Curriculum Vitae

Personal Information

Name in Full: Dr. Dattatraya H. Dethe

Date of Birth: 26-06-1976

Academic Qualifications

Aug. 1999 - July Dept. of Organic Ph.D. in Synthetic Organic 2005: Chemistry, Indian Chemistry with Professor A.

Institute of Science, Srikrishna

Bangalore, India

July 1997 - April Pune University M.Sc. in Organic Chemistry, First class with distinction, M.Sc. Project

class with distinction, M.Sc. Project with Professor Amitabha Sarkar at

NCL Pune

July 1993-June Shivaji University, B.Sc., First Class with distinction

1996: Kolhapur

Professional Experience

From Dec 2019: Dept. of Chemistry, Indian Professor

Institute of Technology Kanpur,

India

Dec 2014-Dec 2019: Dept. of Chemistry, Indian Associate Professor

Institute of Technology Kanpur,

India

Dec2011-Nov 2014: Dept. of Chemistry, Indian Assistant Professor

Institute of Technology Kanpur,

India

July 2009-Nov2011: National Chemical Laboratory, Senior Scientist (Scientist E1)

Pune, India

Aug2008-July 2009: Albany Molecular Research Inc., Senior Research Scientist

Drug Discovery Unit Singapore

July 2005-July 2008: Institute of Chemical and Post-Doctoral Fellow with

Engineering Sciences, Singapore Professor K. C. Nicolaou

Research Experience

Independent Research: Indian Institute of Technology Kanpur

(12/2011 - till date)

Total synthesis of bioactive natural products and the invention of new synthetic reactions, on the origin of stereo control in fundamental carbon-carbon and carbon-heteroatom bond forming reactions

Research in Singapore: Institute of Chemical and Engineering Sciences, (07/2005 – 07/2008), Pesek Road, Jurong Island, Singapore 627833

Advisor: Prof. K. C. Nicolaou

Total Synthesis of antibiotic macrocyclic thiopeptide GE2270A, amythiamycins, palmerolide and platencin

Research in India: Department of Organic Chemistry, Indian Institute of Science, Bangalore. (08/1999 – 07/2005) **Advisor**: Prof. A. Srikrishna

- Enantiospecific first total synthesis and determination of absolute configuration of curcumin-H
- Entropy assisted ring closing metathesis reaction using first generation Grubbs' catalyst: Enantiospecific synthesis of pacifigorgianes
- Enantiospecific synthesis of BC-ring systems of taxanes
- Enantiospecific synthesis of AB- and BC-ring systems of guanacastepene and rameswaralide

Teaching

Courses taught:

- 1. General Chemistry (CHM102A)
- 2. Basic Organic Chemistry (203A).
- 3. Organic Chemistry-I (303A/401A)
- 4. Chemistry Laboratory (101A).
- 5. Frontiers in Organic Chemistry (CHM 612).
- 6. Application of Modern Instrumental Methods (CHM 631).
- 7. Organic Structure Determination by Spectroscopic Techniques (CHM656A)
- 8. Chemistry of Natural Products (CHM 662).
- 9. Organic Qualitative and Quantitative Laboratory (CHM 305).
- 10. Organic Preparations Lab (CHM 503A).

Supervision of Bachelor/Master thesis

Number of students graduated: M.Sc-25

S. No	Student Name	Year
1	Sourav Ghorai	2013
2	Sourav Ghosh	2014
3	Aritra Sarkar	2014
5	Snehashish Jana	2014
5	Anupam Mondal	2014
6	Kiron Kumar Ghosh	2015
7	Mahesh Parsutkar	2016
8	Sandip Ghatak	2016
9	Kousik Biswas	2016
10	Sabyasachi Maity	2017
11	Rakesh Maity	2017
12	Malay Naskar	2017
13	Prabhat Bera	2018
14	Hrishikesh Paul	2018
15	Ashish Rajput Parihar	2019
16	Rupesh Meena	2019
17	Kushbu Jangid	2020
18	Kamal Bhatt	2020
19	Kanishk Tomer	2020
20	Sariful Molla	2020
21	Aznur Azim	2020
22	Chirantan Singha	2021
23	Supratim Koley	2021
24	Soham Khanra	2021
25	Manodip Pal	2021
26	Deepak Kumar Behera	2022
27	Deborshee Das	2022
28	Arnadeep Datta	2022
29	Debasis Maity	2022
30	Sailesh Barui	2022
31	Mangish Ghosh	2022

