Srimanta Manna

Ramanujan Faculty Fellow, NIPER Mohali
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Total publications: 28,
Patents: 2, Book chapter : 1.

Citations: 2221,

h-index : 23

Professional Experiences

NIPER Mohali, Punjab, India
Ramanujan Faculty Fellow, NIPER Mohali
Department of Pharmaceutical Technology (Process Chemistry) 2023 to date

University of Cambridge, UK 2022-2023
Wellcome Trust Fellow | Advisor: Prof. Matthew Gaunt
Research: *Photoredox-catalyzed RNA Bioconjugation*

Stockholm University, Sweden
2020-2022
SOEB Postdoctoral Fellow |Advisor: Prof. Jan-Erling Bäckvall
Research: *Iron(II)-Catalyzed Biomimetic Aerobic Oxidation*

The University of Manchester, UK 2017-2020
Marie Curie Postdoctoral Fellow |Advisor: Prof. David J. Procter
Research: *Copper-Catalyzed Asymmetric Multicomponent Coupling*

Education

Max Planck Institute of Molecular Physiology, Dortmund, Germany 2013-2017
Doctor of Philosophy in Organic Chemistry (*Summa Cum Laude*),
Advisor: Prof. Andrey P. Antonchick and Prof. Herbert Waldmann
Thesis title: *Development of Novel Oxidative Annulations via C-H Bond Functionalization*

Indian Institute of Technology, Bombay, India 2010-2012

Master of Science in Organic Chemistry

Advisor: Prof. Debabrata Maiti

Thesis title: *ipso-Nitration of Arylboronic Acids with Bismuth Nitrate and Perdisulfate*

Ramakrishna Mission VC College (University of Calcutta), India 2007-2010

Bachelor of Science in Chemistry, Physics and Mathematics

Grants, Awards and Honors

Ramanujan Fellowship by SERB/DST 2023

Wellcome Trust Fellow, University of Cambridge 2022

SEOB Postdoctoral Fellowship, Stockholm University 2020

Marie Skłodowska-Curie Individual Fellowship (H2020-MSCA-IF-2018-EF)2018–2020

EPSRC Postdoctoral Fellowship, University of Manchester, UK 2017

Max Planck Fellowship for PhD Studies, Dortmund, Germany 2013

Awarded Summa Cum Laude grade (An *outstanding achievement*) in PhD 2013

Awarded travel grants for the 18th JCF Frühjahrssymposium 2016, Kiel Germany 2016

Awarded Best Cited Paper at Indian Institute of Technology Bombay, India 2014

Merit-Cum-Means Scholarship for MSc Studies, IIT, Bombay 2010

Publications and Patents

28. **Manna, S.*,** Copper-Catalyzed Diastereo- and Enantioselective Borylative Cyclization.

Catalysts 2022, *12*, 734. **IF = 4.51**

Publications during postdoc period: June, 2017– Present

27 **Manna, S**.; † Peters, J.; † Bermejo-López, A.; Himo, F.; Bäckvall, J.-E, Mechanistic Studies on Iron-Catalyzed Dehydrogenation of Amines Involving Cyclopentadienone Iron Complexes. Evidence for Stepwise Hydride and Proton Transfer.

ACS Catal., 2023, *13,* 8477-8484. **IF = 13.70**

26 **Manna, S**.; † Dherbassy, Q.; † Shi, C.; Prasitwatcharakorn, W.; Crisenza, G. E. M.; Perry, G. J. P.; Procter, D. J., Enantioselective copper-catalyzed borylative cyclization for the synthesis of quinazolinones.

Angew. Chem. Int. Ed., 2021, *60,* 14355-14359. **IF = 16.82**

25. Guðmundsson, A.;[†] **Manna, S.**;[†]Bäckvall, J.-E., Iron(II)-Catalyzed Aerobic Biomimetic Oxidation of Amines using a Hybrid Hydroquinone/Cobalt Catalyst as Electron Transfer Mediator.

