

**Name:** Dr. Sanjay Sengupta



**Department:** Civil Engineering

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**Qualifications:** B.E (Civil Engineering), M.Tech (Structural Dynamics), PhD (Civil Engineering)

**Designation:** Associate Professor

**VIDWAN ID:** 185467

**Experience (Teaching / Research / Industry, in years):** 10 / 6 / 10

**Date of Joining at the Present Institution:** 09-Jan-2014

**Examinations Cleared:** GATE

### Qualifications Summary:

Degree	Institute	From - To	Subjects
PhD	National Institute of Technology, Durgapur	March, 2014 - Oct, 2018	Civil Engineering
M.Tech	Indian Institute of Technology (IIT) , Roorkee	July,1999 – Feb,2001	Structural Dynamics
B.E	National Institute of Technology, Silchar	July,1995 – June,1999	Civil Engineering

### Experience Summary:

**Associate Professor**, Dept. of Civil Engineering, **Dr. B.C. Roy Engineering College** (Sept, 2021 to Present)

**Assistant Professor**, Dept. of Civil Engineering, **Dr. B.C. Roy Engineering College** (Jan, 2014 to Aug, 2021)

**Assistant Professor**, Dept. of Civil Engineering, **Birbhum Institute of Engineering and Technology** (Feb, 2011 to Dec 2013)

**Associate Consultant**, **Tata Consultancy Services Ltd.**, (April, 2009-Jan, 2011)

**Assistant Consultant**, **Tata Consultancy Services Ltd.**, (April, 2007-March, 2009)

**Information Technology Analyst**, **Tata Consultancy Services Ltd.**, (April, 2005-March, 2007)

**Assistant System Engineer**, **Tata Consultancy Services Ltd.**, (April, 2002-March, 2005)

**Assistant System Engineer (Trainee)**, **Tata Consultancy Services Ltd.**, (April, 2001-March, 2002)

### Specialization/Research Interest:

Earthquake Engineering, Structural Dynamics, Structural Health Monitoring , Soil Mechanics & Foundation Engineering

### Awards & Recognitions

- **2<sup>nd</sup> rank** in class of **M.Tech** of Structural Dynamics with **9.24 CGPA** (IIT Roorkee)
- **2<sup>nd</sup> rank** in class of **B.E** ,Civil with **Honours** (NIT Silchar, Formerly REC Silchar, Assam University)
- Qualified in **GATE** 1999 (**All India Rank 293**)
- Full time **MHRD scholarship** at IIT, Roorkee (1999-2001)

- Among **top 10 performers** for a **continuous period of 5 years** in the project team of approximate 150 members while working at different roles at **Tata Consultancy Services Ltd.(TCSL)** [2006-2011]
- **Award for Best Implementation Project** (as implementation team lead) for the project executed by **TCS for Goldman Sachs (2006)** and **Hats Off award** for continuous commitment by **MD &CEO , TCS (2006)**
- Appointed by **Tata Consultancy Services Ltd.** for working as the **Project Lead** for the **British Telecom** Management Information Systems Project (located in **Belfast, Northern Ireland**) (2003-2005)

### Courses taught:

#### B.Tech:

**Theory:** Engineering Mechanics, Solid Mechanics, Structural Analysis, Foundation Engineering, Surveying, Soil Mechanics, Structural Dynamics & Earthquake Engineering, Construction Planning & Management, Design of Tall Structure, Building Materials & Construction

**Practical:** Solid Mechanics Lab, Computer Aided Design Lab, Soil Mechanics Lab, Foundation Engineering Lab, Surveying Lab, Structural Engineering Design Practice (Sessional), Quantity Surveying & Specifications (Sessional)

#### Online Mode of Teaching:

Online teaching is conducted through Google Platform and Zoom Platform. Lectures are either delivered online through Google Meet or Zoom. Some cases the lecture notes with the voice recorded lecture are shared with students (to help student access at any time). Student's queries and doubts are addressed either through the online interaction or through individual or group whatsapp interactions.

#### Link to Online Contents

<https://drive.google.com/drive/folders/1bJhbUkhEmuU8FDcVFIwUtYZJlwhLkEBa?usp=sharing>

#### Publications:

##### Journal:

**Sengupta, S.,** Roy, P., Topdar, P., Datta. A.K.(2021) Investigation of layered composite plates under acoustic emission using an appropriate finite element model, Canadian Journal of Civil Engineering. e-First  
DOI: <https://doi.org/10.1139/cjce-2020-0452>

**Sengupta, S.,** Chandra, T., Paul, R. (2021) Compatibility Of Equivalent Static Load Method For A Telecommunication Tower Compared Against Time History Method, BCREC Engineering & Science Transaction, 2(1), pp. 56-71, ISSN: 2582-9068

Weblink: <https://www.bcrecjournal.org/articles.aspx?jid=202101>

Chandra T, **Sengupta, S.,** Dynamic Analysis of Telecommunication Tower for Optimum Modal Combination and Elemental Discretization, International Journal of Engineering and Advanced Technology, 2019, 9,(1), pp. 2229-2237 , ISSN: 2249-8958

DOI: [10.35940/ijeat.A9720.109119](https://doi.org/10.35940/ijeat.A9720.109119)

Link: <https://www.ijeat.org/wp-content/uploads/papers/v9i1/A9720109119.pdf>

UGC List: <https://ugccare.unipune.ac.in/Apps1/User/WebA/CAREList> (Scopus Source List)

Banerji, A.K., **Sengupta, S.**, Das, S., Pavement Subgrade Soil Stabilization using Stone Quarry Dust. Elixir Civil Engg., 2017, 108, pp. 47618-621, ISSN 2229-712X  
Link: [https://www.elixirpublishers.com/articles/1500016531\\_ELIXIR2017055705A.pdf](https://www.elixirpublishers.com/articles/1500016531_ELIXIR2017055705A.pdf)

**Sengupta, S.**, Datta, A.K., Topdar, P. (2015) Structural Damage Localisation by acoustic emission technique: A state of the art review. Latin American Journal of Solids and Structures, 2015, 12, pp.1565-1582  
DOI: <http://dx.doi.org/10.1590/1679-78251722>  
UGC List: <https://ugccare.unipune.ac.in/Apps1/User/WebA/CAREList> (Science Citation Index Expanded.)

**Sengupta, S.**, Datta, A.K., Topdar, P. , Issues in Structural Investigations: Vibration Based Approach Vs. Elastic Wave Propagation Approach. International Journal of Research in Engineering and Technology, 04 , (13), ICISE -2015, pp. 285-289 , eISSN: 2319-1163  
DOI: <https://doi.org/10.15623/ijret.2015.0425041>  
Link: <https://ijret.org/volumes/2015v04/i25/IJRET20150425041.pdf>

**Sengupta, S.**, Study of shear walls in multistoried buildings with different thickness and reinforcement percentage for all seismic zones in India. International Journal of Research in Engineering and Technology, 03, (11), pp. 197-204, eISSN: 2319-1163  
DOI: <https://doi.org/10.15623/ijret.2014.0311033>  
Link: <https://ijret.org/volumes/2014v03/i11/IJRET20140311033.pdf>

#### Conference:

1. Roy, P., Topdar, P., Datta, A.K, **Sengupta S.**, On the implementation of auto search algorithm for localisation of AE source: An experimental study, Challenges of Resilient and Sustainable Infrastructure Development in Emerging Economics (CRSIDE 2020), Kolkata , India, Mar 02-04, 2020, pp. 326, International Conference, Thinker, ISBN: 978-93-5396-500-6
2. Kundu, T., Datta, A.K., Topdar, P., **Sengupta, S.**, An experimental study on optimum placement of AE sensor for localizing damage in rail, Challenges of Resilient and Sustainable Infrastructure Development in Emerging Economics (CRSIDE 2020), Kolkata , India, Mar 02-04, 2020, pp. 316, International Conference, Thinker, ISBN: 978-93-5396-500-6
3. Biswas A.K., Datta A.K., Topdar, P., **Sengupta, S.**, On Effective placement of acoustic emission sensor in steel framed structure for damage detection, National Conference on Emerging Trends on Sustainable Technology and Engineering Applications (NCETSTE), Durgapur, Feb 7-8, 2020, National Conference, IEEE, ISBN:978-1-7281-4362-0, DOI: [10.1109/NCETSTE48365.2020.9119915](https://doi.org/10.1109/NCETSTE48365.2020.9119915)
4. **Sengupta, S.**, Roy, P., Datta, A. K., Topdar, P., AE Source Discrimination in Multi-Layered Composite using FEM, Structural Engineering Convention (SEC-2018), Jadavpur University, Dec 19-21, 2018, pp.155, International Conference, Jadavpur University Press, ISBN:978-93-83660-46-9
5. Das, S., Datta, A. K., Topdar, P., **Sengupta, S.**, A comprehensive study on characterization of concrete pavement, Structural Engineering Convention (SEC-2018), Jadavpur University, Dec 19-21, 2018, pp.55, International Conference, Jadavpur University Press, ISBN:978-93-83660-46-9
6. Roy, P., **Sengupta, S.**, Topdar, P., Datta, A.K., Structural Damage Localisation by Acoustic Emission Using FEA: A Review. Proceedings of 2<sup>nd</sup> International Conference on Advances in Concrete, Structural and Geotechnical Engineering (ACSGE-2018), BITS, Pillani, Feb 26-28, 2018 ,pp. 447-451, International Conference, Bloomsbury India, ISBN: 978-93-87471-69-6
7. **Sengupta, S.**, Datta, A.K., Topdar, P., Wavelet application on structural damage localization for flexural mode in acoustic emission technique. Proceedings of 3<sup>rd</sup> Indian Conference on Applied Mechanics (INCAM-

