis) for best Ph.D. theses from all Science Faculties of Ludwig-Maximilians-Universität München, Germany
- Award of the Dr. Klaus Römer-Stiftung for PhD students (2012)

## Publications

Total number of publications = 25.

Total number of citations = 587. (Google Scholar, 15<sup>th</sup> Sept, 2016).

- 25 **Ruthenium-NHC Catalyzed  $\alpha$ -Alkylation of Methylene Ketones Provides Branched Products through Borrowing Hydrogen Strategy**  
C. Schlepforst, B. Maji, F. Glorius\*, *ACS Catalysis* **2016**, 6, 4184–4188.
- 24 **Catalytic Enantioselective Nitroso Diels-Alder Reaction**  
B. Maji\*, H. Yamamoto\*, *J. Am. Chem. Soc.* **2015**, 137, 15957–15963.
- 23 **Use of In Situ Generated Nitrosocarbonyl Compounds in Catalytic Asymmetric  $\alpha$ -Amination and  $\alpha$ -Hydroxylation Reactions**  
B. Maji\*, H. Yamamoto\*, *Bull. Chem. Soc. Jpn.* **2015**, 88, 753–762.  
*Selected as Cover Page.*
- 22 **Asymmetric Synthesis of Tertiary  $\alpha$ -Hydroxy Phosphonic Acid Derivatives under Aerobic Oxidation Condition**  
B. Maji\*, H. Yamamoto\*, *Synlett.* **2015**, 26, 1528–1532.
- 21 **Scales of Lewis Basicities toward C-centered Lewis Acids (Carbocations)**  
H. Mayr\*, J. Ammer, M. Baidya, B. Maji, T. A. Nigst, A. R. Ofial, T. Singer, *J. Am. Chem. Soc.* **2015**, 137, 2580–2599.  
*Selected as Cover Page.*  
*Highlighted as Spotlights.*
- 20 **Copper-Catalyzed Asymmetric Synthesis of Tertiary  $\alpha$ -Hydroxy Phosphonic Acid Derivatives with In Situ Generated Nitrosocarbonyl Compounds as the Oxygen Source**  
B. Maji\*, H. Yamamoto\*, *Angew. Chem. Int. Ed.* **2014**, 53, 14472–14475.  
*Selected as Hot Paper by Angewandte Chemie.*
- 19 **Asymmetric construction of quaternary stereocenters by magnesium catalysed direct amination of  $\beta$ -ketoesters using in situ generated nitrosocarbonyl compounds as nitrogen sources**  
B. Maji\*, M. Baidya, H. Yamamoto\*, *Chem. Sci.* **2014**, 5, 3941–3945.  
*Highlighted in SynFacts.*
- 18 **Proline-Tetrazole-Catalyzed Enantioselective N-Nitroso Aldol Reaction of Aldehydes with In Situ Generated Nitrosocarbonyl Compounds**  
B. Maji\*, H. Yamamoto\*, *Angew. Chem. Int. Ed.* **2014**, 53, 8714–8717.  
*Highlighted in SynFacts.*
- 17 **Ambident Reactivities of Formaldehyde N,N-Dialkylhydrazones**  
B. Maji\*, K. Troshin, H. Mayr\*, *Angew. Chem. Int. Ed.* **2013**, 52, 11900–11904.
- 16 **Structures and Ambident Reactivities of Azolium Enolates**  
B. Maji\*, H. Mayr\*, *Angew. Chem. Int. Ed.* **2013**, 52, 11163–11167
- 15 **Nucleophilic Reactivities of Schiff Bases**  
B. Maji, H. Mayr\*, *Z. Naturforsch. B.* **2013**, 68b, 693–699.

