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Employment History:

- Professor of Civil Engineering, Indian Institute of Technology, Kharagpur, 2014 to present.
- Associate Professor of Civil Engineering, Indian Institute of Technology, Kharagpur, 2008 to 2014.
- Assistant Professor of Civil Engineering, Indian Institute of Technology, Kharagpur, 1999 to 2008.
- Senior Geotechnical Engineer/ Lead Engineer with specialization in the area of geotechnical earthquake engineering and numerical modeling, Hydro Power Unit, Harza Engineering Company, Chicago, IL, 1989 to 1999.

Degrees:

- Doctor of Philosophy in Civil Engineering, Illinois Institute of Technology, Chicago, 1989
- Master of Science in Civil Engineering, Illinois Institute of Technology, Chicago, 1985
- Bachelor of Engineering in Civil Engineering, Calcutta University, India, 1982

Teaching Experience:

Duties include teaching undergraduate and graduate courses, guiding M.Tech. and Ph.D. students. Undergraduate and graduate courses instructed are: Mechanics (ME10001), Engg. Drwg. & Computer Graphics (CE13001), Surveying (CE23008), Soil Mechanics & Foundation Engg.(S) (CE33003), Rock Mechanics & Tunneling (CE31410), Foundation Design & Detailing (69015), Computational Geomechanics (165017), Applied Soil Mechanics (60137), Soil-Structure Interaction (60150), Soil Mechanics Laboratory (69015), Foundation Engineering (60048), Mechanics of Soils (60035).

- Instructor, Illinois Institute of Technology, Chicago, IL. (1988-1989).

Duties included teaching following undergraduate courses:

Introduction to Soil Mechanics (CE 323), Statics for Architects (CE 185), Undergraduate & Graduate Soil Mechanics Laboratory (CE 323 & CE 583)

- Teaching Assistant, Illinois Institute of Technology, Chicago, IL. (1983-1988)

Research Experience:

List of Externally Sponsored Research Projects

- Principal Investigator (India) of a project entitled “HYDRODRIL,” sponsored by European Union, Ref. No. ID FP7-PEOPLE-2011-IRES-295225. The project is a collaborative research between BOKU, Austria, CUG, China, Univ. of Nottingham (UNID), UK, UNAM, Mexico and IIT Kharagpur (India). The project is coordinated by Prof Wei Wu of BOKU, Austria (Eu 37,400 /Eu 264,600) (2012-2016).
- Principal Investigator. “Experimental & Numerical Studies on Deep Excavation under Static & Seismic Conditions” by Department of Science and Technology, New Delhi, Ref No. SR/S3/MERC-0029/2011. The distribution of earth pressure and corresponding response of the retaining wall system under different combinations of cohesionless soil with plastic fines (clay) & non plastic fines (silt) under different construction stages is being studied with the help of laboratory model tests and numerical modeling. The

settlement profile of the ground surface and conditions of structures near the edge of excavation is also studied (INR73,00,000) (2012-2016).

- Co-Principal Investigator. “Strengthening the Research and Postgraduate Teaching in the Areas of Structural, Geotechnical, Environmental and Transportation Engineering (FET)” by Department of Science and Technology, New Delhi, Ref No. SR/FST/ETII-037/2008 dtd 17.03.2009 (INR2,45,00,000) (2009-2014).
- Principal Investigator. “Modeling and Monitoring of Landslide Hazard in Sikkim Himalayas (HSH)” by Department of Science and Technology, New Delhi, Ref No. ES/11/092(50)/2003 dt. 19.03.2004. It is a part of DST’s Natural Disaster Management Program. It includes field instrumentation and long term monitoring of Lanta Khola landslide on North-Sikkim Highway in Sikkim (2004-2008) (INR 23,00,000).
- Principal Investigator of a project entitled “Theoretical & Experimental Investigation of Strain Localization in Cohesive Soils under Plane Strain Condition (LCS),” sponsored by Department of Science & Technology, Govt. of India (New Delhi), Ref. No. SR/S3/MCE/03/2001-SERC-Engg. Dt. 12-11-2002. (Rs. 13 Lakhs). The project includes development of an advanced bi-axial test facility to study strain localization in soils. Digital image processing is utilized to monitor shear band development with the progress of the tests (2002-2005).
- Principal Investigator of a project entitled “Preparation of Status Report on Landslide Problem in Sikkim (RLP),” sponsored by Department of Science & Technology, Govt. of India (New Delhi). Ref. No. ES/11/092(50)/2003 dt 22-01-2003. (Rs. 30 Thousands). The project includes visiting major landslides in Sikkim and reporting different measures undertaken to mitigate landslide and the present status of these slides (2003).

Research Supervision

Doctoral

- Theoretical and Experimental Investigations of Strain Localization in Geomaterials under Plane Strain Condition (completed in 2005)
- Performance of Soil Reinforcements under Seismic Loading Condition (completed in 2010).
- Site Specific Study at Lanta Khola Slide in Sikkim (completed in 2010).
- Behavior of Fly Ash under Dynamic Loading Condition (completed on 2017).
- Performance of Strut Supported Vertical Excavation (completed on 2014).
- Performance of Strut Supported Vertical Excavation under Dynamic Loading Condition (on going).
- Rainfall Triggered Slope Instability (on going).
- Behavior of a Gabion wall under Dynamic Loading Condition (on going).

