

## INDIAN INSTITUTE OF TECHNOLOGY (BHU)

**1. Name in Full:** Sasankasekhar Mandal

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**3. Date of Birth:** 01.01.1970 **4. Nationality:** Indian **5. Sex :** Male

**6. Present Position (Designation, Organisation and Total Emoluments):** Professor,  
Department of Civil Engineering, IIT (BHU)

**7. Salary/Total Emoluments Expected at IIT (BHU):** As admissible as per IIT(BHU) norms

**8. Areas of Specialization:** Structural Engineering

**Title of M. Tech. Dissertation :** Analysis of box girder bridges using 3-D curved shell elements

**Title of PhD Dissertation :** Some aspects of numerical simulation of wind flow around bluff bodies.

**9. Current Areas of Research:** 1. Wind effect on tall buildings, 2. Carbonation induced corrosion and deterioration of concrete structures, 3. Shear lag phenomenon in multi-storied building, 4. Across-wind loading of tall buildings and chimneys.

### 10. Academic Record (starting with Bachelor's Degree)

Degree (Subjects)	Institution	Year	Marks & Division	Position/Rank	Remarks
B.E.	Jadavpur University, Kolkata – 32	1993	84.33 & 1 <sup>st</sup> div.	3 <sup>rd</sup> rank in the class	
GATE Exam 1993	Min. of Human Resources Dev.	1993	98.90 percentile	-	
M.E.	University of Roorkee	1996	83.00	1 <sup>st</sup> rank, University Medallist	
Ph. D.	IIT Roorkee	2002	-	-	
2 Year Diploma in Japanese language	Banaras Hindu University	2009	83.4	-	

*For items 12 through 16 use separate sheets for each sub-heading in the format indicated. All annexures should be consecutively arranged and must bear your name and signature.*

## **12. Previous Experience (in reverse chronological order)**

A) Research Experience (excluding research done for M.Tech./M.Pharm./M.Phill./Ph.D. Degrees)

Duration	Organisation	Area(s)
07 days (DAAD fellow, Guest Scientist Visa) 22.03.2014 – 31.03.2014	Technical University of Braunschweig, Germany	Buffeting response of guyed mast towers

B1) Teaching Experience

Duration		Organisation	Area(s)
Date of joining	Date of leaving		
11.03.02	24.12.2002	Birla Institute of Technology and Science (BITS), Pilani	Lecturer in Civil Engg.
26.12.02	31.04.2007	Institute of Technology Banaras Hindu University, Varanasi	Lecturer in Civil Engg (Structural Engg.)
31.04.07	30.10.2007	Institute of Technology Banaras Hindu University, Varanasi	Senior Lecturer (Structural Engg.)
30.10.07	30.10.2010	Institute of Technology Banaras Hindu University, Varanasi	Reader in Civil Engg
30.10.10	Till date	Indian Institute of Technology (Banaras Hindu University), Varanasi	Associate Professor in Civil Engg.

B2) Courses Taught

Course No. & Title	Level (UG/PG)	Number of Times	Developed by you?
Hu 326 : Human Values	UG	8	No
CE 461/ CE 4402 Project	UG	4	No
CE 315 Structural Design I	UG	2	No
CE 252/ CE 2301 Laboratory	UG	6	No
CE 353/ CE 3303 Civil Engineering Design I	UG	7	No
CE 2101 Mechanics of solid	UG	3	No

CE 2201 Structural Mechanics I	UG	5	No
CE 3202 Structural Design II	UG	2	No
CE 3402 Civil Engineering Design II	UG	6	No
CE 4108/CE 5121 Matrix analysis of structures	UG & PG	1	No
CE 4205/CE 5227 Prestressed concrete structures	UG & PG	1	No
CE 5122 Concrete structures	UG (IDD) & PG	9	No
CE 5127 Advanced Concrete Technology	UG (IDD) & PG	6	No
CE 5221 Theory of Plates	UG (IDD) & PG	3.	No
CE 5222 Shell Structures	UG (IDD) & PG	3	No
CE 5233 Finite element method	UG (IDD) & PG	4	No
CE 5403 Project	UG (IDD) & PG	7	No