2017), Motilal Nehru National Institute of Technology, Allahabad, 5-7 July, 2017, pp. 425-426, National Conference, Harileela Publication, ISBN:978-93-80635-28-6

**Book:**

Trishit Chandra and **Sanjay Sengupta**, Optimum methods for Dynamic Analysis of Telecommunication Tower : A comparative Analytical Study, Lap Lambert Academic Publishing, Mauritius, ISBN: 978-620-0-54039-3

**Book Chapter:**

1. **Sengupta S.**, Topdar P., Datta A.K. (2019). A Study on Finite Element Modelling of Acoustic Emission Waveforms in Composite and Sandwich Plates. In: Rao A., Ramanjaneyulu K. (eds) Recent Advances in Structural Engineering, Volume 1. Lecture Notes in Civil Engineering, vol 11. Springer, Singapore, pp. 441-452, ISBN: 978-981-13-0362-3, DOI: [https://doi.org/10.1007/978-981-13-0362-3\\_35](https://doi.org/10.1007/978-981-13-0362-3_35)
2. **Sengupta S.**, Datta A.K., Topdar P. (2019). Damage Assessment in Composites Using Frequency Discrimination of Acoustic Emission Signals. In: Rao A., Ramanjaneyulu K. (eds) Recent Advances in Structural Engineering, Volume 1. Lecture Notes in Civil Engineering, vol 11. Springer, Singapore, pp. 1097-1110, ISBN: 978-981-13-0362-3, DOI: [https://doi.org/10.1007/978-981-13-0362-3\\_87](https://doi.org/10.1007/978-981-13-0362-3_87)

**Supervision of Ph.D/M.Tech/ B.Tech Projects:**

**B.Tech Project Supervised:**

Year	Project Title	Student/s with Roll Number
2016	Study on The Effect of Plan Irregularity on Seismic Responses of R.C Framed Structures Using Different Methods	Debapriyo Ghosh(12001312011), Kalyan Samanta(12001312012), Pinaki Mukherjee(12001312024), Priyaman Panja(12001312027), Ritankar Saha(12001312032), Rohit Chourasia(12001312033), Subhendu Samui (12001312049), Tanmoy Dhara(12001312059)
2017	Parametric Study of Bearing Capacity And Comparison Using Different Code Provisions	Bikram Kumar Barnwal(12001313027) Birendra Kumar(12001313028) Bishal Singh(12001313029) Biswanath Yadav(12001313030) Geetanjali Kumari(12001313038)
2018	Seismic Analysys of Multistorey Residential Building Using Staad Pro And Design Using Matlab Programme	Navneet Kumar(12001314061) Pawan Kumar Modi(12001314068) Ram Babu Yadav(12001314074) Sandeep Kumar Sahu(12001314081) Sanjeet Bharti(12001314082) Sanjeev Kumar Sardar(12001314083) Sk. Abdul Salam(12001314093)
2019	A Comparative Study on Telecommunication Tower Under Different Loading Conditions With Comprehensive Seismic Analysis	Rahul Dey(12001315079) Souvik Gantait(12001315104) Tanmoy Saha(12001315110) Tirthankar Roy(12001315113) Trilok Anand(12001315114) Yawar Jawaid(12001315121) Trishit Chandra(12001315152) Rajdeep Paul(12001315153)

Year	Project Title	Student/s with Roll Number
		Chiranjeev Tiwary(12001316017)
2020	A Comparative Study on Bearing Capacity Improvement of Loose Sandy Soil Using Grouting	Snehasish Bhattacharjee(12001317007) Shilpa Devsharma(12001317008) Sayam Ghosh(12001317009) Sadrul Amin(12001317010) Rahul Pan(12001317011) Priyam Singh Deo(12001317012) Partha Sarathi Guha(12001317013)
2021	A Sustainable Approach Towards Development of A Smart Township In Durgapur	Shivam (12001317042) Shashank Gupta (12001317043) Shairul Hussain (12001317044) Santanu Bala (12001317045) Saif Khan (12001317046) Riyanka Manna (12001317047)

#### Invited Lectures:

Lecture on Information Technology (IT) Industry Orientation at the Seminar on Industry Orientation organized by the Department of Information Technology, Dr. B.C Roy Engineering College on the 11<sup>th</sup> Sep 2019

The Institution of Engineers (India) Technical Webinar on Advanced Geotechnical Engineering organised by The Institution of Engineers (India), Durgapur Local Centre under the aegis of Civil Engineering Division on 19<sup>th</sup> July, 2021

#### Participation in seminar/conference/symposium/workshop/discussion meeting

Name of the Event	Duration	Year	Organized by
3rd Indian Conference on Applied Mechanics (INCAM2017)	3 days (5 <sup>th</sup> July to 7 <sup>th</sup> July)	2017	Applied Mechanics Department, MNNIT,Allahbad
10 <sup>th</sup> Structural Engineering Convention (SEC-2016)	3 days (21 <sup>st</sup> Dec to 23 <sup>rd</sup> Dec)	2016	CSIR-SERC, Chennai
International Conference on Innovations in Structural Engineering (IC-ISE-2015)	3 days (14 <sup>th</sup> Dec to 16 <sup>th</sup> Dec)	2015	University College of Engineering, Osmania University, Hyderabad
Seminar on Advances in Nano satellite technology	1 day (4 <sup>th</sup> Nov)	2015	Dr. B.C Roy Engineering College, Durgapur
Training on Internal Audit ISO:9001:2008 Quality Management System	1 day (5 <sup>th</sup> March)	2014	Quality Services and Solutions (QSS), Kolkata
Workshop on Energy Conservation Techniques in Industry	1 day (26 <sup>th</sup> April)	2013	Petroleum Conservation Research Association (PCRA) & Birbhum Institute of Engineering and Technology, Suri

## Participation in faculty development programmes

Name of the faculty development programme	Online / Face-to Face	From Date - To Date	Duration	Organized by
Bridge Diagnostic Performance Evaluation and Rehabilitation	Face to Face	16-Jun-2014 to 20-Jun-2014	5 days	CSIR- Central Road Research Institute, New Delhi
Quality Initiatives in Technical and Higher Education (In compliance with NBA and NAAC accreditation)	Face to Face	16-Sep-2013 to 18-Sep-2013	3 days	Engineering Staff College of India, Hyderabad
Management Capacity Enhancement Programme for Administrators	Face to Face	10-Jun-2013 to 14-Jun-2013	5 days	Indian Institute of Management, Lucknow (Noida Campus)
Training Programme on Procurement and PMSS, TEQIP-II	Face to Face	17-Jun-2013 to 18-Jun-2013	2 days	National Institute of Technology, Silchar
Laboratory and In-Situ testing of Soil	Face to Face	23-May-2011 to 03-Jun-2011	14 days	National Institute of Technical Teachers' Training(NITTTR), Kolkata

## Organization of events (Dr. B. C. Roy Engineering College)

Organising member (Publicity Team) of the National Conference on Emerging Trends on Sustainable Technology and Engineering Applications (NCETSTEA), 2020.

## Participation in administrative committees (selected)

Name of the Post	Name of the Committee	Year
Member	Institute Academic Council	2019
IQAC Coordinator	NAAC Core Committee	2019
Convenor	PMIL Cell	2018
Member	Departmental NBA Committee	2017
Member	AICTE-IDEA Lab Core committee	2021

## Project Ideas Submitted to Govt. Agencies/ On-going Projects / Research Ideas under preparation & execution

### Project Ideas Submitted to Govt. Agencies

1. Real Time Crack Detection in concrete pavements using Acoustic Emission Technique – Submitted to **CSIR** in 2019 (Reviewed , not approved as the Department does not have Master's Programme)
2. Bridge Pier Health Monitoring Using Acoustic Emission Technique (Project File No CRG/2019/000796) - Submitted to **SERB** in 2019 (The proposal was examined carefully on the basis of scientific / technical merit, novelty, work plan, research methodology and also considering the availability of funds etc. We regret to inform you that after thorough consideration, your proposal is not recommended for funding)
3. Investigation of Public Health Impacts and Traffic Management due to traffic congestion around schools in Urban Areas: A Case Study in Durgapur –Submitted to **Dept. of Higher Education, Govt. of West-Bengal** (No communication received till date)

## **Research Ideas under preparation & execution**

### **Structural Health monitoring:**

Real time defect/damage/crack detection in:

Rail way track, steel frame structures, composite plates and concrete slabs using experimental investigations through Acoustic Emission Technique.

Application of artificial intelligence on optimum placement of Acoustic Emission Sensors.

### **Earthquake Engineering**

Seismic Analysis of Telecommunication towers and RCC framed structures.

### **Membership of professional bodies: IEEE, IETE, IEL, CSI, MGMI etc.**

NA