Master’s

- Earth Pressures in Clayey Backfills (completed in 2001)
- Constitutive Modeling of Kaolinite using Thermodynamic Theory (completed in 2002)
- Dynamic Response of Jointed Rockmass (completed in 2003)
- Pore Pressure Development in Kaolinite during Undrained Biaxial Test (completed in 2005)
- Cyclic Behaviour of Gangetic Soil (completed in 2006)
- Measurement of Pore water Pressure & Anisotropy in Kaolinite during Strain Localization in Plane Strain Test (completed in 2006)
- Prediction of Deformations in High Dams during an Earthquake (completed on 2007)
- Study of Induced Anisotropy in Kaolinite (completed on 2008)
- Effect of Microfabrics in Laboratory Test Results of Kaolinite (2009)
- Performance of Different Soil Reinforcements under Dynamic Loading Condition (2009)
- Performance Study of a New Expandable Soil Anchor (2011)
- Evaluation of LD Slag as a Construction Material (2011)
- Reliability Study of Lanta Khola Landslide (2012)

- Experimental Investigation into Natural Base Isolation System for Earthquake Protection (2012)
- Modeling of Slope Reinforced with Piles and Jute (2013)
- Rain Triggered Slope Failure Assessment of Railway Embankment at Malda Division of Eastern Railway (2013).
- Behavior of a Piled Raft subjected to a Lateral Load (2014).
- Effect of Rainfall on Jute Reinforced Embankment (2014).
- Behavior of a Piled Raft under Earthquake Loading Condition (2015).
- Study of Dynamic Behaviors of an MSE Wall (ongoing).
- Study of Seismic Performance of E-W Metro Tunnel (ongoing).

Short Courses Instructed/Organized

- “Seismic Design of RC Buildings” AICTE Sponsored QIP Short Term Course (Course coordinator: D. Maiti), Dept of Civil Engg, IIT Kharagpur, Co-coordinator, 12-16 Sept 2011.
- “Green Infrastructure” AICTE Sponsored QIP Short Term Course (Course coordinator: V.R. Desai), Dept of Civil Engg, IIT Kharagpur, Course Instructor, 26 Dec 2010 - 2 Jan 2011.
- “Slope Stability of Soils, Rocks and Dumps” QIP Short term Course (Course coordinator: D. Chakravarty), Dept of Mining, IIT Kharagpur, Course Instructor, Nov 2010.
- “Earthquake Analysis of Dams,” AICTE Sponsored Short Term Course, Bhubaneswar, Principal Coordinator, 17-21 August 2009.
- Training Program on Earthquake Engineering for Serving & Practicing Engineers. National Program for Capacity Building of Engineers in Earthquake Risk Management (NPCBEERM), National Institute of Technology, Agartala, Govt of Tripura, 14th Dec – 20th Dec, 2009. Delivered Invited Lectures.
- Training of Faculty Members of State Resource Institutes, National Prog. On Capacity Building of Engineers in Earthquake Risk Management (NPCBEERM), Min. of Home Affairs Endeavor, IIT-Kharagpur, June 08- July 05, (2009). Participated as a course instructor.
- “Geomechanics in the Emerging Social and Technological Age,” 12th International Conference Organized by Intl Association for Computer Methods & Advances in Geomechanics (IACMAG), Session Co-ordinator and Member of the Technical Committee, IIT-Bombay, Goa, 1-6 Oct. 2008.
- “Capacity Building & Training Workshop on Landslide Hazard Mitigation in NE India,” Course instructor, Dept. of Earth Sciences, Manipur University, Imphal, Sponsored by NRDMS, DST, New Delhi, 3 – 4 Sept., 2008.
- “Solid and Hazardous Waste Management,” Course Coordinator. QIP Short Term Course, AICTE, August 13-17, (2007).
- "Field quality control guidelines for earthen embankment and ash embankment construction; Field instrumentation, performance monitoring and evaluation," NIT-Rourkella, 8th - 12th February,(2007)
- “Evaluation of Seismic Risk in Engineering Practices,” Training of Faculty Members of State Resource Institutes, Min. of Home Affairs Endeavor, IIT-Kharagpur, Mar 20-Apr. 15, (2006).
- “Evaluation of Seismic Risk in Engineering Practices,” National Prog. On Capacity Building of Engineers in Earthquake Risk Management (NPCBEERM), Disaster Management Department, Govt. of Jharkhand, Oct. 25-29, (2005).
- “Evaluation of Seismic Risk in Engineering Practices,” Training of Faculty Members of State Resource Institutes, Min. of Home Affairs Endeavor, IIT-Kharagpur, Mar 7-Apr. 15, (2005).
- “Observed Seismic Performances of Deep Foundations,” Earthquake-Resistant Design of Masonry, RCC and Framed Structures, UNDP Training Programme, IIT-Kharagpur, 1-3, July, (2004).
- Random Vibration and Applications to Earthquake Engineering, AICTE/ISTE Short Term Course, Dec. 21-31, (1999).

Professional & Administrative Activities

New Developments

- Developed Biaxial Test Facility for Soils (under DST Project).
- Developed Cyclic Test Facility (1m by 1m uniaxial shake table) with 3-ton Payload (DST Project).
- Developed a New Expandable Soil Anchor.
- Developed a search routine for critical failure surface in slope stability analysis.