C) Thesis (M. Tech./ M. Pharm./ M. Phil./ Ph.D. Degrees) Supervision

S.No.	Name	Year of Completion	Title of Thesis	Co-guides (if any)
PhD 1	Gyani Jail Singh	Submitted	Analysis of shear lag phenomenon of tall buildings (tentative topic, i.e., broad area)	Dr. Rajesh Kumar
PhD 2	Gaurav Gugliani	December 2013 (ONGOING)	Statistical modeling of extreme wind climate of India (tentative topic, i.e., broad area)	Dr. Arnab Sarkar
1	Rishikesh Ranjan	May 2015	Siesmic Analysis of regular RC building frame	-
2	Preetam S. Meena	May 2015	Time History Analysis of Multi-storey building	-
3	Bhavesh Patidar	May 2015	Artificial neural network modeling of wind load on RC chimney	-
4	Ashok Meena	May 2015	Interference effect of adjacent building on wind load	-
5	Patil Amit Rajendra	May 2015	<i>Local pressure coefficient on balconies</i>	-
6	Ankita Sonkar	June 2014	Analysis of typical joints	-

			used in prefabricated buildings	
7	Sushila Sharma	June 2014	Numerical simulation of carbonation propagation in concrete structures	Dr. Rajesh Kumar
8	Harikesh Jaisawal	2014-2015	<i>Allocation analysis of buildings with shear walls</i>	-
9	Harsh Gupta	June 2014	Across wind buffeting analysis of tall buildings	Dr. Mathias Clobes (TUB, Germany)
10	Aditya Mishra	June 2014	Dynamic response of base isolated multi-storeyed buildings	Dr. P. R. Maiti
11	Ankit Singh	June 2014	Estimation of interference effect of building using Computational wind engineering	-
12	Abhishek Verma	June 2014	Dynamic response of multi-storey building with and without lintel beams	-
13	Inturi Ram Charan	June 2014	Effect plan ratio of building on gust effective factor	-
14	Ankit Saxena	2013	Analysis of multi-storey building with and without lintel beams under various lateral loads	-
15	Akshay Kumar Pandey	2013	A study on confinement index and ductility ratio of RCC columns	Dr. P. R. Maiti
16	Pawan Kumar Das	2013	Modeling and analysis of a 4-storey confined brick masonry building	Dr. P. R. Maiti
17	Navneet Kumar	2012	Simulation of extreme wind climate of India with the aid of statistical and computational modeling	Dr. Arnab Sarkar
18	Abhishek Choudhury	2012	Comparison between classical method and FEM for T-beam bridges	-
19	Hussain Singapurwala	2012	Analysis of shear wall with openings	-
20	Mikhil Jain	2012	Analysis of Diaphragm action in RC multi-storey buildings	-
21	Gyani Jail Singh	2012	Relative Influence of beam and column stiffness on SLP in high rise structures	-
21	Alok Chaubey	2012	Yield line analysis of rectangular slabs by finite element method	Dr Rajesh Kumar & Prof. V. Kumar
22	L. V. Viju	2012	Analysis of Box girder bridges	-

23	Rohit Changlani	2011	Thermal stress analysis of RC chimneys	-
24	Rajesh Kumar	2011	Yield line analysis of RC skew slabs	Prof. V. Kumar
25	Amit Rajan	2011	Shear-lag effect on corner modified frame tube structures	-
26	Kamlesh Patel	2011	Prestress in composite bridge	Prof. P. K. Singh
27	Pankaj Chowdhury	2011	Analysis of frame structure building under blast load	Dr. P. R. Maiti
28	Satya Prakash	2010	Static analysis of suspension bridges using deflection theory	-
29	Mohit Jaiswal	2010	Wind loading on Reinforced concrete chimneys	-
30	Neeraj Kumar	2010	Effect of varying span on design of RC T-beam bridge deck and its elastomeric bearings	-
31	Bipin K. Nelaturi	2009	Analysis of transmission line towers under broken wire conditions	Prof. V. Kumar
32	Yesh K. Jain	2009	Shear Lag Phenomenon in high rise structures	-
33	Deepak	2008	Estimation Equivalent Static Wind Load for tall buildings	-
34	Kainkun	2008	Prediction of Compressive strength by ANN	Prof. V. Kumar
35	Devendra Verma	2007	Buckling of thin plates subjected to in-plane loading	-
36	K. Sunil K. Reddy	2007	Effect of opening in shear walls in Multi-storied Buildings	-
37	Tarun Saurav	2006	Relative performance of four noded and eight noded iso-parametric plate bending elements	-
38	Krishna Murari	2006	Effect of reinforcement ratio or ductility and rotation capacity of Reinforced Concrete Beams	Prof. V. Kumar
39	Brijesh Kumar	2004	Analysis of plates using iso-parametric plate bending elements	-

