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Research ID: AAQ-8191-2021

Abir B.Majumder (Ph.D.)

Assistant Professor

[Research Gate: https://www.researchgate.net/profile/Abir-Majumder]

[Google Scholar: Abir B. Majumder - Google Scholar]

Skills:

- Stereoselective biocatalysis
- Non-aqueous enzymology
- Biocatalyst formulation design engineering
- Mechanistic study of promiscuous enzymatic reactions
- Organic synthesis
- Green chemistry

Area of Teaching

Organic Chemistry, Pharmaceutical Chemistry, Green Chemistry

Teaching Experience

Current Affiliation: Assistant Professor and Head of the Department, Department of Chemistry (May 2015 onwards)

Past Affiliation

- **Lecturer, Department of Chemistry, Rajiv Gandhi University of Knowledge Technologies (Basar campus), AP-504107.**
- **Project Scientist, IRD, Indian Institute of Technology Delhi**

Ph.D. Guidance

No enrolment yet

Education

Ph.D. **Indian Institute of Technology Delhi**

Thesis: Improving catalytic performance of hydrolases in organic solvents: Applications in synthesis and kinetic resolution of organic compounds.

Post-Graduate: M.Sc. (Organic Chemistry), University of North Bengal

Publication

PUBLICATIONMETRICS

For all Time

Book	Paper/Article	Chapter	Total Citation
00	15	00	241

1. Gupta, M. N.; **Majumder, A.B.**; Mukherjee, J. (2017) Method of surface modification of enzyme co- aggregates and uses thereof. Application No.4301/DEL/2015 A. Publication Date: 30/06/2017. International classification: C12N. The Patent Office Journal No. 26/2017, 21972. Patent No. IN20150430lI1

2. Mukherjee, J [1]; **Majumder, A.B**.[1]; Gupta, M.N.* (2016) Adding appropriate amino acid during cross-linking results in a more stable cross-linked enzyme aggregates. **Analytical Biochemistry**, 507, 27-32. (Publisher: Elsevier)

3. Reddy, A.**; Majumder A. B. *** (2014) Use of a combined technology of Ultrasonication, Three Phase Partitioning and Aqueous Enzymatic Oil Extraction for the extraction of oil from *Spirogyra sp.*, **Journal of Engineering**, ISSN: 2314-4904, (**As Corresponding author)** (Publisher: Hindawi)
4. Kapoor, M.; **Majumder, A. B.**; Gupta, M. N. (**2014**) Promiscuous Lipase catalysed C-C bond formation reactions between 4-nitrobenzaldehyde and 2-cyclohexen-1-one in biphasic medium: Aldol and Morita-Baylis-Hilman adduct formations. **Catalysis Letters,** 144 DOI:10.1007/s10562-014-1429-8 ISSN: 1011-372X (Published online, Publisher: Springer)
5. **Majumder, A. B**.; Gupta, M. N. (2014) Lipase catalyzed condensation reaction of 4-nitrobenzaldehyde with acetyl acetone in aqueous-organic co-solvent mixtures and in nearly anhydrous media. **Synthetic Communications**, 44, 818-826. ISSN: 0039-7911/ 1532-2432 (Publisher: Taylor and Francis)
6. Kapoor, M.; **Majumder, A. B.**; Mukherjee, J.; Gupta, M. N. (2012) Decarboxylative aldol reaction catalysed by lipases and a protease in organic co-solvent mixtures and nearly anhydrous organic solvent media. **Biocatalysis and Biotransformation,** 30(4), 399-408. ISSN: 1029-2446 (Publisher: Taylor and Francis)
7. Gupta, M. N.; Kapoor, M.; **Majumder, A. B.;** Singh, V. (2011) Isozymes, moonlighting proteins and promiscuous enzymes. **Current Science, 100, 1152-1162.** ISSN: 0011-3891 (Publisher: Indian Academy of Sciences)
8. **Majumder, A.B.**; Gupta, M.N. (**2011**) Increasing catalytic performance of Candida rugosa lipase for the synthesis of *tert*-alkyl butyrates in low water media. **Biocatalysis and Biotransformation, 29(6), 238-245**. ISSN: 1029-2446 (Publisher: Taylor and Francis)
9. **Majumder**, **A. B.**; Gupta, M. N. (2010) Enhancing catalytic efficiency of *Candida rugosa* lipase while transacetylation with vinyl acetate**. Bioresource Technology, 101, 2877-2879.** ISSN: 0960-8524. (Publisher: Elsevier)
10. **Majumder**, **A. B.**; Gupta, M. N. (2009) Enzymatic kinetic resolution of racmic pregabalin. (published as a part of the international patent : **WO/2009/087650**). Patent Title: A novel process for the synthesis of pregabalin from substituted cyclopropane intermediate and a process for enzymatic resolution of racemic pregabalin.
11. **Majumder**, **A. B.;** Ramesh, N. G.; Gupta, M. N. (**2009**) A lipase catalyzed condensation reaction with a tricyclic diketone: yet another example of biocatalytic promiscuity. **Tetrahedron Letters, 50, 5190-5193.** ISSN: 0040-4039 (Publisher: Elsevier, UK)