    Angew. Chem. Int. Ed. 2021, *60,* 11819 -1182. **IF = 16.82** (Selected as VIP paper)

24. **Manna, S.**; Kong, W.-J.; Bäckvall, J.-E., Iron(II)-Catalyzed Aerobic Biomimetic Oxidation of N-heterocycles.

    Chem. Eur. J. 2021, *27*, 13725-13729. **IF = 5.00**

23. **Manna, S.**; Quentin D.; Perry, G. J. P.; Procter, D.J Enantio-and Diastereoselective Synthesis of Homopropargyl Amines by Copper-Catalyzed Coupling of Imines, 1,3-Enynes, and Diborons.

    Angew. Chem. Int. Ed. 2020*, 59,* 4879-4882**. IF = 16.82**

22. **Manna, S.**,[†] Quentin D.,[†] Talbot, F. J. T., Prasitwatcharakorn, W., Perry, G. J. P., Procter, D.J., Copper-catalyzed borofunctionalization of enynes, ***Chem. Sci.*** 2020. *11*, 11380-11393. **IF = 9.97**

21. Talbot, F. J. T.,[†] Quentin D.,[†] **Manna, S.**, Shi, S., Zhang, S., Perry, G. J. P., Procter, D.J, Copper-Catalyzed Borylative Couplings with C–N Electrophiles.

    Angew. Chem. Int. Ed. 2020*, 59,* 20278-20289**. IF = 16.82**

Publications during PhD: July, 2013– June, 2017

20. **Manna, S.**; Antonchick, A. P., Catalytic Transfer Hydrogenation Using Biomass as Hydrogen Source. ***ChemSusChem*** 2019, *12*, 3094-3098. **IF = 9.14**

19. **Manna, S**.; Antonchick, A. P., A Metal-Free Oxidative Dehydrogenative Diels–Alder Reaction for Selective Functionalization of Alkylbenzenes. ***Chem. Eur. J.*** 2017, *23*, 7825-7829. **IF = 5.00**

18. Bering, L.; **Manna, S**.; Antonchick, A. P., Sustainable, Oxidative, and Metal-Free Annulation.

    Chem. Eur. J. 2017, *23*, 10936-10946. **IF = 5.23**

17. **Manna, S**.; Antonchick, A. P., [1+1+1] Cyclotrimerization for the Synthesis of Cyclopropanes.

    Angew. Chem. Int. Ed. **2016,** *55*, 5290-5293. **IF = 18.82**

(Selected as VIP paper, Highlighted in ***Chemical & Engineering News*** 2016, 94,10. Highlighted in ***Angew. Chem., Int. Ed***. 2016, 55, by John C. Walton: A Valuable Upgrade to the Portfolio of Cycloaddition Reactions. Highlighted in ***ChemInform*** Editor's Choice (RxnFinder)

16. Caporaso, R.; **Manna, S.**; Zinken, S.; Kochnev, A. R.; Lukyanenko, E. R.; Kurkin, A. V.; Antonchick, A. P., Radical trideuteromethylation with deuterated dimethyl sulfoxide in the synthesis of heterocycles and labelled building blocks. ***Chem. Commun.*** 2016, *52*, 12486-12489. **IF = 6.22**
15. Narayan, R.; **Manna, S.**; Antonchick, A. P., Hypervalent Iodine(III) in Direct Carbon–Hydrogen Bond Functionalization. ***Synlett*** 2015, *26*, 1785-1803. **IF = 2.63**
14. **Manna, S.**; Serebrennikova, P. O.; Utepova, I. A.; Antonchick, A. P.; Chupakhin, O. N., Hypervalent Iodine(III) in Direct Oxidative Amination of Arenes with Heteroaromatic Amines.

    Org. Lett. 2015, *17*, 4588-4591. **IF = 6.00**
13. **Manna, S.;** Narayan, R.; Golz, C.; Strohmann, C.; Antonchick, A. P., Regioselective annulation of nitrosopyridine with alkynes: straightforward synthesis of N-oxide-imidazopyridines.

