

AMLAN KUMAR SENGUPTA

STR 304, Department of Civil Engineering
Indian Institute of Technology Madras
Chennai 600036
Phone: 91 044 2257 4277
E-mail: amlan@iitm.ac.in

BRIEF

Amlan K. Sengupta teaches courses related to Structural Concrete. The research interests include analytical and experimental studies on behaviour of reinforced concrete and prestressed concrete members. The current areas of research are i) Quantification of the Poisson's effect in the stress-strain relationship for bars in panels under biaxial tension-compression, ii) Investigation of retrofitting of beams and columns with concrete jackets, iii) Modelling of walls in precast concrete buildings, iv) Effect of corrosion of reinforcing steel and prestressing strands on the response of bridge decks.

Regarding projects, he is involved primarily in those that lead to generation of educational material. He is a member of Indian Concrete Institute, Indian Roads Congress and American Concrete Institute.

EDUCATION

PhD in 1998 from University of Missouri at Rolla (presently Missouri University of Science and Technology), USA.

MS in 1994 from Rice University, Houston, USA.

BTech in 1990 from Indian Institute of Technology Kharagpur.

PROFESSIONAL EXPERIENCE

2014 to present, **Professor**, Indian Institute of Technology Madras.

2009 to 2014, **Associate Professor**, Indian Institute of Technology Madras.

Aug 2012 to Dec 2012, **Visiting Associate Professor**, Iowa State University, USA

2003 to 2009, **Assistant Professor**, Indian Institute of Technology Madras.

Oct 2002 to Dec 2002, **Visiting Assistant Professor**, Indian Institute of Technology Madras.

1998 to 2002, **Engineer**, Ove Arup & Partners California, Los Angeles, USA.

1994 to 1997, **Graduate Research Assistant**, University of Missouri-Rolla, Rolla, USA.

Oct 1993 to Dec 1993, **Engineering Assistant**, Fugro McClelland Incorporated, Houston, USA.

1990 to 1993, **Research Fellow**, Rice University, Houston, USA.

RESEARCH AREAS

- 1) Behaviour of reinforced concrete (RC) and prestressed concrete members
- 2) Experimental investigation of cast-in-place and precast reinforced concrete walls
- 3) Analysis, design and seismic retrofit of reinforced concrete buildings
- 4) Earthquake engineering as applicable to building design
- 5) Assessment of concrete bridge decks for deterioration

COURSES TAUGHT

Theory Courses

Under-graduate

Basic Reinforced Concrete Design
Design of Concrete Structural Systems

Post-graduate

Advanced Theory and Design of Concrete Structures
Prestressed Concrete Design
Structural Design of Foundations
Bridge Engineering
Advanced Topics in Structural Concrete

Miscellaneous Courses

Under-graduate

Structural Engineering Laboratory
Case Studies in Structural Engineering
Industrial Lecture

Post-graduate

Experimental Techniques
Structural Engineering Design Studio
Industrial Seminar

SPONSORED PROJECTS

- Structural Behaviour of Corroding Prestressed Concrete Systems and Extension of Service Life using Cathodic Protection.

Type: Ongoing

Sponsor: Department of Science and Technology

Period: September 2018 to August 2021

Number of Investigators: 3

- Experimental and Analytical Studies on Two-way Hollow Core Slabs.

Type: Completed

Sponsor: Department of Science and Technology

Period: February 2013 to February 2016

Number of Investigators: 2.

- Virtual Laboratory for Structural Engineering under the National Mission for Virtual Laboratories.

Type: Completed

Sponsor: Ministry of Human Resource Development

Period: June 2010 to July 2012.

Number of Investigators: 2.

- Handbook on Seismic Retrofit of Buildings

Type: Completed

Sponsor: Central Public Works Department and under the aegis of Indian Buildings Congress

Period: March 2005 to December 2007

Number of Investigators: 2.

- Web-based and video-based courses on “Prestressed Concrete Structures” under the National Programme on Technology Enhanced Learning (NPTEL).

Type: Completed

Sponsor: Ministry of Human Resource Development

Period: November 2003 to November 2006

Number of Investigators: 2.

- Seismic Evaluation and Retrofit of Existing Multi-storeyed Buildings

Type: Completed

Sponsor: Department of Science and Technology

Period: November 2003 to October 2006

Number of Investigators: 6.

STUDENTS GUIDED

Ph D

Gnanasekaran Kaliyaperumal, 2009

Rajeevan Bavukkatt, 2009

Milinda A. Mahajan, 2010 (Joint guidance)

V. T. Badari Narayanan, 2010 (Joint guidance)

M. Nithyadharan, 2012 (Guide-in-charge)

Ms. Komathi Murugan, 2018

Ms. Resmi Giriraju (ongoing)

Venkata Ratna Sai Kosuru (ongoing)

Aparup Biswal (Joint guidance) (ongoing)

Vishnu T. Unni (ongoing)

MS

Asokan Adukadukam, 2006

Rama Mohana Rao Perla, 2007

Deepak Krishnan M. A., 2010

Ms. Payal K. Firodiya, 2013 (Joint guidance)

Aparup Biswal, 2016 (Joint guidance)

Siva Poornan Vasudevan, 2019 (Joint guidance)