- 14 **Nucleophilic reactivities of 2-imidazolines and related N-heterocyclic compounds**  
B. Maji, M. Baidya, J. Ammer, S. Kobayashi, P. Mayer, A. R. Ofial, H. Mayr\*, *Eur. J. Org. Chem.* **2013**, 2013, 3369–3377.
- 13 **A quantitative approach to nucleophilic organocatalysis**  
H. Mayr\*, S. Lakhdar, B. Maji, A. R. Ofial, *Beilstein J. Org. Chem.* **2012**, 8, 1458–1478.
- 12 **Structures and Reactivities of O-Methylated Breslow Intermediates**  
B. Maji, H. Mayr\*, *Angew. Chem. Int. Ed.* **2012**, 51, 10408–10412.
- 11 **(E)-5-(Methoxy(phenyl)methylene)-1,3,4-triphenyl-4,5-dihydro-1H-1,2,4-triazole**  
B. Maji, G. Berionni, H. Mayr, P. Mayer\*, *Acta Crystallogr., Sect. E: Struct. Rep. Online* **2012**, 68, o3307.
- 10 **(Z)-2-[Methoxy(phenyl)methylidene]-3,4,5-trimethyl-2,3-dihydro-1,3-thiazole**  
B. Maji, H. Mayr, P. Mayer\*, *Acta Crystallogr., Sect. E: Struct. Rep. Online* **2012**, 68, o2644.
- 9 **Nucleophilic Reactivity of Deoxy-Breslow-Intermediates: How Does Aromaticity Affect the Catalytic Activity of N-Heterocyclic Carbenes?**  
B. Maji, M. Horn, H. Mayr\*, *Angew. Chem. Int. Ed.* **2012**, 51, 6231–6235.  
*Selected as Hot Paper by Angewandte Chemie.*
- 8 **Guanidines: Highly Nucleophilic Organocatalysts**  
B. Maji, D. S. Stephenson, H. Mayr\*, *ChemCatChem* **2012**, 4, 993–999.
- 7 **Imidazolidinone-Derived Enamines: Nucleophiles with Low Reactivity**  
S. Lakhdar\*, B. Maji, H. Mayr\*, *Angew. Chem. Int. Ed.* **2012**, 51, 5739–5742.  
*Selected as Hot Paper by Angewandte Chemie.*
- 6 **Nucleophilic Addition of Enols and Enamines to  $\alpha,\beta$ -Unsaturated Acyl Azoliums: Mechanistic Studies**  
R. C. Samanta, B. Maji, S. De Sarkar, K. Bergander, R. Fröhlich, C. Mück-Lichtenfeld\*, H. Mayr\*, A. Studer\*, *Angew. Chem. Int. Ed.* **2012**, 51, 5234–5238.
- 5 **Nucleophilicity Parameters of Enamides and their Implications for Organocatalytic Transformations**  
B. Maji, S. Lakhdar, H. Mayr\*, *Chem. Eur. J.* **2012**, 18, 5732–5740.
- 4 **Nucleophilicity parameters for designing transition metal-free C-C bond forming reactions of organoboron compounds**  
G. Berionni, B. Maji, P. Knochel\*, H. Mayr\*, *Chem. Sci.* **2012**, 3, 878–882.
- 3 **Characterization of the nucleophilic reactivities of thiocarboxylate, dithiocarbonate and dithiocarbamate anions**  
X.-H. Duan, B. Maji, H. Mayr\*, *Org. Biomol. Chem.* **2011**, 9, 8046–8050.
- 2 **Nucleophilicities and Lewis Basicities of Isothiourea Derivatives**  
B. Maji, C. Joannesse, T. A. Nigst, A. D. Smith, H. Mayr\*, *J. Org. Chem.* **2011**, 76, 5104–5112.
- 1 **N-Heterocyclic Carbenes: Organocatalysts with Moderate Nucleophilicity but Extraordinarily High Lewis Basicity**  
B. Maji, M. Breugst, H. Mayr\*, *Angew. Chem. Int. Ed.* **2011**, 50, 6915–6919.  
*Selected as Hot Paper by Angewandte Chemie.*

## Conferences and Meeting Attended

- Jun 2016 Tetrahedron Symposium, Sitges (near Barcelona), Spain
- May 2014 Poster presentation  
Title: **Use of *in situ* generated nitrosocarbonyl compounds in catalytic asymmetric  $\alpha$ -amination and  $\alpha$ -hydroxylation reactions**  
ACT-C meeting, Tokyo, Japan
- Apr 2013 Oral presentation  
Title: **Synthesis and Reactivities of Azolium Enolates**  
COST Action on Organocatalysis, 4<sup>th</sup> ORCA summit, University of Amsterdam, Nederland
- Nov 2012 Oral presentation  
Title: **Structures and Reactivities of Intermediates in Organocatalytic Reactions**  
COST Action on Organocatalysis, ORCA summit, University of Athens, Greece
- Mar 2012 Oral presentation  
Title: **Reactivity Parameters of the Intermediates in NHC Catalyzed Reactions**  
COST Action on Organocatalysis, ORCA summit, Aix-Marseille University, France
- Sept 2011 Oral presentation  
Title: **Reactivity Parameters for NHC Organocatalysts**  
European Symposium on Organic Reactivity (ESOR 2011), Tartu, Estonia
- Jul 2010 Poster presentation  
Title: **General Base Catalysis in the Reactions of Enamides with Iminium Ions**  
International Symposium on Organocatalysis (ISO $\mu$  2010), Mülheim an der Ruhr, Germany