    Chem. Commun. 2015, *51*, 6119-6122. **IF = 6.22**
12. **Manna, S.**; Antonchick, A. P., Copper-Catalyzed (2+1) Annulation of Acetophenones with Maleimides: Direct Synthesis of Cyclopropanes. ***Angew. Chem. Int. Ed***. 2015**,** *54*, 14845-14848. **IF = 16.82**
11. **Manna, S.**; Antonchick, A. P., Copper(I)-Catalyzed Radical Addition of Acetophenones to Alkynes in Furan Synthesis. ***Org. Lett.*** 2015, *17*, 4300-4303. **IF = 6.00** (Highlighted in ***Organic Chemistry Portal***)
10. **Manna, S**.; Matcha, K.; Antonchick, A. P., Metal-Free Annulation of Arenes with 2-Aminopyridine Derivatives: The Methyl Group as a Traceless Non-Chelating Directing Group.

    Angew. Chem. Int. Ed. 2014, *53*, 8163-8166. **IF = 16.82**
9. **Manna, S.**; Antonchick, A. P., Organocatalytic Oxidative Annulation of Benzamide Derivatives with Alkynes. ***Angew. Chem. Int. Ed.*** 2014, *53*, 7324-7327. **IF = 16.82**
    (Highlighted in ***Synfacts*** 2014, 871 , Highlighted in ***ChemCatChem*****,** 2015, 7, 223)

Work done during M.Sc thesis

8. Sharma, U.; Naveen, T.; Maji, A.; **Manna, S.**; Maiti, D., Palladium-Catalyzed Synthesis of Benzofurans and Coumarins from Phenols and Olefins. ***Angew. Chem. Int. Ed***. 2013, *52*, 12669-12673. **IF = 16.82**
7. Patra, T.; Deb, A.; **Manna, S**.; Sharma, U.; Maiti, D., Iron-Mediated Decarboxylative Trifluoromethylation of α,β-Unsaturated Carboxylic Acids with Trifluoromethanesulfinate. ***Eur. J. Org. Chem***. 2013, 5247-5250. **IF = 3.26**
6. **Manna, S.**; Jana, S.; Saboo, T.; Maji, A.; Maiti, D., Synthesis of (*E*)-nitroolefins via decarboxylative nitration using t-butylnitrite (t-BuONO) and TEMPO. ***Chem. Commun.*** 2013, *49*, 5286-5288. **IF = 6.06**
5. Maity, S.; **Manna, S.**; Rana, S.; Naveen, T.; Mallick, A.; Maiti, D., Efficient and Stereoselective Nitration of Mono- and Disubstituted Olefins with $AgNO_2$ and TEMPO. ***J. Am. Chem. Soc.*** 2013, *135*, 3355-3358. **IF = 16.38** (Highlighted in ***Synfacts***, 2013, 662)
4. Deb, A.; **Manna, S.**; Modak, A.; Patra, T.; Maity, S.; Maiti, D., Oxidative Trifluoromethylation of Unactivated Olefins: An Efficient and Practical Synthesis of α-Trifluoromethyl-Substituted Ketones. ***Angew. Chem. Int. Ed***. 2013, *52*, 9747-9750. **IF = 16.82** (Selected a ***Best Cited Paper*** in 2014 at Indian Institute of Technology Bombay, India)
3. Deb, A.; **Manna, S.**; Maji, A.; Dutta, U.; Maiti, D., Iron-Catalyzed Direct C–H Arylation of Heterocycles and Quinones with Arylboronic Acids. ***Eur. J. Org. Chem***. 2013**,** *2013*, 5251-5256. **IF = 3.26**
2. **Manna, S.**; Maity, S.; Rana, S.; Agasti, S.; Maiti, D., *ipso*-Nitration of Arylboronic Acids with Bismuth Nitrate and Perdisulfate. ***Org. Lett.*** 2012**,** *14*, 1736-1739. **IF = 6.07 (**Highlighted in ***Synfacts***, 2012, 774)
1. Patra, T.; **Manna, S**.; Maiti, D., Metal-Mediated Deformylation Reactions: Synthetic and Biological Avenues. ***Angew. Chem. Int. Ed.*** 2011**,** *50*, 12140-12142. **IF = 16.82**