#### D) Sponsored Projects

Period	Sponsoring Organisation	Title of Project	Amount of Grant	PI, Co-PI or Co-Investigator
2005	Consortium for Educational Communication (An Inter University Centre of University Grants (UGC) Commission on Electronic Media), NSC Campus, Aruna Asaf Ali Marg, New Delhi -110067.	“E-Content Development Project on Concrete Technology”,	Rs. 1,02,000/-	Prof. V. Kumar & Dr Rajesh Kumar
2005	HUDCO, New Delhi	Construction of Building Centre at Department of Civil Engineering, IIT (BHU), Varanasi & transfer of technology	Rs. 2,00,000/-	Prof. V. Kumar & Dr Rajesh Kumar & others

E) Consultancy (may refer to the office file of the Department of Civil Engineering, IIT (BHU), Varanasi, UP 221 005. Consultancy services have been done to the Central Govt., State Govt. & Private agencies & in the Laboratory based testing and consultancy services.

#### F) Professional Experience

Period	Organization	Title of Project and Nature of Work	Co-guides (if any)
02.08. 1993 to 05.07. 1996*	Development Consultants Limited, Kolkata – 16	Design Engineer (Civil)	- * M. E degree of duration 1 ½ years was completed with study leave
08.07. 1996 to 27.05. 1997	Military Engineer Services, Ministry of Defence, Govt. of India	Assistant Surveyor of works	-

13. Publications (Enclose reprint of the best papers (about five) in your judgement)

A). Papers in Refereed Journals (List those published and accepted separately)

S. No.	Author(s)	Year	Title	Complete Reference of Journal
1	Mandal, S., Ojha, C. S. P., and Bhargava, P.	2001	Significance of correlation coefficient in evaluating Reynolds Stresses	J. Wind Engineering, <b>Japanese Association for Wind Engineering</b> , 89(10), 317-320.
2	Ojha, C. S.P., Mandal, S., and Bhargava, P.	2001	Aspects of Inlet boundary prescription for a turbulent flow field	J. Hydraulic Engineering, <b>ASCE</b> , 127(8), 694-700
3	Mandal, S., Ojha, C. S. P., and Bhargava, P.	2005	Wind turbulence modelling at near wall zone using k-epsilon model : A review	<b>J. of Wind &amp; Engrg., ISWE</b> , Vol. 2, No.1, 52 – 59.
4.	Kumar, D. & Mandal, S.	2014	Uncertainty in improving durability aspects and mechanical properties of bamboo-reinforced concrete.	<b>Int. J. of Advanced Research and Ideas and Innovations in Technology</b> , ( <a href="http://www.ijariit.com">www.ijariit.com</a> ), Vol. 1, Issue 1, pp. 1-5.
5.	Kumar, N. and Mandal, S.	2015	The effect of varying span on design of short span reinforced concrete T-beam bridge deck.	<b>Int. J. of Engineering Research &amp; Technology (IJERT)</b> , ( <a href="http://www.ijert.com">www.ijert.com</a> ), Vol. 4(2), 282-284.

B). Papers published in Conference Proceedings

S. No.	Author(s)	Year	Title	Name and Place of Conference
1	Mandal, S., Ojha, C. S. P., and Bhargava, P	2001	Significance of correlation coefficient in evaluating Reynolds Stresses	Fifth Asia-Pacific Conf. On Wind Engrg., Kyoto

2	Kumar, V., Kumar, R., Mandal, S. and Sinha, A.N.	2005	<i>Admixtures for Underwater Concreting for Repair of Cracks in the Structure</i>	<i>Our World in Concrete &amp; Structures SINGAPORE</i>
3	Kumar, V., Kumar, R., Mandal, S. and Sinha, A.N.	2005	<i>Use of Admixtures in Concrete: An Indian Scenario”, International Pre – conference Workshop, Our World in Concrete &amp; Structures</i>	<i>-do- SINGAPORE</i>
4	Kumar, M., and Mandal, S	1999	Analysis of box girder bridges using finite element method	Proc. of Int. Conf. on Structural Engineering, Ghaziabad
5	Mandal, S., Ojha, C. S. P., and Bhargava, P	2002	Numerical simulation of wind flow around buildings: Adoption of model constants.	Proc. of National Wind Engineering, Roorkee
6	Dam, S., and Mandal, S	2003	Retrofitting Structurally distressed bridges	18 <sup>th</sup> Indian Engineering Congress, Lucknow, December
7	Mandal, S., Ojha, C. S. P., and Bhargava, P	2004	Wind turbulence modeling at near zone using k- $\epsilon$ model: A review	National Conference on Wind Engineering, Nagpur
8	Vihwal, V., and Mandal, S	2004	A parametric study on frame shear wall interaction under wind load	National Conference on Wind Engineering, Nagpur
9	Kumar, V., Asha, K., and Mandal, S	2004	A study on properties of cement partially replaced by silica fumes	All India seminar on ‘Innovations in design and construction of Concrete Structures, Varanasi