PhD Supervision

Present no. of Ph.D students: 13

S.No.	Name of Student	Year of
		Joining
1	Aparna Srivastava	2013
2	Appasaheb Nirpal	2014
3	Nagabhushana C B	2017
4	Manmohan	2017
5	Arsheed Bhat	2018
6	Amar Uike	2018
7	Vimlesh Katiyar	2018
8	Salman Siddiqui	2019
9	Prabhakar Singh	2019
10	Soumojyati Prodhan	2019
11	Subham	2020
12	Nitin Kumar	2020
13	Sakshi Juyal	2021
13	Chirantan Singha	2021

Number of students graduated: 09

S.No.	Name of student	Graduation	Current Status
1	Dr. Rohan D Erande	2014	Assistant Prof., Dept of Chemistry,
			IIT Jodhpur
2	Dr. Alok Ranjan	2015	Postdoc, Stanford University
3	Dr. Ganesh M. Murhade	2016	Postdoc, University of Illinois
4	Dr. B. Raghavender	2016	Postdoc, Texas University
5	Dr. Balu Dherange	2017	Postdoc, University of Chicago
6	Dr.Vijay Kumar B.	2019	Postdoc, The University of Tennessee
7	Dr. Saikat Das	2019	Postdoc, Tohuku University
8	Dr. Samarpita Mahapatra	2019	Postdoc, University of Groningen,
			Netherlands, Marie Curie Fellow
9	Dr. Susanta Kumar Sau	2019	Postdoc, Rice University

Publications

From India (Independent Work)

S.No.	Author(s)	Title	Name of Journal	Vol.	Page	Year
66.	D. H. Dethe*, M. Shukla	Enantioselective First Total Syntheses of Antiviral Xiamycins D and E	Chem. Commun.	57	Just Accepted	2021
65.	D. H. Dethe,* Nagabhushan a C. B., and Vimlesh Kumar	Weakly Coordinating, Hydroxyl Directed Ruthenium Catalyzed C-H Alkylation of Ubiquitous Benzyl Alcohols with Maleimides.	Org. Lett.	23	6267	2021
64.	D. H. Dethe*, Nagabhushan a C. B. and Dherange B.,	Carboxylic Acid Promoted, Redox-Neutral Ru- Catalyzed C-H Allylation of Aromatic Ketones,	Eur. J. Org. Chem.		Just accepted	2021
63.	Dethe*,D.H., Nirpal, A.K.	Enantiospecific Total Synthesis of (-)-Japonicol C	Org. Lett.	23	2648	2021
62.	Feuya Tchouya* G. R., Dethe* D.H.	A new dibenzofuran derivative from the stem bark of with anti- inflammatory and cytotoxic activities	Nat. Prod. Res.		asap	2021
61.	Dethe*, D.H., Beerali ngappa, N.C., Das, S., Nirpal, A.K.	Ruthenium-catalyzed formal sp ³ C-H activation of allylsilanes/esters with olefins: efficient access to functionalized 1,3-dienes	Chem. Sci.	12	4367	2021
60.	Dethe*, D.H., Beerali ngappa, N.C., Uike, A.	Ruthenium-Catalyzed Oxidative Cross-Coupling Reaction of Activated Olefins with Vinyl Boronates for the Synthesis of (E, E)-1,3-Dienes	J. Org. Chem.	86	3444	2021
59.	D. H.	Sc(oTf)3-catalysed	Org. Lett.	22	5778	2020