Patents

2. **Manna, S.**; Deb, A.; Modak, A.; Maity, S., and Maiti, D. Process for the preparation of α-trifluoromethyl ketones by trifluoromethylation of olefins. Indian Pat. Appl. (2015), IN2013MU01193, A2015042
1. Maity, S.; **Manna, S.**; Rana, S., and Maiti, D. Stereospecific synthesis of nitro olefin.

Indian Pat. Appl. (2014), IN 2012MU03052, A20140516

Book chapter

Manna, S.;† Kong, W.-J.;† Bäckvall, J.-E., Chapter One - Metal-Catalyzed Biomimetic Aerobic Oxidation of Organic Substrates In *Adv. in Catal.,* Dieguez, M., Ed. Academic Press: 2021; Vol. 69, pp 1-55. DOI: 10.1016/bs.acat.2021.11.001 (Publish: 7th December 2021)

Conference Presentations

- Copper Catalyzed C(sp^3)-H Bond Functionalization: Synthesis of Cyclopropanes*,* 5th July **2016**, BOS Symposium, Riga, Latvia
- Metal Free C-H Bond Functionalization: A Novel Method for Synthesis of Heterocycles, 22nd April **2016**, MSCEC, Münster, Germany
- Metal Free C-H Bond Functionalization: A Novel Method for Synthesis of Heterocycles, 16th March **2016**, 18th JCF Frühjahrssymposium, Kiel, Germany
- *ipso*-Nitration of Arylboronic acids with bismuth nitrate and potassium persulfate, 4th Sept. **2012**, ACS Symposium, IITB, India

Invited Presentations

- Development of Oxidative Annulation via C-H Bonds Functionalization in the Synthesis of Focused Compound Libraries, 24th February, **2017**, Day of Chemistry TU Dortmund, Germany
- Development of Novel Oxidative Annulation via C-H Bond Functionalization in the Synthesis of Biologically Relevant Compounds, 17th March, **2017**, MPI Kohlenforschung, Mülheim, Germany
- Development of Novel Oxidative Annulation via C-H Bond Functionalization, 8th March, **2017**, Münster University, Germany
- Metal Free C-H Bond Amination: A Novel Method for Synthesis of Heterocycles, 24th July, **2016**, Academie Klausenhof meeting, Germany
- Exploring New Facets of Organic Synthesis: From Hypervalent Iodine to Metal Catalysis, 24th September, **2020**, IISc Bangalore, India
- Exploring New Facets of Organic Synthesis: From Hypervalent Iodine to Metal Catalysis, 4th September, **2020**, Tata College Chaibasa, India
- Exploring New Facets of Organic Synthesis: From Hypervalent Iodine to Metal Catalysis, 4th February, **2021**, TIFR Mumbai, India

- Exploring New Facets of Organic Synthesis: From Hypervalent Iodine to Metal Catalysis, 18th February, **2021**, TIFR Hyderabad, India
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Funding and Grants

Through my fellowships and awards, I have been supported by EUR 183,000 in funding from European Commission as Marie Curie Individual Fellowship (Grant no: 798846).

Review paper

As an active reviewer, I interpret manuscripts for the journal of organic chemistry.

Guest Editor (Catalysts Journal)

In a special edition Catalysts journal, I am working as a guest editor on the topic "Recent Advances in Asymmetric Catalysis".

All India Based Entrance Exams

1. Council of Scientific & Industrial Research National Eligibility Test (CSIR-NET), June 2012, All India Rank **50 (Gen)**
2. IIT JAM (Indian Institute of Technology Joint Admission Test for M.Sc.), May 2010, All India Rank **36 (Gen)**