10	Kumar, V., Ali, S., and Mandal, S	2004	Fly ash lime gypsum sand bricks versus fly ash lime cement sand bricks: a comparison	All India seminar on 'Innovations in design and construction of Concrete Structures, Varanasi
11	Gaurav, Mandal, S., Kumar, R. and Kumar, V	2005	Linear Deflection Analysis of Beam Using Genetic Algorithms	Indian Concrete Institute, U.P., Varanasi Centre, Varanasi
12	Saha, R., Kumar, R., Mandal, S. and Kumar, V	2005	Cracks: Cure and Prevention	Indian Concrete Institute, U.P., Varanasi Centre, Varanasi
13	Kumar, V., Kumar, R., and Mandal, S	2006	Retrofitting of Under Water Structures	<i>All India Seminar on Earthquake Resistant Design, Construction, Retrofitting and Rehabilitation of Building, Varanasi</i>
14	Kumar, D., Mandal, S. and Kumar, V	2007	Some aspects of estimation of equivalent static wind load on tall buildings	Proc. of National Conference on Wind Engg (NCWE), Chennai
15	Kumar, D., and Mandal S	2011	Estimation of Gust effective factor using IS 875 (Part 3) – 1987 and modifications proposed by Prem Krishna (2002)	Proc. Recent Advances in Civil Engineering, Varanasi
16	Mandal, S., and Kumar, D	2012	Estimation of ESWL using modifications proposed by Prem Krishna (2002)	National Conf on Wind Engineering, CRRI, New Delhi
17	Jaiswal, M., and Mandal, S	2012	A parametric study of ESWL on RC chimneys	National Conf on Wind Engineering, CRRI, New Delhi

18	Jain, Y. K., and Mandal, S	2012	A case study on shear lag phenomenon in tubular structures under wind load	6th National Conf on Wind Engineering, CRRI, New Delhi
19	Sarkar, A., Kumar, N., and Mandal, S	2012	Specification of design wind speed due to monsoon gale	National Conf on Wind Engineering, CRRI, New Delhi
20	Singh, A., and Mandal, S	2012	A state of the art review on interference effect of structures subjected to wind loads	National Conf on Wind Engineering, CRRI, New Delhi
21	Mandal, S	2013	Uncertainties in prediction and evaluation of carbonation propagation : recent developments	International UKIERI Concrete Congress, Jalandhar
22	Mandal, S	2013	Water conservation for holistic harnessing of energy & development of Sikkim : Structural Engineering aspects	Water conservation year 2013, Central Water Commission, Gangtok
23	Singh, G. J., Mandal, S., and Kumar, R	2013	Effect of additional columns on plan of multi-story building on shear lag phenomenon.	8 <sup>th</sup> Asia Pacific Conference on Wind Engineering (APCWE VIII)
24	Mandal, S., Bhargava, P. and Ojha, C. S. P	2013	Appraisal of certain linear and non-linear k-epsilon turbulence models	Asia Pacific Conference on Wind Engineering (APCWE VIII)

25	Singh, A. and Mandal, S	2013	A comparative study on interference factors of buildings	Asia Pacific Conference on Wind Engineering (APCWE VIII)
26	Mandal, S	2014	Some Aspect of Numerical Simulation Of Wind Flow Around Buildings	<i>Mc Graw Hill Education (INDIA) Pvt. Ltd., McGraw Hill Education Professional, ETES-2014, Asansol</i>
27	Mandal, S., Charan, I. R., & Gupta, H	2014	Effects of Plan Aspect Ratio on Dynamic Wind Characteristics	<i>Mc Graw Hill Education (INDIA) Pvt. Ltd., Mc Graw Hill Education Professional, ETES-2014, Asansol</i>
28	Mandal, S., Verma, A., Saxena, A.	2014	Effects of Continuous Lintel Beams on a Building Subjected to Lateral loads	<i>Mc Graw Hill Education (INDIA) Pvt. Ltd., McGraw Hill Education Professional, ETES-2014, Asansol</i>
29	Gupta, A. and Mandal, S	2014	Comparative Study of Chord forces in Flat Slabs due to seismic loads in buildings of different plan aspect ratio	National Conference on Innovative Construction and Design of Structures, April, NIT Durgapur, India

C). Papers Presented in Conferences But Not Published

S. No.	Author(s)	Year	Title	Presenting Author/Publisher
1	Mandal, S.	2014	Recent advances in design of wind resistant buildings	Proc. of National Conference on Innovative Construction and Design of Structures, April, NIT Durgapur, India
2	Mandal, S.	2013	Application of turbulence models to Computational Wind Engineering (CWE)	Technical Education Quality Improvement Programme (TEQIP), Faculty Development Programme (FDP), Thapar University, Patiala.

14. Awards and Recognitions : Submitted earlier during selection as Reader in Civil Engineering Dept., IIT (BHU), Varanasi

Awards and Recognitions (added later on 01.07.2015)

1. Awarded the certificate of appreciation for sincere guidance to my M. Tech. student in the field of wind engineering at 7<sup>th</sup> National Conference on Wind Engineering by Indian Society of Wind Engineering, Roorkee in 2014.
2. University Medal from University of Roorkee, Roorkee for securing 1<sup>st</sup> position in the M. E. Structural Engineering (Civil Engineering) in 1996.
3. 1<sup>st</sup> prize in essay competition on “National Integration” organized by the Vivekananda Kendra, Kolkata in 1991.
4. Award from Ministry of Environment and Forestry, Govt. of India for 2<sup>nd</sup> position in National level essay competition on “Prevention and control of river pollution: Role of common people” in 1990.
5. 9<sup>th</sup> position (7<sup>th</sup> rank) in West Bengal Board of Secondary Education, Award from Chief Minister (Mr. Jyoti Basu) and Governor (Dr. Nurul Hassan) of Govt. of West Bengal, Steel Authority of India Limited (SAIL) etc in 1987.
6. Interviewee in Doordarshan Kendra, Calcutta for securing 9<sup>th</sup> position (7<sup>th</sup> rank) in West Bengal Board of Secondary Education. (Title: Interview with the first ten students of Madhyamik 1987) in 1987.
7. Distinction in World-wide essay competition on “Peace – an Utopian Concept” organized by United Nations Organization in 1986.

15. Any Other Relevant Information : ----

Recent Projects under progress : In addition to the two projects mentioned under 12 (D), sheet no. (8 of 14).

D) Sponsored Projects

Period	Sponsoring Organization	Title of Project	Amount of Grant	PI, Co-PI or Co-Investigator
2014 – 2015	Sprouting Grant for Faculty, IIT (BHU), Varanasi	Study of Cluster effect on Dynamic Soil-Foundation-Structure Interaction.	Rs. 4,00,000/-	Dr. Rajesh Kumar & Dr. S. Mandal

- (i) Served as a member of IT GYMKHANA apex committee coordinated Kashi Yatra and other cultural events for the session 2004-2005 & 2005-2006.
- (ii) Coordinated building construction activities under the project ‘Power Supply Improvement in BHU Campus’ (with Prof. S. P. Singh, Dept of Electrical Engg.).

- (iii) Member of the “Committee for Civil Works” under University Works Department (UWD) for the sessions 2003-2004 & from 2005 till date.
- (iv) Conducted a workshop on “Indian Classical Music” under the Indian Music Club of IIT(BHU) Gymkhana in 2014.
- (v) Organized a puppet show on the life of Swami Vivekananda under the Gymkhana activities.
- (vi) Served as a member in the project on “Farmers participatory approach for sustenance of wastelands in the Vindhyan Zone of Eastern U.P. through Water Harvesting and Appropriate Land Use Systems” submitted to U.P. Government, by Prof. S. P. Singh, Department of Horticulture, Institute of Agricultural Sciences, BHU.

### **Articles**

1. Mandal, S. (2004). “Sarada Mandir : in the eye of a Civil Engineer”, Published in souvenir of Ramakrishna Mission Vidyapith Alumni Association, Purulia.
2. Mandal, S. (2004). “Essence of Indian Culture: Mathematics, Music and Meditation”, Trillium 2003-04, IIT GYMKHANA, IIT BHU, Varanasi.