58.	Dethe*, M. Shukla, and B. D. Dherange	Synthesis of Symmetrical Dithioacetals and Bisarylmethanes Using Nitromethane as a Methylene Source	LOw	85	7565	2020
36.	D. H. Dethe*, B.Nagabhusa n, and A. A. Bhat	Cp*Co(III)-Catalysed Ketone Directed ortho C-H Activation for the Synthesis of Indene Derivatives	J. Org. Chem.	83	7303	2020
57.	D. H. Dethe*, and B. Nagabhusan	Ruthenium-Catalyzed Direct Dehydrogenative Cross-Coupling of Allyl Alcohols and Acrylates: Application to Total Synthesis of Hydroxy β- Sanshool, ZP-Amide I, and Chondrillin	Org. Lett.	22	1618	2020
56.	D. H. Dethe*, and B. Vijaykumar	Total Synthesis of (-)-Phomoarcherin	J. Org. Chem.	84	14053	2019
55.	D. H. Dethe*, and A. Nirpal	Bio-Inspired Enantioselective Total Syntheses of (-)-Viminalins A, B, H, I, N and Structural Reassignment of (-)- Viminalin M	Org. Biomol. Chem.	360		2019
54.	D. H. Dethe*, and S. K. Sau	Enantioselective Total Synthesis of (-)- Strongylophorines-2 and 9	Org. Lett.			2019
53.	D. H. Dethe*, and S. K. Sau	Biomimetic Enantioselective Total Synthesis of (-)- Petromindole	Org. Lett.	20	632	2018
52. 51.	D. H. Dethe*, b. Vijay Kumar and A. Mondal D. H.	Rapid One-Pot Access to Unique 3,4-Dihydrothiopyrano[3,4-b]indol-1(9H)- imines via Bi(OTf) ₃ -Catalysed Tandem Friedel—Crafts Alkylation/Thia-Michael Addition Biomimetic Total Syntheses	Eur. J. Org. Chem.	20	5417	2018

	Dethe*, B. D. Dherange,	of Callistrilones A, B, and D				
	and S. Das					
50.	D. H. Dethe*, S. Mahapatra and S. K. Sau	Enantioselective Total Synthesis and Assignment of the Absolute Configuration of the Meroterpenoid (+)-Taondiol	Org. Lett.	20	2766	2018
49.	D. H. Dethe*, S. Das and B. Vijaykumar	Enantiospecific Total Syntheses of (+)- Hapalindole H and (-)-12- epi-Hapalindole U	Chem. Eur. J.	24	8980	2018
48.	D. H. Dethe*, B. D. Dherange,	Total Synthesis of Adunctin B	J. Org. Chem.	83	3392	2018
47.	D. H. Dethe*, B. Vijaykumar and R. Maiti	Biomimetic total syntheses of chromane meroterpenoids, guadials B and C, guapsidial A and psiguajadial D	Org. Biomol. Chem.	16	4793	2018
46.	S. Singh, H.Singh, P. Agarwal, P Tandon, D. Dethe* and R. D. Erande	Structural and spectroscopic analysis of indole alkaloids: Molecular docking and DFT approach	J. Mol. Str.,	262	1153	2018
45.	D. H. Dethe*, A. Srivastava, B. D. Dherange, B. Vijay Kumar	Unsymmetrical Disulfide Synthesis through Photoredox Catalysis	Adv. Synth Cat.			2018
44.	D. H. Dethe*, and R. Boda	Synthetic Studies toward the Natural Product Tripartin, the First Natural Histone Lysine Demethylase Inhibito	ACS Omega	3	9303	2018
43.	A. Ranjan, A. S. Deore, S. G. Yerande, D. H. Dethe*	Thiol-Yne Coupling of Propargylamine under Solvent-Free Conditions by Bond Anion Relay Chemistry: An Efficient Synthesis of Thiazolidin-2- ylideneamine	Eur. J. Org. Chem.		4130	2017

42.	S. Singh, H.Singh, T. Karthick, P Tandon, D. Dethe* and R. D. Erande	Conformational study and vibrational spectroscopic (FT-IR and FT-Raman) analysis of an alkaloid-Borreverine derivative	Analytical Sciences	33	99	2017
41.	D. H. Dethe*, G. M. Murhade, B. D. Dherange, S. K. Sau	Enantiospecific syntheses of hongoquercin A, B and chromazonarol	Eur. J. Org. Chem.	7	1143	2017
40.	D. H. Dethe*, B.D. Dherange, S. Ali, M. M. Parsutkara	Enantiospecific total syntheses of meroterpenoids (-)-F1839-I and (-)- corallidictyals B and D	Org. Biomol. Chem.	15	65	2017
39.	D. H. Dethe,* S. K. Sau, S. Mahapatra	Biomimetic Enantioselective Total Synthesis of (-)- Mycoleptodiscin A	Org. Lett.	18	6392	2016
38.	D. H. Dethe*, R. Boda	Expedient Synthesis of Densely Substituted Pyrrolo[1,2-a]indoles	Org. Biomol. Chem	14	5843	2016
37.	S. Singh, H. Singh, T. Karthick, P. Agarwal, R. D. Erande, D. H. Dethe* , P. Tandon*	Combine experimental and theoretical investigation on an alkaloid— Dimethylisoborreverine	J. Mol. Str.	1103	187	2016
36.	D. H. Dethe*, R. Boda.	A Novel Pd-catalyzed Annulation Reaction for the Syntheses of Pyrroloindoles and Pyrroloquinolines	Chem. Eur. J.	22	106	2016
35.	T. S. Kusurkar, K. Bhargava, S. Khurana, N. K. D. H. Dethe, M. Das	A glowing antioxidant from Tasar silk cocoon,	RSC Adv.	5	104563	2015

34.	Rafiq, S. Gupta, D. H. Dethe* , P. Sen*	Femtosecond Dynamics of Photoinduced cis-trans Isomerisation of Ethyl-3- (1H-indole-3-yl)acrylate	Chem. Phys. Lett.	31	638	2015
33.	A. Ranjan, A. Mandal, S. G. Yerande, D. H. Dethe*	Asymmetric Alkynylation/Hydrothiolatio n Cascade: Enantioselective Synthesis of Thiazolidine-2-imines from Imine, Acetylene and Isothiocyanate	Chem. Commun.	51	14215	2015
32.	D. H. Dethe,* G. Murhade	FeCl ₃ .6H ₂ O catalysed intramolecular olefin-Michael cyclisation reaction of styrenes for the synthesis of indene: Application in total synthesis of (±) Jungianol	J. Org. Chem.	80	8367	2015
31.	D. H. Dethe,* G. Murhade	FeCl ₃ Mediated Synthesis of Substituted Indenones by Formal [2+2] Cycloaddition/Ring Opening Cascade of <i>O</i> - Keto-Cinnamates	Chem. Commun.	51	10891	2015
30.	D. H. Dethe*, B. D. Dherange	Enantiospecifc Total Syntheses of Adunctins and Linderols: Assignment of the Relative and Absolute Stereochemistry, and Structural Reassignment of Adunctin E	J. Org. Chem.	80	4526	2015
29.	A. Ranjan, R. Yerande, M. Jadhav, S. G. Yerande*, D. H. Dethe *	One Pot Synthesis of 2- Amino-1,3-Selenazole through Intermediary Amidinoselenourea	Eur. J. Org. Chem.		3230	2015
28.	D. H. Dethe ,* B. Vijay Kumar	Concise Asymmetric Total Synthesis of Bruceolline J	Org. Chem. Front.	2	548	2015
27.	D. H. Dethe,* S. Das, B. D. Dherange, S. Mahapatra D. H.	Enantiospecific total syntheses and assignment of absolute configuration of cannabinol-skeletal carbazole alkaloids murrayamines-O and -P Lewis acid catalyzed	Chem. Eur. J.	21	8347	2015

	Dethe,* R. Boda, G. M. Murhade	Nazarov type cyclization for the synthesis of substituted indane framework: total synthesis of (±)-	Chem. Front.			
		mutisianthol				
25.	D. H. Dethe,* R. D. Erande, S. Mahapatra, S.	Protecting group free enantiospecific total syntheses of structurally diverse natural products of	Chem. Commun.	51	2871	2015
	Das, Vijay Kumar B	the tetrahydrocannabinoid family				
24.	D. H. Dethe*, B. D. Dherange, R. Boda	Hg(OAc)2 mediated highly regio- and diastereoselective allylic tert-acetylation of olefins	Org. Chem. Front.	2	159	2015
23.	A. Ranjan, R.Yerande, P. B. Wakchaure, S. G. Yerande, D. H. Dethe *	Base-Mediated Hydroamination of Propargylamine: A Regioselective Intramolecular 5-exo-dig Cycloisomerization en Route to Imidazole-2-thione	Org. Lett.	16	5788	2014
22.	D. H. Dethe,* G. M. Murhade	Diversity-Oriented Synthesis of Calothrixins and Ellipticines	Eur. J. Org. Chem.	31	6953	2014
21.	D. H. Dethe,* R. D. Erande, B. D. Dherange	Remarkable Switch of Regioselectivity in Diels— Alder Reaction: Divergent Total Synthesis of Borreverine, Caulindoles, and Flinderoles	Org. Lett.	16	2764	2014
20.	D. H. Dethe,* A. Ranjan.	Enantioselective total syntheses and determination of absolute configuration of marine toxins, oxazinins	RSC Advances	3	23692	2013
19.	D. H. Dethe,* R. D. Erande, A. Ranjan	Biomimetic total syntheses of borreverine and flinderole alkaloids	J. Org. Chem.	78	10106	2013
18.	D. H. Dethe,* G. M. Murhade	FeC13 mediated intramolecular olefin-cation cyclisation of cinnamates for the synthesis of highly substituted indenes	Chem. Commun.		8051	2013
17.	C. L. Cioffi, D. H. Dethe	Design, synthesis, and SAR of <i>N</i> -((1-(4-	Bioorg. Med.	23	1257	2013

		(propylsulfonyl)piperazin-1- yl)cycloalkyl)methyl) benzamide inhibitors of glycine transporter-1	Chem. Lett.			
16.	D. H. Dethe*, R. Boda, S. Das	Cu(OTf)2 catalysed [6+2] cycloaddition reaction for the synthesis of highly substituted pyrrolo[1,2-a]indoles: rapid construction of yuremamine core	Chem. Comm.	49	3260	2013
15.	D. H. Dethe,* G. M. Murhade	FeCl3 Catalyzed Prins-Type Cyclization for the Synthesis of Highly Substituted Indenes: Application to the Total Synthesis of (±)-Jungianol and <i>epi</i> -Jungianol	Org. Lett.	15	429	2013
14.	A. Srikrishna, D. H. Dethe	Enantiospecific synthesis of pacifigorgianes	Indian J. Chem.	51	345	2012
13.	D. H. Dethe*, A. Ranjan, V. Pardeshi	Asymmetric first total syntheses and assignment of absolute configuration of oxazinin-5, oxazinin-6 and preoxazinin-7	Org. Biomol. Chem.	9	7990	2011
12.	A. Srikrishna, D. H. Dethe	Enantiospecific first total synthesis of cucumin-H	Indian J. Chem.	50	1092	2011
11.	D. H. Dethe*, R. Erande, A.Ranjan	Biomimetic total syntheses of flinderoles B and C.	J. Am. Chem. Soc.	133	2864	2011
10.	K. C. Nicolaou, L. Y. Chung, D. H. Dethe , G. Ramakrishna, S.	Chemical Synthesis and Biological Evaluation of Palmerolide A Analogues	J. Am. Chem. Soc.	130	10019	2008
9.	K. C. Nicolaou, D. H. Dethe, C.David	Total Syntheses of Amythiamicins A, B and C	Chem. Comm.		2632	2008
8.	K. C. Nicolaou, D. H. Dethe, L. Y. Chung, B. Zou, C.	Total Synthesis of Thiopeptide Antibiotics GE2270A, GE2270C1 and GE2270T	Chemistry : An Asian Journal	3	413	2008

	David					
7.	K. C. Nicolaou, B. Zou, D. H . Dethe , L. Dongbo, C. David	Total Synthesis of Antibiotics GE2270A and GE2270T	Angew. Chem.Int. Ed.	45	7786	2006
6.	A. Srikrishna, D. H. Dethe	An efficient construction of a C3-symmetric macrocycle by head to tail cyclotrimerization of an unsymmetricaldiene via a sequence of highly regionand stereoselective metathesis reactions	Tetrahedr on Lett.	46	3381	2005
5.	A. Srikrishna, D. H. Dethe	Enantiospecific synthesis of BC and AB ring systems of guanacatepenes and rameswaralide	Org. Lett.	6	165	2004
4.	A. Srikrishna, D. H. Dethe , P. R. Kumar	Enantiospecific construction of BC-ring system of taxanes	Tetrahedr on Lett.	45	2939	2004
3.	A. Srikrishna, D. H. Dethe	Enantiospecific first total synthesis and assignment of absolute configuration of the sesquiterpene (-)-Cucumin-H	Org. Lett.	5	2295	2003
2.	A. Srikrishna, N. C. babu, D. H. Dethe	A convenient enantiospecific methodology for (-)- (1R,5S)-1,5- dimethylbicyclo[3.3.0]octa-2,7-dione: A formal total synthesis of (-)- ceratopicanol	Indian J. Chem.	42B	1688	2003
1.	A. Srikrishna, D. H. Dethe	An efficient ring closing metathesis reaction of the geminally disubstituted olefins using first generation Grubb's catalyst: enatiospecific synthesis of pacifiogorgianes	Tetrahedr on Lett.	43	1109	2003

Development

Patents filed/granted with details:

1. Flinderole analogues and process for synthesis thereof., <u>Dethe Dattatraya H.</u>, Erande Rohan D., Ranjan Alok, PCT Int. Appl., 2012, WO 2012107934 A1 20120816. IN 2011DE00336 A 20120817.

Funding

Grant Agency	Title of the project and reference number	Duration	PI/Co-PI	Amount
SERB	Enantioselective total synthesisof antimalarial flindersia alkaloids Project NoSERB/F/5277/2014- 2015	2014-2017 (3 years)	PI	52,00,000
DST- INDUSTR Y(UAY)	Development of novel synthetic route for a key intermediate-Noroxymorphone Project No IITK009	2017-2019 18 Months	PI	52,50,000
Ministry of Earth Sciences	Synthesis of Marine Natural Products Hapalindoles and their analogues for SAR studies Project No MoES-2/DS/6/2007 PC-IV	2016 (1 year)	PI	8,90,000
CSIR	Biomimetic total synthesis of (+)- Hongoquericin A-B and related natural products.Project No 02(0274)/16/EMR-II	2016-2019 (3 years)	PI	14,00000
SERB	Double SN ² cascade for biomimetic total synthesis of antidiabetic natural products chlorabietol A-C and callistrilones A,B. SERB/CHM/2018527	2019-2022 (3 Years)	PI	64,50,000
SERB- STAR	Stereoselective Synthesis of 1,3- Dienes via Ruthenium Catalysed sp2 C-H Activation of Activated Olefins and Their Application Towards Biologically Active Natural Products	2020-2023 (3-Years)	PI	38,50,000
CSIR	Total Synthesis of Macrolactin-T via Ruthenium Catalysed C-H Activation	2021-2024 (3-Years)	PI	21,00,000

Consultancy

- 1. Development of novel synthesis route for noroxymorphone and apomorphine (Project no: NSRT/CHM/2016201) with Navin Saxena Research Technology, Gujrat, Duration: 6 Months (17/08/2016 to 16/02/2017) Rs. 10,00,000
- 2. Consultation on the general synthetic organic chemistry and spectral interpretation aspects in the context of Glandpharma R&D activities, Glandpharma, Hyderabad, Duration: one year, (01/01/2021-31/12/2021)-Rs. 2,00,000

Peer Recognition

- 1. CSIR young scientist award for year 2011.
- 2. OPPI young scientist award for year 2011.
- 3. Young associate of Indian academy of sciences (2011-2014).
- 4. AVRA Young Scientist Award 2015.
- 5. CRSI Bronze Medal 2020
- 6. SERB-STAR Award 2020

Contributions to the institute

- 1. DUGC Convenor (2014-2015)
- 2. Graduate Seminar Incharge (2013-2014)
- 3. Chemical Society President (2013-2014)
- 4. NMR Instruments Incharge (2014-till date)
- 5. Member-Senate election Committee-IITK (2021-2022)

Contributions outside the institute

Expert, KVPY (KISHOR VAIGYANIC PROTSAHAN YOGNA) Selection	Feb 2015, 2016, 2017, 2019, 2020
Member, CSIR Pre-examination committee	Dec 2014, April 2015, 2016,
	2017, 2018, 2019, 2020
Special Invitee SERB-PAC Member (Organic)	2020