Expert Visits

- Visited NIT Patna as an external examiner for PhD thesis (2016)
- Visited NIT Rourkella as an external examiner for MS thesis (2016)
- Visited BARC, Mumbai as a guide for the M.Tech thesis on Behavior of Piled Raft under Dynamic Loading Condition. Sponsored by BARC, Mumbai (2014).
- Visited Kurseong & Islampur as a geotechnical expert to review on going DST projects on bio-diversity of Darjeeling hills and participatory action research through geomatics based research (DST/TDD/2K12/156) (2013).
- Visited BARC, Mumbai as a guide for the M.Tech thesis on Natural Base Isolation System for Earthquake Protection of Low to Medium Rise Buildings. Sponsored by BARC, Mumbai (2012).
- Visited University of Manipur, Imphal as a geotechnical expert on landslide. Sponsored by DST, New Delhi (21-23 Nov. 2011).
- Visited as a landslide expert to Sonapur Landslide in Shillong, Meghalaya. Sponsored by DST, New Delhi (2008).

Travel Grant Received

- Received partial travel support from NPEEE for participation in 13th World Conference on Earthquake Engineering at Vancouver, Canada on August 1-6, 2004.

Invited Lectures

- Presented invited lectures on “Factors affecting the roadways through the landslide prone areas in the eastern Himalayas” at Workshop on "Recent Developments in the Analysis, Monitoring and Forecast of Landslides and Debris Flow," BOKU, Vienna, 9-13 September 2013.
- Presented invited lectures on “Investigation into Sliding Mechanism and Proposed Mitigation Measures at Lanta Khola Landslide in North Sikkim, India,” at National Workshop on Landslide Hazard and Risk Assessment, Geological Survey of India Technical Institute (GSITI), Hyderabad, 15-16 Nov. 2011.
- Presented invited lectures on “Guidelines for Earth Filling, Foundation Design and Construction in Different Soil Conditions” at Bharat Petroleum, Kolkata, 24th April 2010.
- Presented invited lectures on Seismic Hazard Analysis at NIT, Agartala, 14th Dec – 20th Dec, 2009.
- Presented invited lectures on “Monitoring and Analyses of Landslides in NE India,” at University of Manipur, Imphal, 3-4 Sept., 2008.
- Presented invited lectures on "field quality control guidelines for earthen embankment and ash embankment construction; field instrumentation, performance monitoring and evaluation," at NIT-Rourkella, Orissa, 8th - 12th February 2007.

Referee of Journal/Conference

- Member of the Editorial Board of Intl J. of Applied Engg. & Technology (JET)
- Member of the Editorial Board (Editor) of Intl J. of Geotechnical Engineering (JoGE)
- J. of Earth System Sciences
- Natural Hazard
- Current Science
- Geotechnical Testing Journal, ASTM.
- Indian Road Congress Journals
- Indian Geotechnical Journal.

Professional Registration:

- Professional Engineer, Illinois, USA

Professional Society Membership:

- American Society of Civil Engineers (Assoc Member),
- Sigma Xi - The Scientific Research Society (Member),
- Chi Epsilon - Civil Engineering Honor Society (Member),
- Member, Geotechnical Engineering (H-3) Committee, Indian Road Congress

Consultancy Projects/ Professional Experience (2000 to date):

- **Review of the Design & Performances of 70m High MSE Wall and slopes at Pakyong Airport, Sikkim (RDST)**
Client: Airport Authority of India (GM, Pakyong Airport)
Principal Consultant. (INR 75,60,000) (2016-2017).
- **Impact Assessment on Heritage Structures due to Proposed Construction Route of E-W Metro at Kolkata (HSPW)**
Client: Kolkata Metro Rail Corporation Ltd., Kolkata
Co-consultant. Determination of settlement and motions at the heritage buildings due to the construction of E-W tunnels and station. (INR 75,57,000) (2016-2017).
- **Cyclic Triaxial Tests for Kolkata Metro Rail Corporation Ltd (SOTK)**
Client: Transtonnelstroy-Afcons JV, Mumbai
Principal Consultant. Performed cyclic triaxial tests on the soils from E-W Metro near BBD Bag, Kolkata (INR 114500) (2016).
- **Soil Stabilization with Geocrete (SOSG)**
Client: KABA Infratech Pvt. Ltd., New Delhi
Co-consultant. Laboratory tests on soils with different percentages of Geocrete. (INR 150000) (2014-2015).
- **Strengthening of Weak Formation and Rehabilitation Work in Malda Division of Eastern Railway (WFAW)**
Client: Eastern Railway, Malda Division
Principal Consultant. Performed drilling, field & laboratory testing and redesigning of the railway embankments. (INR 8,65,000) (2012-2014).
- **Liquefaction Study of the Site for Steel Complex at Gokulpur (SSCG)**
Client: Rashmi Metaliks, Ltd, Kolkata
Principal Consultant. Performed seismic hazard and ground liquefaction study of the project site for the new steel plant. (INR 86,034) (2012).
- **Stability & Strength Test for Q-0, Dunguri Lime Stone Quarry (SFDL)**
Client: ACC Ltd, Bargarh Cement Works, Bargarh, Orissa
Co-PI, Performed Strength tests, Stability analysis of the slope. (PI: Prof. K. Pathak, Mining Dept) (INR 165,000) (2011-2013).
- **Inspection & Testing of 100-m Transmission Tower at AIR, Kohima (TMTA)**
Client: All India Radio & Doordarshan, Kolkata
Principal Consultant. Performed field inspection and field testing of the newly erected foundation of the tower. Checked bearing capacity, settlement and stability of the foundation. (INR 3,00,000) (2011-2012).
- **Evaluation & modification of tank foundations at JSL (EMTF)**
Client: BOC India Ltd, Kolkata
Principal Consultant. Design & analysis of retaining wall and tank foundations (INR 3,80,000) (2011-2012).
- **Assessment of undrained extensional behavior of Padma Bridge Soils -1 (BPBS)**
Client: DCL-FCL, Dhaka, Bangladesh
Co-consultant. Testing of soils from Padma Bridge (3.47 Lakhs) (2010).
- **Assessment of undrained extensional behavior of Padma Bridge Soils -2 (PDBR)**
Client: M/s M. Ahmed & Associates, Ltd., Dhaka, Bangladesh
Co-consultant. Testing of soils from Padma Bridge (1.49 Lakhs) (2010).
- **Characterization of Sinter Metallics and Muck Dump Material (SJMD)**
Client: Tata Steel Ltd, Jamshedpur
Principal Consultant. Site visit. Determination of characterization of sinter and muck dump by laboratory tests. (3.86 Lakhs) (2009).
- **Assessment of Liquefaction Potential at OSCOM Site, Matikhal (OSCO).**
Client: Indian Rare Earths Ltd, Orissa
Co-consultant (7 Lakhs) (2009-2010).
- **Assessment of Tunnel Distress at HMPCL (AOTD)**
Client: Hoogly Met Coke & Power Co., Ltd, Tata Steel, Kolkata