M Tech

Boby Jacob, 2004
C. Srinivasulu Reddy, 2004
Ms. P. Gajalakshmi, 2005
S. Mahadevan, 2005
Himanshu Goyal, 2006
Praveen Thomas, 2007
H. Anantharaman, 2007
Rudra Srinivasa Reddy Chukka, 2008
Sundeep Dhar, 2008
Sudipta Chattopadhyaya, 2009
Ajit Shetty, 2009
Ms. Naga Nandhini E., 2010
Soumendra Banerjee, 2010
Akki Reddy Unnam, 2010
Arun Shankar V., 2011
Dharanidaran S., 2011
Ezhilan M., 2011 (Joint guidance)
Ms. Indu Geevar, 2012
Deepu Krishnan, 2012
S. Jaijith, 2013
Ms. Bindurani P., 2013 (Joint guidance)
Surya Teja Bulusu, 2014
Shubhayan Sarkar, 2014
M. Harshavardhan Reddy, 2015
Sanjay Kumar K., 2015
Vaibhav Sharma, 2016
Mohd. Absar Siddiqui, 2016
Y. Shashank, 2017
Ms. KV. Snehalatha Reddy, 2018
Praveen Koshy, 2020
V. Arun Reddy, 2020

P. Balu Phanikar (ongoing)
Vishal Kumar (ongoing)

B Tech

Darshan R. Kamat, 2005
Chirag Singhal, 2006
N. Srinivasa Siddhartha, 2007
Ms. S. Mamatha, 2008
Vikas Kejriwal, 2008 (Joint guidance)
Anshul Gupta, 2009
Bharat Thej Dogga, 2009
Karthek Konanki, 2010
Nikil Kumar Reddy, 2010
Issac Jojy, 2011

Sunny B Munda, 2012
Ms. Sabah Farheen, 2013
P. Harish, 2016
Kiran Ande, 2017

RECENT PUBLICATIONS

Refereed International Journals

- Murugan, K. and Sengupta, A. K., “Seismic Performance of Strengthened Reinforced Concrete Columns”, *Structures*, Institution of Structural Engineers, published by Elsevier, Vol. 27, June 2020, pp. 487 – 505. Digital Object Identifier (DOI) 10.1016/j.istruc.2020.05.059.
- Mohandoss, P., Pillai, R. G. and Sengupta, A. K., “Effect of Compressive Strength of Concrete on Transmission Length of Pre-tensioned Concrete Systems”, *Structures*, Institution of Structural Engineers, published by Elsevier, Vol. 23, February 2020, pp. 304 – 313. Digital Object Identifier (DOI) 10.1016/j.struc.2019.09.016.
- Mohandoss, P., Pillai, R. G. and Sengupta, A. K., “Transmission Length of Pre-tensioned Concrete Systems – Comparison of Codes and Test data”, *Magazine of Concrete Research*, Institution of Civil Engineers, UK, Vol. 71, Issue 17, September 2019, pp. 881 – 893. Digital Object Identifier (DOI) 10.1680/jmacr.17.00553.
- Biswal, A., Prasad, A. M. and Sengupta A. K., “Study of Shear Behaviour of Grouted Vertical Joints between Precast Concrete Wall Panels under Direct Shear Loading”, *Structural Concrete*, Wiley, Vol. 20, 2019, pp. 564 – 582. Digital Object Identifier (DOI) 10.1002/suco.201800064.
- Aranha, C.A., Menon, A. and Sengupta, A. K., “Determination of the Causative Mechanism of Structural Distress in the Presidential Palace of India”, *Engineering Failure Analysis*, Elsevier, Vol. 95, January 2019, pp. 312 – 331. Digital Object Identifier (DOI) 10.1016/j.engfailanal.2018.09.023.
- Firodiya, P. K., Sengupta, A. K. and Pillai, R. G., “Evaluation of Corrosion Rates of Reinforcing Bars for Probabilistic Assessment of Existing Road Bridge Girders”, *Journal of Performance of Constructed Facilities*, American Society of Civil Engineers, Vol. 29, Issue 3, May–June 2015, pp. 04014067-1– 9. Digital Object Identifier (DOI) 10.1061/(ASCE)CF.1943-5509.0000579.
- Kaliyaperumal, G. and Sengupta, A. K., “Seismic Behaviour of Concrete Jacketed Columns in Buildings”, *Structures and Buildings*, Institution of Civil Engineers, UK, Vol. 167, Issue SB9, September 2014, pp. 534 – 543. Digital Object Identifier (DOI) 10.1680/stbu.12.00063.

Refereed National Journals

- Biswal, A., Reddy, K. V. S., Sengupta, A. K. and Prasad, A. M., “Modelling of Wall Panels and Vertical Joints between them for Pushover Analysis of a Precast Wall type Building”, *Journal of Structural Engineering*, CSIR Structural Engineering Research Centre, Chennai, Vol. 47, No. 4, October–November 2020, pp. 295 – 307.
- Murugan, K. and Sengupta, A. K., “Performance of High-Strength Concrete as Jacket Material in Strengthening Applications”, *The Indian Concrete Journal*, The Associated Cement Companies Limited, Special Publication, May 2020.

- Murugan, K. and Sengupta, A. K., “An Investigation on Shear Strength of Reinforced Concrete Columns strengthened by Concrete Jacketing”, *Journal of Structural Engineering*, CSIR Structural Engineering Research Centre, Chennai, Vol. 45, No. 4, October–November 2018, pp. 312 – 333.
- Ande, K. and Sengupta, A. K., “Effect of Large Balconies on the Seismic Design Forces in a Typical Multistoreyed Reinforced Concrete Building”, *ICI Journal*, Indian Concrete Institute, Vol. 18, No. 4, January–March 2018, pp. 29 – 37.
- Murugan, K. and Sengupta, A. K., “Investigation of the Behaviour of Shear-critical Reinforced Concrete Columns”, *The Indian Concrete Journal*, The Associated Cement Companies Limited, Vol. 92, No. 2, February 2018, pp. 10 – 24.
- Sengupta, A. K. and Sarkar, S., “Evaluation of Seismic Vulnerability of Multi-storeyed Buildings having Columns of Different Heights in a Storey using Pushover Analysis”, *Journal of Structural Engineering*, CSIR Structural Engineering Research Centre, