




## Faculty Details proforma for DU Web-site

Title	Dr	First Name	Sandip	Last Name	Das	Photograph
Designation		<b>Associate Professor</b>				
Address		Department of Botany University of Delhi Delhi-110007				
Phone No Office		91-11-27667573				
Residence Mobile						
Email		<a href="mailto:sdas@botany.du.ac.in">sdas@botany.du.ac.in</a> ; <a href="mailto:sandipdas04@gmail.com">sandipdas04@gmail.com</a>				
Web-Page						
<b>Educational Qualifications</b>						
Degree		Institution			Year	
Ph.D.		Jamia Hamdard (Hamdard University), Delhi			1998	
M.Phil.		University of Delhi (M. Phil Botany)			1993	
PG		University of Delhi (M. Sc Botany)			1992	
UG		University of Delhi (B.Sc Botany)			1990	
<b>Career Profile</b>						
<ul style="list-style-type: none"> <li>• February 17, 2013-Till date: University of Delhi; Associate Professor</li> <li>• February 16, 2010-February 16, 2013: University of Delhi; Assistant Professor</li> <li>• August 1999-February 2010: Hamdard University (Jamia Hamdard), Delhi; Lecturer/Senior Lecturer/Assistant Professor</li> <li>• September 2002-August 2004: Max Planck Institute for Developmental Biology, Tuebingen, Germany; Post-doctoral research on "Comparative genomics in Brassicaceae: Analyses of microRNA and other regulatory elements involved in development" with Professor Detlef Weigel (Director; FRS)</li> <li>• May 1999- August 1999: Cornell University, Ithaca, USA; Post-doctoral research on "Comparative genomic analysis of self-incompatibility loci in <i>Arabidopsis thaliana</i> and <i>Arabidopsis lyrata</i>" with Professor Mikhail Nasrallah</li> <li>• November 1998-April 1999: TERI, New Delhi, Research Associate</li> </ul>						
<b>Administrative Assignments</b>						
<ol style="list-style-type: none"> <li>1. Member, Departmental Research committee, Dept. of Botany, University of Delhi</li> <li>2. Member, Laboratory furniture purchase committee, Dept. of Botany, University of Delhi</li> <li>3. Member, Internet committee, Dept. of Botany, University of Delhi</li> <li>4. Member, Departmental Webpage committee, Dept. of Botany, University of Delhi</li> <li>5. Deputy Coordinator, M.Sc End semester Examination (2017-onwards)</li> <li>6. Member, Ph.D admission committee, Dept. of Botany, University of Delhi (2015-2017)</li> <li>7. Member, M.Phil admission committee Dept. of Botany, University of Delhi (2017-continue)</li> <li>8. Editor, The Botanica, publication of DUBS</li> <li>9. Member, Committee of courses for CBCS/FYUP/Under-graduate/Post-graduate programme</li> <li>10. Council Member, Faculty of Science, University of Delhi, Delhi</li> </ol>						

11. Member, BRS, Faculty of Science, University of Delhi, Delhi
12. Teacher coordinator, Gender Champions,, Dept. of Botany, University of Delhi (2017-)
13. Member, Project Implementation Group, FIST-II, Dept. of Botany, University of Delhi

### Areas of Interest / Specialization

1. Evolution and development of plant morphological diversity and adaptive variation, especially the role of miRNA and transcription factor genes, and cis-regulatory elements
2. Impact of polyploidization on genetic networks in *Brassica* and other plants, with special reference to microRNA and their cognate target loci, and promoter elements
3. Evolutionary Developmental Genetics (Evodevotics)
4. Genome organisation of plants
5. Genetic engineering of plants for agronomic trait

### Subjects Taught

Theoretical and practical aspects of the following subjects:

- i) Cell and Molecular Biology
- ii) Contemporary Concepts and topics in Cell Biology
- iii) Advances in Archaeogoniatae
- iv) Bio-informatics

### Time table of the subjects taught during the current semester

S.No.	Subject	Days	Time	Classroom
1	BOT101: Cell and Molecular Biology (1 <sup>st</sup> semester)	1. Tuesday (theory and Practical) 2. Friday (theory and Practical)	Theory: 8.45-9.40 am Practical: 10.35am-2.15pm	Theory: #37 Practicals: #45
2	BOT303: Advances in Archaeogoniate (3 <sup>rd</sup> semester)	1. Monday (Theory and Practical) 2. Friday (Theory)	Theory (Monday): 1.20-2.15pm Theory (Friday) 8.45-9.40am Practical: 2.15-5.30pm	Theory: #208  Practicals: #43
3	BOT306: Bioinformatics, Comp. Biology & Biostatistics (3 <sup>rd</sup> semester)	1. Thursday (theory and Practical)	Theory: 8.45am-9.40am and 1.20-2.15 pm Practical: 9.40am-1.20pm	Theory and Practical: #41
4	BOT407: Contemporary topics in Cell Biology (4 <sup>th</sup> semester)	1. Tuesday (Theory and Practical)	Theory: 8.45-10.35 am Practical: 10.35am-4.05pm	Theory: # 207 Practical: #45
5	BOT409: Dissertation (4 <sup>th</sup> semester)	1. Saturday (Tutorial and Discussion)	Tutorial and Discussion: 9.0 am-13.00 pm (1 hr x 4 student)	Tutorial and Discussion: #28 and 45A(3)
6	RM1: M.Phil and Ph.D Course work: Methodology - databases	1. Monday (Theory, Tutorials and Assignments)	Theory: 11.30am-1.30pm Tutorial / Assignments: 2.30-5.30 pm	Theory: #207 Tutorial and Assignments: #207
7.	RM4: M.Phil and Ph.D Course work:	1. Monday (Theory, Tutorials and	Theory: 11.30am-1.30pm	Theory: #207 Tutorial and

	Research Presentation skills	Assignments)	Tutorial / Assignments: 2.30-5.30pm	Assignments: #207
8	EL04: Elective course M.Phil and Ph.D Course work: Developmental Biology	2. Wednesday (Theory, Tutorials and Assignments)	Theory: 11.30am-1.30pm Tutorial / Assignments: 2.30-5.30pm	Theory: #207 Tutorial and Assignments: #207

### Research Guidance

#### Post-doctoral:

1. Dr. Meenakshi Dangwal (UGC; DS Kothari fellow): Identification and molecular characterization of OVATE Family Protein during reproductive stages in *Oryza sativa* (ongoing)

#### Doctoral Thesis

##### Awarded

1. Ms. Neer Komal Singh (2017) Genomic Organisation and Evolution Across Brassicaceae, and Functional Characterization of *FATTY ACID ELONGASE 1* from *Brassica juncea* (Supervisor)
2. Ms. Aditi Jain (2017) Comparative analysis of cis-regulation of microRNA and the corresponding target during development and adaptation (Supervisor)
3. Karuna Kusumanjali (2013): Genomic analysis of *CUC1* And microRNA gene, *miR164* from *Brassica species* (supervisor)
4. Ms. Gunjan Kumari (2013): Isolation and molecular characterization of miR165a and its target REVOLUTA from *Brassica juncea*. (co-supervisor)
5. Ms. Kalpna Singh (2012): Molecular characterization of MINI3 WRKY10 from *Brassica species* (supervisor)
6. Ms. Parul Chowdhury (2012): Sequence Analysis and molecular characterization of microRNA genes from *Solanum esculentum L* (supervisor)
7. Mr. Ritesh Kumar (2011): Molecular Analysis of TCP4 and regulatory sequences from *Brassica species* (supervisor)
8. Ms. Maryam Sarwat (2007): Analysis of Genetic diversity in *Terminalia arjuna*, *T.bellerica*, *T.chebula*, and *Tribulus terrestris* by molecular markers (co-supervisor)

#### Supervision of Doctoral Thesis, under progress

1. Mr. Saurabh
2. Ms. Gauri Joshi
3. Ms. Ekta Bhardwaj
4. Mr. Mukund Lal
5. Ms. Nishu Chahar
6. Ms. Shobha Yadav

#### M.Phil

##### Awarded:

1. Ms. Ila Bhardwaj
2. Ms. Ritwika Kar
3. Ms. Priyanka
4. Ms. Ekta Bhardwaj
5. Mr. Mukund Lal
6. Ms. Nishu Chahar

**Publications Profile**

• **Research Articles**

1. Saurabh Anand, Mukund Lal and **Sandip Das** (2018) Identification of pre-meiotic and post-meiotic stages of pollen, standardization and validation of a modified method for RNA isolation from anther, pistil and developing seed of *Brassica rapa*. International Journal of Plant Reproductive Biology. 10(2) July, 2018, pp.178-183. DOI 10.14787/ijprb.2018 10.2
2. Swati Singh, **Sandip Das**, R. Geeta (2018) A segmental duplication in the common ancestor of Brassicaceae is responsible for the origin of the paralogs KCS6-KCS5, which are not shared with other angiosperms. Molecular Phylogenetics and Evolution 126:331-345
3. Chetan Chauhan, Gauri Joshi, Darshna Chaudhary and **Sandip Das** (2018) An improved method for rapid analysis of promoters using modified sonication-assisted transient assay. 3Biotech April 2018, 8:198
4. Aditi Jain, Saurabh Anand, Neer K Singh, **Sandip Das** (2018) Sequence and Functional Characterization of MIRNA164 Promoters from Brassica Shows Copy Number Dependent Regulatory Diversification Among Homeologs. Functional and Integrative Genomics. Volume 18, Issue 4, pp 369–383
5. Chandan Barman, Vineet Singh, **Sandip Das** and Rajesh Tandon (2018) Floral contrivances and specialized pollination mechanism confer strong influence to elicit mixed-mating in *Wrightia tomentosa* (Apocynaceae); Plant Biology 20: 546–554
6. Gunjan Sirohi, Karuna Kusumanjali, Ritesh Kumar, Aditi Jain, P. S. Srivastava and **Sandip Das** (2018) Synteny analysis and functional characterization of miR165a from *Brassica* species. Acta Physiologia Plantarum. 40: 16.
7. Neer K. Singh, Saurabh Anand, Aditi Jain and **Sandip Das** (2017) Comparative Genomics and Synteny Analysis of KCS17-KCS18 Cluster Across Different Genomes and Sub-genomes of Brassicaceae for Analysis of Its Evolutionary History. Plant Mol Biol Rep. 35:237–251
8. Rathore P, R. Geeta and **Sandip Das** (2016) Microsynteny and phylogenetic analysis of tandemly organized miRNA families across five members of Brassicaceae reveals complex retention and loss history. Plant Science. 247: 35-48
9. Jain A and **Sandip Das** (2016) Synteny and comparative analysis of miRNA retention, conservation, and structure across Brassicaceae reveals lineage- and sub-genome-specific changes. Funct. Integr. Genomics. 16:253-268
10. Deans AR, Lewis SE, Huala E, Anzaldo SS, Ashburner M, Balhoff JP, Blackburn DC, Blake JA, Burleigh JG, Charet B, Cooper LD, Courtot M, Csořsz S, Cui H, Dahdul W, **Das S**, ..... and Mabee PM (2015) Finding our way through phenotypes. PLoS Biology 13(1): e1002033.
11. Showkat Hussain Ganie, Zahid Ali, **Sandip Das**, Prem Shankar Srivastava and Maheshwar Prasad Sharma (2015) Genetic diversity and chemical profiling of different populations of *Convolvulus pluricaulis* (convolvulaceae): an important herb of ayurvedic medicine. 3 Biotech 5:295–302
12. Gunjan Kumari, Karuna Kusumanjali, Prem Shankar Srivastava, **Sandip Das** (2013) Isolation and expression analysis of miR165a and REVOLUTA from *Brassica species*. Acta Physiologia Plantarum. 35: 399-410
13. Shivaneer Kaul, **Sandip Das** and P. S Srivastava (2013) Micropropagation of *Ajuga bracteosa*, a medicinal herb. Physiology and Molecular Biology of Plants 19 (2) , pp. 289-296

14. Ya-Long Guo, Marco Todesco, Jörg Hagmann, **Sandip Das**, and Detlef Weigel (2012) Independent FLC Mutations as Causes of Flowering-Time Variation in *Arabidopsis thaliana* and *Capsella rubella*. *Genetics* 192(2): 729-739
15. Sahu D, Saroha A, Roy S, **Das S**, Srivastava PS, Das HR (2012) Suramin ameliorates collagen induced arthritis. *International Immunopharmacol.* 12(1), 288–293
16. Karuna Kusumanjali, Gunjan Roy, P.S Srivastava and **Sandip Das** (2012) Sequence conservation and divergence in miR164C1 and its target, CUC1, in Brassica species. *Plant Biotechnology Reports*: 6:149–163:
17. Maryam Sarwat, **Sandip Das** and Prem S. Srivastava (2011) Estimation of genetic diversity and evaluation of relatedness through molecular markers among medicinally important trees: *Terminalia arjuna*, *T. chebula* and *T. bellerica*. *Molecular Biology Reports* 38:5025–5036
18. Maryam Sarwat, **Sandip Das** and Prem S. Srivastava (2011) AFLP and SAMPL markers for characterization of genetic diversity in *Terminalia arjuna*: a backbone tree of Tasar silk industry. *Plant Syst Evol* (2011) 293:13–23
19. Singh A, Niraj K. Nirala, **Sandip Das**, Alka Narula, M. V. Rajam, P. S. Srivastava (2011) Overexpression of odc (ornithine decarboxylase) in *Datura innoxia* enhances the yield of scopolamine. *Acta Physiologia Plantarum.* 33(6):2453-2459
20. Singh A, N. K. Nirala, Alka Narula, **Sandip Das** and Prem S. Srivastava (2011) Isolation and characterization of Ty1-copia group of LTRs in genome of three species of *Datura*: *D. innoxia*, *D. stramonium* and *D. metel*. *Physiology and Molecular Biology of Plants.* 17(3): 255-261
21. Sumiya Jamshieed, **Sandip Das**, M. P. Sharma, P. S. Srivastava (2010) Difference in in vitro response and esculin content in two populations of *Taraxacum officinale* Weber. *Physiology and Molecular Biology of Plants* 16 (4): 353-358
22. Srivastava Toolika, **Sandip Das**, Sopory SK and Srivastava PS (2009) A reliable protocol for transformation of *Catharanthus roseus* through *Agrobacterium tumefaciens*. *Physiology and Molecular Biology of Plants* 15 (1): 93-98
23. Norman Warthmann\*, **Sandip Das\***, Christa Lanz and Detlef Weigel (2008) Comparative analysis of miR319A locus in *Arabidopsis* and related Brassicaceae. (\* **Joint First author**) *Molecular Biology and Evolution.* 25: 892-902
24. Maryam Sarwat, **Sandip Das** and P S Srivastava (2008) Analysis of genetic diversity through AFLP, SAMPL, ISSR and RAPD in *Tribulus terrestris*, a medicinal herb. *Plant Cell Reports*; 27 : 519-528
25. Singh A, **Das S** and Wilson N (2007) Genomics and IP: An Overview. *Journal of Intellectual Property Rights* 12(1): 57-71
26. M Sarwat, M S Negi, M Lakshmikumaran, A K Tyagi, **S Das** and P S Srivastava (2006) A Standardized Protocol for Genomic DNA Isolation from *Terminalia arjuna* for Genetic Diversity Analysis. *Electronic Journal of Biotechnology.* 9: 86-91
27. **Das S**, Roscoe TJ, Delseny M, Srivastava PS, Lakshmikumaran M (2002) Cloning and characterization of the Fatty Acid Elongase 1 (FAE 1) gene from high and low erucic acid lines of *Brassica campestris* and *Brassica oleracea*. *Plant Science* 162: 245-250
28. **Das S**, Srivastava PS and M Lakshmikumaran (2001) Isolation and characterization of a repetitive DNA clone from *Brassica campestris* and its use in screening of hybrids. *Brassica* 3(5-6) 21-28.



29. **Das S**, Rajagopal J, Bhatia S, Srivastava PS, Lakshmikumaran M (1999) Assessment of genetic variation within *Brassica campestris* cultivars using AFLP and RAPD markers. *Jour Bioscience*. 24: 433-440
30. Rajgopal J, **Das S**, Khurana DK, Srivastava PS and Lakshmikumaran M (1999) Molecular characterization and distribution of a 145bp tandem repeat family in the genus *Populus*. *Genome* 42: 909-918
31. Kapila R, **Das S**, Srivastava PS, Lakshmikumaran M (1996) A novel species-specific tandem repeat DNA family from *Sinapis arvensis* : Detection of telomere-like sequences. *Genome* 39: 758-766
32. Bhatia S, **Das S**, Jain A and Lakshmikumaran M (1995) DNA fingerprinting of *Brassica juncea* cultivars using micro-satellite probes. *Electrophoresis* 16: 1750-1754

**Review articles:**

1. Maryam Sarwat, Gowher Nabi, **Sandip Das**, Prem Shankar Srivastava (2012) Molecular markers in medicinal plant biotechnology: past and present. *Critical Reviews in Biotechnology*, March 2012, Vol. 32, No. 1 : Pages 74-92

**Book Chapters:**

1. Swati Singh, Sandip Das and R. Geeta (2018) ROLE OF CUTICULAR WAX IN ADAPTATION TO ABIOTIC STRESS - A MOLECULAR PERSPECTIVE. In S. M. Zargar, M. Y. Zargar (eds.), *Abiotic Stress-Mediated Sensing and Signaling in Plants: An Omics Perspective*, [https://doi.org/10.1007/978-981-10-7479-0\\_5](https://doi.org/10.1007/978-981-10-7479-0_5): Springer Nature Singapore Pte Ltd. pp 155-182
2. Aditi Jain, Gauri Joshi, Chetan Chauhan, Sandip Das (2018) ABIOTIC STRESS RESPONSE IN PLANTS: A CIS-REGULATORY PERSPECTIVE. In S. M. Zargar, M. Y. Zargar (eds.), *Abiotic Stress-Mediated Sensing and Signaling. In Plants: An Omics Perspective*, [https://doi.org/10.1007/978-981-10-7479-0\\_6](https://doi.org/10.1007/978-981-10-7479-0_6) Springer Nature Singapore Pte Ltd.. pp:183-205
3. Neer K. Singh, Saurabh Anand, and Sandip Das (2017) Small RNAs: I: Role as Developmental and Adaptive Regulators in Plants. In: Sajad Majeed Zargar, and Vandna Rai (eds) *Plant OMICS and Crop Breeding*. Apple Academic Press/ CRC Press; New Jersey, USA. Pp: 115-161
4. Neer K. Singh, Saurabh Anand, and Sandip Das (2017) Small RNAs: II: Mode of Action and Potential Applications in Plant Improvement. In: Sajad Majeed Zargar, and Vandna Rai (eds) *Plant OMICS and Crop Breeding*. Apple Academic Press/ CRC Press; New Jersey, USA. Pp: 163-200
4. Sandip Das (2014) DNA Damage and Repair. In e-book (e-Pathshala; An MHRD Project under its National Mission on Education through ICT (NME-ICT)) on Botany/Molecular Biology; Paper Coordinator: S B Babbar (<http://epgp.inflibnet.ac.in/browse.php?&category=343>; <http://epgp.inflibnet.ac.in/ahl.php?csrno=4>) Released on August 14, 2014
5. Sandip Das (2014) Recombination. In e-book (e-Pathshala; An MHRD Project under its National Mission on Education through ICT (NME-ICT)) on Botany/Molecular Biology; Paper Coordinator: S B Babbar (<http://epgp.inflibnet.ac.in/browse.php?&category=343>; <http://epgp.inflibnet.ac.in/ahl.php?csrno=4>) Released on August 14, 2014
6. Sandip Das (2014) Bacterial (Prokaryotic) Replication. In e-book (e-Pathshala; An MHRD Project under its National Mission on Education through ICT (NME-ICT)) on Botany/Molecular Biology; Paper Coordinator: S B Babbar

- (<http://epgp.inflibnet.ac.in/browse.php?&category=343>;  
<http://epgp.inflibnet.ac.in/ahl.php?csrno=4>) Released on August 14, 2014
7. Sandip Das (2014) DNA replication. In e-book (e-Pathshala; An MHRD Project under its National Mission on Education through ICT (NME-ICT)) on Botany/Molecular Biology; Paper Coordinator: S B Babbar (<http://epgp.inflibnet.ac.in/browse.php?&category=343>;  
<http://epgp.inflibnet.ac.in/ahl.php?csrno=4>); Released on August 14, 2014
  8. Sandip Das and Arun Jagannath (2013): Introduction to Bioinformatics. E-content for Virtual Learning Environment (VLE), Institute for Life Long Learning, University of Delhi (<http://vle.du.ac.in/mod/book/view.php?id=8909>); ISSN number: 2349-154X (e-Book chapter; edited by Rama Sisodia)
  9. Sandip Das (2013): Biological Databases- NCBI Database. E-content for Virtual Learning Environment (VLE), Institute for Life Long Learning, University of Delhi (<http://vle.du.ac.in/mod/book/view.php?id=8916>); ISSN number: 2349-154X (e-Book chapter; edited by Rama Sisodia)
  10. Sandip Das (2013): NCBI- Data Submission. E-content for Virtual Learning Environment (VLE), Institute for Life Long Learning, University of Delhi (<http://vle.du.ac.in/mod/book/print.php?id=8909>); ISSN number: 2349-154X (e-Book chapter; edited by Rama Sisodia)
  11. Sandip Das (2013): NCBI- Similarity searching tool-BLAST. E-content for Virtual Learning Environment (VLE), Institute for Life Long Learning, University of Delhi (<http://vle.du.ac.in/mod/book/view.php?id=8919>); ISSN number: 2349-154X (e-Book chapter; edited by Rama Sisodia)
  12. Sandip Das (2013): EMBL. E-content for Virtual Learning Environment (VLE), Institute for Life Long Learning, University of Delhi (<http://vle.du.ac.in/mod/book/view.php?id=8903>); ISSN number: 2349-154X (e-Book chapter; edited by Rama Sisodia)
  13. Sandip Das (2013): Sequence alignment. E-content for Virtual Learning Environment (VLE), Institute for Life Long Learning, University of Delhi (<http://vle.du.ac.in/mod/book/view.php?id=8922>); ISSN number: 2349-154X (e-Book chapter; edited by Rama Sisodia)
  14. Gunjan Kumari, Karuna Kusumanjali, P. S. Srivastava and Sandip Das (2012) Aspects of miRNAs in somatic embryogenesis. In: Somatic Embryogenesis and Gene Expression (eds: Junaid Aslam, P. S. Srivastava and M. P. Sharma), Narosa Publishing PP: 231-244
  15. Sapna Maik-Ahlawat, Alka Narula, Sandip Das and P S Srivastava PS (2009) Clonal fidelity in micropropagated plants. In: Ashwani Kumar and N.S. Shekhawat, (Eds) Plant Tissue Culture and Molecular Markers: Their Role in Improving Crop Productivity: I.K. International Publishers, pg: 93-108
  16. Sandip Das (2007) Genetic recombination and mutations. In: e-book on Cell Biology and Genetics. National Science Digital Library (NSDL) project of National Institute of Science Communication and Information Resources (NISCAIR), CSIR <http://nsdl.niscair.res.in/jspui/handle/123456789/244> (edited by S L Kothari;)
  17. Srivastava PS, Sopory SK, Rajam MV, Narula Alka, Srivastava Toolika and Sandip Das (2008) Transgenics of some medicinal plants. In: Ashwani Kumar and SK Sopory (Eds) Recent Advances in Plant Biotechnology and its Applications, I.K. International Pvt. Ltd. Delhi, Volume 1, pp. 594-603
  18. Sandip Das, Ulf Lagercrantz, Martin Lascoux (2007) Black Mustard (*Brassica nigra*). In C. R.

- Kole (ed) Genome mapping, Molecular Breeding and Genomics: Volume 2- Oilseeds; Springer-Verlag GMBH, Heidelberg, Germany, pp. 264-274
19. Narula A, Malik S, Srivastava T, Kumar S, Das S and Srivastava P.S. (2004) Plant biodiversity and its conservation through in vitro technique. In: Dargan, JS and Sharma, TA (eds) Plant Diversity in India; Bishen Singh Mahendra Pal Singh, Dehradun, India, pp. 127-146
20. Lakshmikumaran M, Das S, Srivastava PS (2003) Application of Molecular markers in Brassica coenospecies: Comparative mapping and Tagging. In, Toshiyuki Nagata and Satoshi Tabata (eds) Brassicas and Legumes: From Genome Structure to Breeding. Biotechnology in Agriculture and Forestry (BAF) Series, Volume 52. Springer Verlag. Pp 37-68
21. Srivastava P.S., Pande D, Datta A and Das S (2002) Biotechnological approaches to potential anticancerous herbal drugs of the future. In: Khan, IA and Khanum, Atiya (eds) Role of Biotechnology in Medicinal and Aromatic Plants. Vol. V: Special Edition on Cancer, Ukaaz Publ., Hyderabad, pp 1-20
22. Lakshmikumaran M, Das S, Rajagopal J, Goswami J, Negi MS and Bhatia S (1997) Repeated DNA sequences in plants: organization, evolution and applications. In PK Gupta, SP Singh, HS Balyan HS, PC Sharma (eds) Proceeding of symposium on Genetics and Biotechnology in Crop Improvement. Rastogi Publication, Meerut, India, pp 63-93 [currently out of print]

#### Popular / General Articles:

1. Sandip Das (2015) Sequencing and Bioinformatics: A Primer. The Botanica 64 & 65: 10-14
2. Saurabh Anand, Neer K Singh and Sandip Das (2015) Insights into anther development is necessary for crop improvement. The Botanica 64 & 65: 143-150
3. Ekta Bhardwaj and Sandip Das (2016) Recent advances in designing synthetic and bi-directional plant promoters. The Botanica 66: 12-18
4. Mukund Lal and Sandip Das (2016) MYB transcription factors and their putative roles in Brassica gynoecium development. The Botanica 66: 63-69
5. Swati Singh, R Geeta and Sandip Das (2016) Genetic elements involved in cuticle biosynthesis and regulation, with emphasis on plant fatty acid elongase (3 keto acyl CoA synthase) – A review. The Botanica 66: 125-143

#### Publications in the Last one year

##### Research Articles

1. Saurabh Anand, Mukund Lal and **Sandip Das** (2018) Identification of pre-meiotic and post-meiotic stages of pollen, standardization and validation of a modified method for RNA isolation from anther, pistil and developing seed of *Brassica rapa*. International Journal of Plant Reproductive Biology. 10(2) July, 2018, pp.178-183. DOI 10.14787/ijprb.2018.10.2
2. Swati Singh, **Sandip Das**, R. Geeta (2018) A segmental duplication in the common ancestor of Brassicaceae is responsible for the origin of the paralogs KCS6-KCS5, which are not shared with other angiosperms. Molecular Phylogenetics and Evolution 126:331-345
3. Chetan Chauhan, Gauri Joshi, Darshna Chaudhary and **Sandip Das** (2018) An improved method for rapid analysis of promoters using modified sonication-assisted transient assay. 3Biotech April 2018, 8:198
4. Aditi Jain, Saurabh Anand, Neer K Singh, **Sandip Das** (2018) Sequence and Functional Characterization of MIRNA164 Promoters from Brassica Shows Copy Number Dependent Regulatory Diversification Among Homeologs. Functional and Integrative Genomics. Volume 18, Issue 4, pp 369–383



5. Chandan Barman, Vineet Singh, **Sandip Das** and Rajesh Tandon (2018) Floral contrivances and specialized pollination mechanism confer strong influence to elicit mixed-mating in *Wrightia tomentosa* (Apocynaceae); *Plant Biology* 20: 546–554
6. Gunjan Sirohi, Karuna Kusumanjali, Ritesh Kumar, Aditi Jain, P. S. Srivastava and **Sandip Das** (2018) Synteny analysis and functional characterization of miR165a from *Brassica* species. *Acta Physiologia Plantarum*. 40: 16.
7. Neer K. Singh, Saurabh Anand, Aditi Jain and **Sandip Das** (2017) Comparative Genomics and Synteny Analysis of KCS17-KCS18 Cluster Across Different Genomes and Sub-genomes of Brassicaceae for Analysis of Its Evolutionary History. *Plant Mol Biol Rep*. 35:237–251 (DOI 10.1007/s11105-016-1019-6)

#### **Book Chapters:**

1. Swati Singh, Sandip Das and R. Geeta (2018) ROLE OF CUTICULAR WAX IN ADAPTATION TO ABIOTIC STRESS - A MOLECULAR PERSPECTIVE. In S. M. Zargar, M. Y. Zargar (eds.), *Abiotic Stress-Mediated Sensing and Signaling in Plants: An Omics Perspective*, [https://doi.org/10.1007/978-981-10-7479-0\\_5](https://doi.org/10.1007/978-981-10-7479-0_5): Springer Nature Singapore Pte Ltd. pp 155-182
2. Aditi Jain, Gauri Joshi, Chetan Chauhan, Sandip Das (2018) ABIOTIC STRESS RESPONSE IN PLANTS: A CIS-REGULATORY PERSPECTIVE. In S. M. Zargar, M. Y. Zargar (eds.), *Abiotic Stress-Mediated Sensing and Signaling. In Plants: An Omics Perspective*, [https://doi.org/10.1007/978-981-10-7479-0\\_6](https://doi.org/10.1007/978-981-10-7479-0_6) Springer Nature Singapore Pte Ltd.. pp:183-205

#### **Popular / General Articles:**

None

#### **Conference Organization/ Presentations (in the last three years)**

##### **Organizing member:**

1. National Seminar on Identifying and Avoiding Publishing in Predatory Journals: A Lesson for Researchers Department of Botany, University of Delhi; March 18, 2017 (Organizing secretary)
2. National Conference on Plant Science Research: Looking beyond 21st Century for Environmental and Agricultural Revolution. February 5-7, 2016, Department of Botany, University of Delhi

##### **Invited talks**

1. Comparative analysis of organisation, evolutionary history and function of regulatory elements: insights gained from Brassicaceae (2018) NATIONAL SYMPOSIUM ON PLANT BIOTECHNOLOGY 2018: RECENT TRENDS IN PLANT PROPAGATION, GENETIC IMPROVEMENT & INDUSTRIAL APPLICATIONS; and 39th annual meeting of PTCA; 16th to 18th February 2018, AFRI, Jodhpur
2. Sequence analysis: annotation and alignment strategies: an overview (2018) Sandip Das. Recent trends in Bioinformatics; DDU College, Delhi University; January 31, 2018
3. Plant cuticle: evolution, structure, and function of cuticular waxes (2017) Swati Singh, R Geeta and Sandip Das. 3rd Plant Proteomics Workshop: Mining Proteome & Deep Proteome (by sub-cellular proteome analysis, depletion, affinity enrichment) and beyond. Department of Botany, University of Delhi; December 21, 2017
4. Analysis of Evolutionary Trajectories and Cis-regulation of microRNAs, the master regulators. (2016) Aditi Jain, Priyanka Rathore, R.Geeta, Sandip Das. 37th Meeting of PTCA (I) and National Symposium on “Plant Biotechnology for Crop Improvement”, NBRI, Lucknow, February 25-27, 2016
5. Evolutionary and Functional Analysis of Transcriptional Regulators (microRNAs) from

- Brassica species (2016) Aditi Jain, Priyanka Rathore, Saurabh Anand, R. Geeta, Sandip Das. National Conference on Plant Science Research: Looking beyond 21st Century for Environmental and Agricultural Revolution February 5-7, 2016; University of Delhi, Delhi
6. Evolution and Regulation of the Regulators (2015) Sandip Das\*, Aditi Jain, Priyanka Rathore, R. Geeta and Saurabh Anand. Theoretical and Practical course on "microRNAs in Plant development and stress" November 27, 2015, ICGEB, New Delhi
  7. Understanding floral transition and flower development: Implications for crop improvement" Workshop on "Reproductive Biology of Angiosperms" 16th & 17th March, 2015; Organized by Department of Botany, Dyal Singh College, and Institute of Lifelong Learning UDSC
  8. Understanding the cis-regulation of miR164 and its targets during development and stress signalling in Brassica juncea. 36th Meeting of PTCA (I) and National symposium on Biotechnology and Molecular Biology for Industry and Common man. 29-31 January, 2015. St. Aloysius College, Mangalore

#### **Abstracts and Posters (last three years)**

1. Ekta Bhardwaj, Priyanka Rathore, and Sandip Das (2018) Analysis of non- canonically arranged MIR genes and associated cis-elements associated with them in *A. thaliana* and selected members of Brassicaceae. NATIONAL SYMPOSIUM ON PLANT BIOTECHNOLOGY 2018: RECENT TRENDS IN PLANT PROPAGATION, GENETIC IMPROVEMENT & INDUSTRIAL APPLICATIONS; and 39th annual meeting of PTCA; 16th to 18th February 2018, AFRI, Jodhpur
2. Mukund Lal, Saurabh Anand and Sandip Das (2018) Effects of silencing and over-expression of a R2R3-MYB, AtMYB32, in *Arabidopsis thaliana*. NATIONAL SYMPOSIUM ON PLANT BIOTECHNOLOGY 2018: RECENT TRENDS IN PLANT PROPAGATION, GENETIC IMPROVEMENT & INDUSTRIAL APPLICATIONS; and 39th annual meeting of PTCA; 16th to 18th February 2018, AFRI, Jodhpur (Oral; Mr. Mukund Lal)
3. Swati Singh, R.Geeta, Sandip Das (2018) Impact of gene duplication on the regulation of paralogous genes, KCS5 and KCS6, involved in cuticular wax biosynthesis. NATIONAL SYMPOSIUM ON PLANT BIOTECHNOLOGY 2018: RECENT TRENDS IN PLANT PROPAGATION, GENETIC IMPROVEMENT & INDUSTRIAL APPLICATIONS; and 39th annual meeting of PTCA; 16th to 18th February 2018, AFRI, Jodhpur
4. Aditi Jain<sup>1,2</sup>, Anandita Singh<sup>2</sup> and Sandip Das (2018) Sequence and functional characterization of MIRNA164-NAC regulatory module in polyploid genomes of Brassica. NATIONAL SYMPOSIUM ON PLANT BIOTECHNOLOGY 2018: RECENT TRENDS IN PLANT PROPAGATION, GENETIC IMPROVEMENT & INDUSTRIAL APPLICATIONS; and 39th annual meeting of PTCA; 16th to 18th February 2018, AFRI, Jodhpur
5. Nishu, Meenakshi Dangwal, Sandip Das (2018) Genome wide analysis of OVATE family proteins (OFPs) in some selected members of Brassicaceae. NATIONAL SYMPOSIUM ON PLANT BIOTECHNOLOGY 2018: RECENT TRENDS IN PLANT PROPAGATION, GENETIC IMPROVEMENT & INDUSTRIAL APPLICATIONS; and 39th annual meeting of PTCA; 16th to 18th February 2018, AFRI, Jodhpur
6. Gauri Joshi, Chetan Chauhan, and Sandip Das (2018) Functional conservation and diversification of mir319 promoter homologs in Brassica juncea. NATIONAL SYMPOSIUM ON PLANT BIOTECHNOLOGY 2018: RECENT TRENDS IN PLANT PROPAGATION, GENETIC IMPROVEMENT & INDUSTRIAL APPLICATIONS; and 39th annual meeting of PTCA; 16th to 18th February 2018, AFRI, Jodhpur
7. Gauri Joshi, Chetan Chauhan and Sandip Das (2017) Molecular Evolutionary History of MIRNA319 Gene Family Across Brassicaceae. XXVII ANNUAL CONFERENCE OF INDIAN ASSOCIATION FOR ANGIOSPERM TAXONOMY & INTERNATIONAL SYMPOSIUM ON "PLANT SYSTEMATICS: PRIORITIES AND CHALLENGES". Department of Botany, University of Delhi, Delhi-110007, India November 10-12, 2017
8. Swati Singh, R. Geeta, Sandip Das (2017) CHARACTERIZATION OF GENETIC ELEMENTS

INVOLVED IN CUTICULAR WAX BIOSYNTHESIS. International conference on “Technological Advancement for Sustainable Agriculture and Rural Development (TASARD-India 2017). Amity University, Noida, India, February 20-22, 2017

9. Saurabh Anand, Neer Komal Singh and Sandip Das (2017) Trait modification using Bjunmir159a dependent regulation of MYB33/65. In “National symposium on Plant Biotechnology: current perspectives on Medicinal and Crop Plants” and 38<sup>th</sup> Annual Meeting of Plant Tissue Culture Association (India). IICB, Kolkata, March 3-5, 2017
10. Neer Komal Singh, Saurabh Anand and Sandip Das (2016) Synteny of the KCS17-KCS18 cluster across brassicaceae and functional analysis of KCS18. National Conference on Basic and Applied Researches in Plant and Microbes. Department of Botany, Punjabi University, Patiala-147002; November 3-5, 2016
11. Gauri Joshi, Chetan Chauhan, Aditi Jain, Sandip Das (2016) Understanding transcriptional regulation of miRNA319 in polyploid Brassica Genomes through analysis of promoters. 2<sup>nd</sup> International conference on Plant Genetics and Genomics: Agrigenomics INDIA 2016; 19-20 August 2016; Organized by SelectBio at Radisson Blu Plaza, Delhi
12. Swati Singh, R. Geeta, Sandip Das (2016) Analysis of Genetic Elements Involved In Cuticular Wax Biosynthesis. In: 2016 NextGen genomics, biology, bioinformatics and technology (NGBT) conference, October 3-5, 2016, SciGenom Research Foundation (SGRF), Cochin
13. Swati Singh\*, R. Geeta, Sandip Das (2016) Evolutionary and functional analysis of genetic elements involved in cuticular wax biosynthesis. National Conference on Plant Science Research: Looking beyond 21st Century for Environmental and Agricultural Revolution February 5-7, 2016; Department of Botany, University of Delhi, Delhi---110007
14. Neer K Singh, Saurabh Anand and Sandip Das (2016) Comparative and functional genomics of FAE1 across Brassicaceae towards understanding its evolutionary dynamics and role in development. National Conference on Plant Science Research: Looking beyond 21st Century for Environmental and Agricultural Revolution February 5-7, 2016; Department of Botany, University of Delhi, Delhi---110007
15. Saurabh Anand\*, Neer Komal Singh\*, and Sandip Das (2015) Unravelling the role of miR159-MYB65 module from Brassica in regulating reproductive organ development. Third International Plant Physiology Congress. December 11-14, 2015, JNU, New Delhi, India

#### **Research Projects (Major Grants/Research Collaboration)**

##### **Ongoing:**

1. “Identification of trans-factors interacting partners of promoters of a miRNA-transcription factor module from *Brassica juncea*”( DBT; Govt. of India)

##### **Completed:**

1. Transcriptome and cis-elements characterization of miRNAs and their targets. (DU R&D) 3.0 Lakhs 2015-2016
2. "Molecular analysis of the promoter elements associated with Brassica miRNA genes" (DBT, Govt. of India;)
3. RNAi mediated modification of oil quality in *Brassica*” Subproject under the DBT consortia project on “Development... Wheat” (DBT, Govt. of India)
4. Characterization of developmentally regulated promoters from *Brassica* species (UGC)
5. Assessment of genetic diversity of two medicinal plants *Terminalia* and *Tribulus* through AFLP. (DBT; Govt. of India)
6. Isolation and characterization of transcription factor and microRNA genes from *Brassica*

<p>and investigation into molecular basis of morphological variation. DBT; Govt. of India)</p> <ol style="list-style-type: none"> <li>7. Trait manipulation using microRNA genes in <i>Brassica juncea</i>” Subproject under the DBT consortia project on “Development ..... Wheat” (DBT; Govt. of India)</li> <li>8. UK-India Partnering Award for <i>Enhancing Oilseed Crop Improvement through Genomic Approaches</i> (<b>Indian Co-Partner</b>; In collaboration with Dr. Graham King, Rothamsted Research, Harpenden, UK, and Dr. Ian Bancroft, John Innes Center, Norwich, UK; Funding agency- (<b>BBSRC</b>), <b>UK</b>)</li> <li>9. Molecular analysis of regulatory genes and associated cis elements (DU R&amp;D) 2.5 Lakhs 2010-2011</li> <li>10. Molecular and functional analysis of regulatory genes (DU R&amp;D) 2.5 Lakhs 2011-2012</li> <li>11. Informatics, Molecular and Functional Analysis of Regulatory Genes. (University of Delhi, R&amp;D grant) 2012-2013</li> <li>12. Functional Analysis of regulatory elements from Brassica Species. (DU R&amp;D) 2.8 Lakhs 2013-2014</li> <li>13. Investigations into role of miRNAs and MYBs in development. (DU R&amp;D) 3.0 Lakhs 2014-2015</li> </ol>
<p><b>Awards and Distinctions</b></p> <ol style="list-style-type: none"> <li>1. Max Planck Institute post-doctoral fellowship, at the Max Planck Institute for Development Biology, Department of Molecular Biology, Tuebingen, Germany (2002-2004; Professor Detlef Weigel)</li> <li>2. Cornell University, Ithaca, New York, USA Post-doctoral fellowship [Professor Mikhail Nasrallah, Department of Plant Biology, Cornell University, USA (1999)]</li> <li>3. JRF/SRF from Council of Scientific and Industrial Research (CSIR), Govt. Of India; 1993-98</li> <li>4. National Eligibility Test (NET) conducted by Agricultural Recruitment Services Board (ARSB) in 1994</li> </ol>
<p><b>Association With Professional Bodies</b></p> <p><b>Memberships of Academic Bodies</b></p> <ol style="list-style-type: none"> <li>1. Indian National Science Congress (Life member)</li> <li>2. Society for Plant Biochemistry and Biotechnology, India (Life member)</li> <li>3. Nominated Member: Plant Tissue Culture Association (India)</li> <li>4. Indian Botanical Society (Life member)</li> <li>5. Delhi University Botanical Society (Life member)</li> <li>6. International Society of Plant Morphologists (Life member)</li> </ol>
<p><b>Other Activities</b></p> <p><b>Reviewing:</b></p> <ul style="list-style-type: none"> <li>• Project reviewer for DBT, SERB-DST</li> <li>• Manuscript reviewer for PLoS One, J Bioscience, IJGPB, Phytomorphology, Biotechnology Journal, Molecular Biology Reports, PMBP, Plant Science, FIGE, BMC Genomics, Acta Physiologiae Plantarum, Critical Reviews in Biotechnology, Biologia Plantarum, Scientific Reports etc.</li> </ul> <p><b>Advisory Committees and Boards:</b></p>