Co-consultant. Performed site inspections. Reviewed data. Reviewed analyses of the failure (9.55 Lakhs) (2009).

- **Construction of Arterial Road & Backup Area Behind Berth No. 2 of Haldia Dock Complex.**
Client: Kolkata Port Trust, Haldia Dock Complex.
Co-consultant. (2009).
- **Soil Test for Construction of BLLRO Office Building at Nayanjuli, Kharagpur.**
Client: Govt. of West Bengal.
Principal Consultant. Performed Laboratory Tests to Determine Suitability of Foundation Soil & its Bearing Capacity (2009).
- **Review of Bund Stability of the existing Red Mud and Ash Ponds at Vedanta Aluminium Plant, Rayagoda, Orissa.**
Client: Pollution Control Board, Bhubaneswar, Orissa.
Principal Consultant. Visited the plant. Reviewed field data and measurements. Produced status report with recommendations (2008).
- **Testing and Evaluation of 100 m Transmission Tower at AIR Kohima.**
Client: Webel Mediatronics Ltd.
Principal consultant. Visited the site and supervised field testing. Prepared status report and recommendations. Reviewed post construction drawings. (Rs. 4.07 lakhs) (2007-2008).
- **Study of Water Supply Distribution/Storage & Source Availability for Darjeeling Municipality (SWSD)**
Client: District Magistrate, Darjeeling
Consultant. Performed survey of pipelines. Reviewed existing water supply and storage schemes. Proposed projected demands. Visited proposed storage site at Tiger Hills (Rs. 4.82 Lakhs) (2007).
- **Construction of Arterial Road and Backup Area behind Berth No 2 of Haldia Dock Complex (ARBA)**
Client: Kolkata Port Trust, Haldia Dock Complex
Co-consultant. (Rs 4.49 Lakhs) (2007-2008).
- **Soil Test of Microwave Compound at Mohanpur, Midnapore (DOPP)**
Client: BSNL, Tamluk
Principal Consultant. Performed drilling and soil tests (In-situ density, moisture content, unconsolidated undrained triaxial tests for the soil (2006).
- **Soil investigation and geotechnical design for foundation of the proposed bridge across the old Kansabati near Daspur (GDFB)**
Client: Panchayat Samity, Daspur-I, Midnapore
As co-consultant, supervised drilling, sampling and laboratory testing of samples. Reviewed design of the bridge foundation (2006).
- **Soil Tests for the M/s ICICI Bank (PCBR)**
Client: M/S ICICI Winfra, Kolkata
Performed drilling, sampling and soil tests (2006).
- **Soil Investigation for the Proposed Kasturba Gandhi Balika Vidyapeeth (NTBV)**
Client: Headmistress, Nayagram Thana Balika Vidyapeeth, Midnapore
Performed drilling, sampling, soil tests, bearing capacity determination and foundation design for the proposed school building (2005).
- **Investigation of possible causes for observed surface undulations in 4/6 laning of NH-6 (IPCS)**
Client: National Highway Authority of India
Reviewed existing test data (2005).
- **Investigation of RE Wall Distress at Km 18 of NH6 and Design of Remedial measures (REWD)**
Client: National Highways Authority of India
Reviewed remedial measures as co-consultant (2006).
- **Checking of Design of Turamdih Tailings Dam**
Client: Uranium Corporation of India Ltd, Jharkhand.
Performed stability check of the Turamdih Tailings Dam Stages I & II for the normal and seismic loading conditions (2004-2005).

- **Checking of Bund Stability of Existing Red Mud Ponds**

Client: Indian Aluminium Company, Ltd, Ranchi.

Performed stability check of the existing Tailings Dam for the normal, flood and seismic loading conditions (2004-2005).

- **Design of Pagladiya Embankment Dam in India**

Client: CWC & Brahmaputra Board, Mr. D.V. Theraja (Chief Engineer, E&NE, CWC)

Reviewed existing design of Pagladiya Dam in Assam and performed seismic safety evaluation of the dam based on field & laboratory test data. The dam section was revised and a cutoff wall was added to mitigate foundation liquefaction (2002).

- **Design of Railway Embankments in India**

Client: South Eastern Railway, Jajpur Road Division, Mr. S.C. Gupta (Const. Div.)

Performed design and analyses of 45m high railway embankments between Keonjhar and Jajpur Road, Consultancy Project no. IIT/SRIC/CE/2000-2001/71, (2000-2001).

Refereed Journal Publications

1. "Shake Table Tests and Numerical Modeling of Liquefaction of Sand," R. Banerjee, S. Konai, A. Sengupta and K. Deb, *Geotechnical and Geological Engg. J.*, DOI: 10.1007/s10706-017-0178-z, (Feb 2017).
2. "A Comparative Assessment of the Seismic Response of an Earthen Dam using Analytical Simulation and Empirical Methods," S. Bandyopadhyay, R. Banerjee, A. Sengupta, Y.M. Parulekar and G.R. Reddy, (accepted for publication in *Current Science*) (0.967) (2017).
3. "Dynamic Properties of Fly Ash," R. Chattaraj and A. Sengupta, *J. Materials in Civil Engineering, ASCE*, DOI: 10.1061/(ASCE)MT.1943-5533.0001712 (1.43) (Jan 2017).
4. "Estimation of Design Parameters for Braced Excavation in Clays," S. S. Chowdhury, K. Deb, A. Sengupta, *Geotechnical and Geological Engg. J.*, DOI: 10.1007/s10706-016-0123-6 (Nov 2016).
5. "Liquefaction Potential and Dtrain Dependent Dynamic Properties of Kasai River Sand," R. Chattaraj, A. Sengupta, *Soil Dynamics and Earthquake Engineering*, Vol. 90, pp. 467-475 (2.04) (2016).
6. "Effect of Fines on the Behavior of Braced Excavation in Sand: Experimental and Numerical Study," *Intl. J. of Geomechanics, ASCE*, Vol. 16, No. 1, pp. 04015018-1 - 13 (2016) (S.S. Chowdhury, K. Deb and A. Sengupta) (1.2).
7. "Performance of Sand and Shredded Tire Mixture as a Natural Base Isolator for Earthquake Protection," *J. of Earthquake Engineering and Engineering Vibration*, Vol. 14, No.4, pp. 683-693 (2015) (S. Bandyopadhyay, A. Sengupta, G. R. Reddy) (0.475).
8. "Behavior of Underground Retaining Structures under Seismic Condition," *Earthquakes and Structures*, Vol. 8, No. 5, 1147-1170 (2015) (S.S. Chowdhury, K. Deb and A. Sengupta) (1.38).
9. "Study of a Railway Embankment Reinforced with Jute Tassels," *Sadhana*, Vol. 40, Part 1, pp. 277-293 (2015) (A. Sengupta and S. Dalal) (0.587).
10. "Rain Triggered Slope Failure of the Railway Embankment at Malda, India," *Acta Geotechnica*, Vol. 9, pp. 789-798 (2014) (Monal Raj and A. Sengupta) (2.493).
11. "Natural Base Isolation System for Earthquake Protection," *Current Science*, Vol. 107, Issue 6, pp. 1037-1043 (2014) (S. Bandyopadhyay, A. Sengupta, G. R. Reddy) (0.93).
12. "Study of a Model Slope Reinforced with Jute," *Geomechanics and Geoengineering*, pp. 289- 305, (2014) (A. Sengupta and S. Kumar).
13. "Estimation of Design Parameters for Braced Excavation: Numerical Study," *Intl. J. of Geomechanics (ASCE)*, Vol. 13, Issue 3, pp. 234-247, (2013) (S.S. Chowdhury, K. Deb and A. Sengupta) (1.2).
14. "Numerical Study of a Failure of a Wall," *Intl. J. of Geotechnical & Geological Engg.*, Vol. 30, pp. 1025-1034, (2012) (A. Sengupta) (cited by 2).
15. "Behavior of Nailed Steep slopes in Laboratory shake Table Tests," accepted for publications in *Intl. J. of Civil Engg. & Arch.* (2012) (A. Sengupta & Debabrata Giri).

16. "Dynamic Analysis of Nailed Soil Slopes," *Ground Improvement J.*, Vol. 164, Issue GI4, pp. 225-234, (Nov. 2011) (A. Sengupta & Debabrata Giri) (cited by 1).
17. "Site-Specific Microzonation Study in Kolkata Metropolitan City, India by 2-D Modeling of *SH* and *P-SV* Waves," *Intl J. of Pure & Applied Geophysics*, Vol. 168, pp. 479-493 (F. Vaccari, M. Y. Walling, W. K. Mohanty, A Sengupta and G. F. Panza) (2011)(1.614) (cited by 9).
18. "Estimation of Permanent Deformations of Tehri Dam Due to 7.0 and 8.5 Magnitude Earthquakes," *Sadhana*, Vol. 35, Part 3, pp. 373-392 (2010) (A. Sengupta) (0.587).
19. "Strain Localization in Geomaterials in Nature, Laboratory Tests and Numerical Analyses," *Current Science*, Vol. 98, No. 9, pp. 1195-1201, (2010) (A. Sengupta) (0.93) (cited by 2).
20. "Landslide Investigation and Mitigation in the Eastern Himalayan Region," *Indian Road Congress (IRC) J.*, Vol 71-2, Paper No. 560, pp. 133-142, July-Sept. (2010) (A. Sengupta, S. Gupta & K. Anbarasu).
21. "Dynamic Behavior of Small Scale Model of Nailed Steep Slopes," *Intl J. of Geomechanics & Geoengineering*, Vol. 5, Issue 2, pp. 99-102, 2010 (D. Giri & A. Sengupta).
22. "Integrated Very Low Frequency EM, Electrical Resistivity, and Geological Studies on Lanta Khola Landslides, North Sikkim, India," *Intl J. of Landslides*, Vol 7, pp 43-53, (2010) (S.P. Sharma, K Ambarasu, S. Gupta, A. Sengupta) (2.814) (cited by 4).
23. "Rainfall Thresholds for the Initiation of Landslide at Lanta Khola in North Sikkim, India," *Intl J. of Natural Hazards*, Vol 52, pp 31-42, (2010) (A. Sengupta, S. Gupta and K. Anbarasu) (1.719) (cited by 24).
24. "Dynamic Behaviour of Small-Scale Model Slopes in Shaking Table Tests," *Intl. J. Geotechnical Engineering*, Vol 4, No 1, pp 1-11, Jan, (2010) (D. Giri and A. Sengupta) (cited by 3).
25. "Dynamic Behavior of Small Scale Nailed Soil Slopes," *Intl J. of Geotechnical and Geological Engineering*, Vol 27, No 6, pp 687-698 (2009) (D Giri & A. Sengupta) (cited by 5).
26. "Mechanism of Activation of the Lanta Khola Landslide in Sikkim Himalayas," *Intl J. of Landslides*, DOI 10.1007/s 10346-009-0193-0, Vol. 7, pp. 135-147, (2010) (K Anbarasu, A. Sengupta, S. Gupta) (2.814) (cited by 11).
27. "Anisotropy in Kaolinite subjected to Large Strains during Biaxial Tests," *Intl J. of Clays and Clay Minerals*, Vol 57, No 2, pp 251-263, (2009) (A. Sengupta) (1.431) (cited by 1).
28. "Site-specific Studies on the Lanta Khola Landslide in Sikkim Himalayas," *Intl J. Geotechnical Engineering*, J Ross Publishing Inc., Vol 3, pp 361-376, (2009) (K. Anbarasu, S. Gupta & A. Sengupta) (cited by 2).
29. "Effect of Orientation of Microfabrics on Engineering Behaviors of Clay," *Indian Geotechnical Journal*, Vol 39, No 2, pp 233-318, (2009) (A. Sengupta & L.R. Mantri).
30. "A Kinematic Limit Approach for the Stability Analysis of Nailed Soil Slopes," *Asian J. Civil Engineering*, Vol. 10, No. 2, 163-176 (2009) (D. Giri and A. Sengupta) (cited by 1).
31. "Locating the Critical Failure Surface in a Slope Stability Analysis by Genetic Algorithm," *Intl J. Applied Soft Computing*, Elsevier Science Publications, U.K., Vol. 9, January, 387-392 (2009) (A. Sengupta & A. Upadhyay) (2.679) (cited by 29).
32. "Predictions of Earthquake Induced Permanent Deformations of Dams by Simplified and Advanced Methods of Analyses," *Intl J. of Dam Engineering*, Vol XVIII, Issue 4, 289-309 (2008) (A. Sengupta).
33. "Anisotropy of Magnetic Susceptibility Analyses of Deformed Kaolinite: Implications for Evaluating Landslides," *Intl J. of Earth Sciences*, Vol. 98, pp. 1721-1725 (2009) (M. Mamtani and A. Sengupta) (2.084) (cited by 10).
34. "Estimation of Permanent Deformations of Tehri Dam Due to 7.0 and 8.5 Magnitude Earthquakes," *Advances in Earth Structures*, ASCE Geotechnical Special Publications No. 151, pp. 203-210, (2006) (A. Sengupta).
35. "An Evolutionary Algorithm for Locating the Critical Failure Surface in a Soil Slope," *The Electronic Journal of Geotechnical Engineering (EJGE)*, Vol. 10, 0592, pp. 1-15, Bundle F, (2005).
36. "Investigation into Shear Band Formation in Clay," *Indian Geotechnical Journal*, Vol. 34, No. 2, pp. 141-163, April (2004) (S. Sengupta & A. Sengupta, co-authors).
37. "Performance of a Thermodynamic Constitutive Model for Granular Materials," *Indian Geotechnical Journal*, Vol. 33, No. 4, pp. 319-346, October (2003).
38. "Lateral Earth Pressures in Clayey Backfills," *Indian Geotechnical Journal*, Vol. 32, No. 2, pp. 65-85, April (2002) (A. Sengupta & G. Venkateshwarlu, co-authors).
39. "Review of a Thermodynamic Theory for Granular Materials," *Computers and Geotechnics*, Vol. 11, pp. 1-36 (1991) (A. Sengupta & Suren Saxena, co-authors) (1.224).

40. "Reservoir Induced Seismicity: A new Model," Intl. J. Num. Method Geom., Vol. 12, pp. 263-281 (1988) (S.K. Saxena, A.M. Ger & A. Sengupta, co-authors) (1.055) (cited by 5).

Refereed Conference Publications

1. "Effect of the Depth of Excavation on Soil Pressure Acting on Strutted Retaining Walls under Seismic Condition", 6th International Geotechnical Symposium on Disaster Mitigation in Special Geoenvironmental Conditions, IIT Chennai, India, 21st -23rd Jan., (Subha Sankar Chowdhury, Kousik Deb and Aniruddha Sengupta) (2015).
2. "Finite Element Analysis of Combined Pile Raft System," Intl. Conf. on Theoretical, Applied, Computational and Experimental Mechanics, IIT Kharagpur, India, December 29-31 (S. Bandyopadhyay, Y. Patil, A. Sengupta, Y. Parulekar, G. R. Reddy & R.K. Singh) (2014).
3. "Performance of Sand & Shredded Rubber Tire Mixture as a Natural Seismic Base Isolator," 7th Intl Conf. on Case Histories in Geotechnical Engineering and Symposium in Honor of Clyde Baker, Chicago, Illinois, April 29- May 4, (S. Bandyopadhyay, A. Sengupta & G. R. Reddy) (2013).
4. "Stability of earth retention system in dry cohesionless soil under static and seismic condition", in International Conference on Computational Methods in Structural Dynamics and Earthquake Engineering (COMPDYN) from 12th - 14th June, 2013 at Kos island, Greece (Chowdhury SS, Deb K, Sengupta A) (2013).
5. "Natural Base Isolation System for Earthquake Protection," 2nd Intl Conf. on Geotechnique, Construction Materials and Environment, Kuala Lumpur, Malaysia, Nov. 14-16, (S. Bandyopadhyay, A. Sengupta, G.R. Reddy) (2012).
6. "Performance of sand and rubber composite as a natural base isolation system for earthquake protection," ACUN6 –Composites and Nanocomposites in Civil, Offshore and Mining Infrastructure, Melbourne 14 – 16 November, (S. Bandyopadhyay, A. Sengupta, G.R. Reddy) (2012).
7. "Effect of Location of Surcharge on Braced Excavation under Different Excavation Widths," Proceedings of Indian Geotechnical Conference, (Paper No. D 404), New Delhi, December 13-15, (S. S. Chowdhury, K. Deb and A. Sengupta) (2012).
8. "Factors Affecting the Roadways through Landslide Prone Areas in the Eastern Himalayas," accepted for presentation and publication in GEORISK 2011, ASCE, Atlanta, Georgia, USA, (A. Sengupta, S. Gupta, K. Anbarasu) (2011).
9. "Modeling Dynamic Behavior of Nailed Soil Slope," accepted for presentation and publication in Intl Conf of Intl Assoc for Comp. Meth. & Adv. In Geom. (IACMAG), Australia (A. Sengupta & D. Giri) (2011).
10. "Performance of Nailed Slopes under Cyclic Loading Condition," Indian Geotechnical Conference 2010 GEOTrendz, Mumbai, December 16-18 (D. Giri & A. Sengupta) (2010).
11. "Behavior of Nailed Steep Slopes in Laboratory Shake Table Tests," 5th Intl Conf on Recent Advances in Geotech. Earthquake Engg & Soil Dynamics and Symp. In Honor of Prof. I.M. Idriss, San Diego, CA, May 24-29, (2010).
12. "Performance of Small Scale Nailed Embankment in Shaking Table Tests," Proc. of Natl Sem. On Emerging Trends in Ground Improvement, Kolkata, 22-23, 2009 (D. Giri & A. Sengupta).
13. "Geological and Geotechnical Control on Lanta Khola Landslide in Sikkim Himalayas, GEOITALIA, (A. Sengupta, S. Gupta, K. Anbarasu) (2009).
14. "Towards Understanding of Lanta Khola Landslide in Sikkim Himalayas," Paper no. 186, 12th Intl Conf of Intl Assoc for Comp. Meth. & Adv. In Geom. (IACMAG), Goa, India, pp. 180, 1 – 6, Oct., 2008 (A. Sengupta, K. Anbarasu & S. Gupta).
15. "Effect of Orientation of Microfabrics on Engineering Behaviors of Clay," National Seminar on Geotechnique in Present Development Scenario, Indian Geotechnical Society, Kolkata Geotechnical Study Circle, pp. 104 – 108, Sept 5-6, 2008
16. "Geological & Geotechnical Control on Lanta Khola Landslide in Sikkim Himalayas," Accepted for Oral presentation at DEBRIS FLOW 2008, Wessex Inst of Tech., Southampton, U.K. (2008) (A. Sengupta, K. Anbarasu & S. Gupta).
17. "Very Low Frequency Electro Magnetic Observation in the High Altitude Region of North Sikkim, India," Intl Union of Geodesy & Geophysics, XXIV, July 2007, Perugia, Italy, 2007 (S.P. Sharma, K. Anbarasu, S. Gupta and A. Sengupta).

18. "A Comparison of the Seismic Response Predictions of an Embankment Dam by Simplified and Advanced Methods of Analysis," Paper No. 20, 13th Symp. on Earthquake Engineering, Dept. of Earthquake Engg. (13SEE-06), IIT Roorkee, pp. 491 – 500, 18-20 Dec. (2006).
19. "Site-Specific Study of Lanta Khola Slide in Sikkim Himalaya," Intl. Disaster Reduction Conference IDRC Davos 2006, Switzerland, (2006).
20. "Landsliding in the Sikkim Himalaya – Results of Preliminary Survey and Site-Specific Investigation of the Lanta Khola Slide," Geoscientific Aspects of Landscape Evolution of North Bengal- Sikkim: Environmental Problems and Development Prospects, West Bengal Academy of Science & Technology, Kolkata, pp. 8-9, Dec. 8-9, (2005), (A. Sengupta, S. Gupta & K. Anbarasu, Co-authors).
21. "Anchoring of Little Quinnesec Falls Hydroelectric Dam" Paper No. 2.48, Fifth International Conference on Case histories in Geotechnical Engineering, New York, NY April 13-17, (2004).
22. "Seismic Hazard Evaluation for 500-kV EHV Transmission Line in Pakistan," Paper No. 2462, 13th World Conference on Earthquake Engineering, Vancouver, B.C., Canada, August 1-6, (2004).
23. "Laboratory Investigation of Strain Localization in Clay under Plane Strain and its Theoretical Analysis", Int. Conf. on Geotech. Engg., Sharjah, UAE, 447-458, (2004), (S. Sengupta & A. Sengupta, Co-authors).
24. "Landslide Hazard in Sikkim Himalayas," National Seminar on Disaster Management with Specific Reference to Landslides and Avalanches, organized by Border Roads Organization, Central Road Research Institute, Snow and Avalanche Study Establishment, Institute of Engineers (INDIA), pp. 299- 310, New Delhi, Oct 29, (2003) (A. Sengupta & S. Gupta, co-authors).
25. "Strain Localization in Clayey Soils and its Numerical Simulation" IGC-2003, IIT-Roorkee, Roorkee, (2003) (S. Sengupta & A. Sengupta, co-authors).
26. "Prediction of Probable Failure Mechanisms in Embankments," National Conference on Advances in Civil Engineering: Perspectives of Developing Countries, (ACEDEC-2003), vol. 1, pp. 314-323, February (2003) (S. Sengupta & A. Sengupta, co-authors).
27. "Failures in Cohesive Geomaterials due to Shear Band Formation," International Conference on Construction Management & Materials (CONMAT2003), pp. 574-582, January (2003) (S. Sengupta & A. Sengupta, co-authors).
28. "Seismic Hazard Evaluation," AICTE Short Term Course on Random Vibration and Applications to Earthquake Engineering, IIT-Kharagpur, Dec. 1999.
29. "Earthquake-Induced Permanent Deformations in Earth Dams: From a Challenge to Practice," ICOLD 97, Madrid, Spain (A. Sengupta & P.P. Martin, co-authors).
30. "Prediction of the Seismic Response and Deformations of a Hydraulic Fill Dam," CHILECOLD 96, Santiago, Chile (A. Sengupta & P.P. Martin, co-authors).
31. "Numerical Analysis of Bath County Upper Reservoir Dam," 3rd ICOLD Benchmark Workshop on Numerical Analysis of Dams (Theme B1), Paris (France), Sept. 29-30, 1994 (P.P. Martin & A. Sengupta, co-authors).
32. "Underseepage Analyses at Huffman Dam," ASDSO 10th Annual Conf., Kansas City, Missouri, Sept. 26-29 (1993) (W. J. Marold, P. L. Plummer & A. Sengupta, co-authors).
33. "Drawdown Stability of a Compacted Shale Rockfill," Water Power '93, Proc. of Intl. Conf. on Hydro Power, Nashville, TN, pp 1358-1367, Aug 10-13 (1993) (C. A. Jaramillo, D. E. Kleiner, P. P. Martin, A. Sengupta and A. V. Sundaram, co-authors).
34. "Prediction of Static and Dynamic Deformation Response of Blue Ridge Dam, Georgia, USA," Intl. Workshop on Dam Safety Evaluation, Switzerland, April, 1993. (P.P. Martin, J.A. Niznik & A. Sengupta, co-authors) (cited by 3).
35. "Performance of a Numerical Algorithm based on a Thermodynamic Constitutive Theory in Solving Elasto-Plastic Boundary Value Problems," Numerical Models in Geomechanics, NUMOG-III, Elsevier Applied Science, Swansea, 187-194 (1989) (A. Sengupta and S.K. Saxena co-authors).
36. "An Alternative Approach to Capture Localization of shear band," Intl. Conf. Adv. Num. Method Engg. Theory and Appl., NUMETA87, Swansea, England, C6/1, vol. 2 (1987) (A. Sengupta & S.K. Saxena, co-author).
37. "Verification of a Constitutive Model for Granular Materials," Intl. Workshop on Const. Eqn. for Granular Non-Cohesive Soils, Case Western Reserve Univ., Cleveland, OH (1987) (S.K. Saxena & R.K. Reddy & A. Sengupta, co-authors).
38. "A Model of Reservoir Induced Seismicity," Proc. of Eighth Symp. on Earthquake Engg., Roorkee, India (1986) (A. Sengupta & S.K. Saxena, co-author) (cited by 1).

Book/Monograph/Report

1. "Geotechnical Engineering Handbook, Ch. 6: Earth Retaining Structures" Edited by B.M. Das, J. Ross Publishing, Inc., Florida USA (2010).
2. "Reservoir Induced Seismicity - A New Model," Report No. IIT-CE-85-03, Geotechnical Engineering Series (1985) (A. Sengupta & S.K. Saxena, co-authors) (cited by 2).