12. **Majumder**, **A. B.;** Singh, B.; Gupta, M. N. (**2008**) Diastereoselective synthesis of (*R*)-(alkyl)-β-D-galactopyranoside by using beta-galactosidase (*Aspergillus oryzae*) in low-water media. **Bioorganic & Medicinal Chemistry Letters, 18, 124–128.** ISSN: 0960-894X (Publisher: Elsevier)
13. **Majumder**, **A. B.**; Mondal, K.; Singh, T. P.; Gupta, M. N. (**2008**) Designing cross-linked lipase aggregates for optimum performance as biocatalysts**. Biocatalysis and Biotransformation, 26, 235-242.** ISSN: 1029-2446 (Publisher: Taylor and Francis)
14. **Majumder, A. B.**, Shah S, Gupta M. N. (**2007)** Enantioselective transacetylation of (R,S)-β-citronellol by propanol rinsed immobilized *Rhizomucor miehei* lipase. **Chemistry Central Journal**., 1:10. ISSN: 1752-153X (Publisher: Springer Link)
15. **Majumder, A. B.**; Singh, B.; Dutta, D.; Sadhukhan, S.; Gupta M. N. **(2006**) Lipase catalysed synthesis of benzyl acetate with vinyl acetate as acyl donor. Bioorganic & Medicinal Chemistry Letters, 16, 4041-4044. ISSN: 0960-894X (Publisher: Elsevier)

Abstracts published:

1. **Majumder, A. B.**; Singh, B; Dutta, D; Sadhukhan, S; Gupta, M. N. Lipase-Catalyzed Synthesis of Benzyl Acetate in Solvent-Free Medium Using Vinyl Acetate as Acyl Donor. ***ChemInform*** vol. 37 issue 46 November 14, 2006. DOI: 10.1016/j.bmcl.2006.05.006. ISSN: 0939-2084. (Publisher : Wiley)
2. **Majumder, A. B.**; Singh, Bhupender; Gupta, Munishwar N. Diastereoselective Synthesis of (R)-(Alkyl)-β-D-galactopyranoside by Using β-Galactosidase (Aspergillus oryzae) in Low-Water Media. ***ChemInform*** vol. 39 issue 25 June 17, 2008. DOI: 10.1002/chin.200825180. ISSN 0939-2084. (Publisher : Wiley)

Conference

For all Time

Organized	Paper Presented	Participated	Abroad
00	03	00	00

Conference (International)

1. **Title:** An unusually fast kinetic resolution of acyclic aliphatic medium chain secondary alcohols with cross-linked protein coated microcrystals of *Candida antarctica* lipase B. (2019) **(Oral Presentation) in "ICEFN & SEM-2019"; abstract published in proceeding. Venue:** Nanoscience and Nanotechnology Center, Kumaun University, Nainital.

Conferences (National)

2. Title: A carbon-carbon bond formation reaction of 5-hydroxy-endo-tricyclo[5.2.1.$0^{2,6}$]deca-4,8-diene-3-one and propionaldehyde : An energy saving approach for the synthesis of a biologically active molecule using applied promiscuous biocatalysis **.** (2018) **(Oral presentation) in "RAMSE 2018"; abstract published in proceeding. Venue: IIT (ISM) Dhanbad**

3. Title: Use of Novozym 435 for an efficient aldol type condensation of 5-hydroxy-endo-tricyclo[5.2.1.$0^{2,6}$]deca-4,8-dien-3-one and propionaldehyde under anhydrous conditions: effect of the size of the acceptor on this promiscuous biocatalysis. (2013) **(Oral presentation) in "Recent Development in Chemistry-2013"; Abstract published in proceeding. Venue: NIT Durgapur**

Membership of Scientific Community:

Indian Science Congress Association (Chemical Sciences) L28367

American Chemical Society: 3244095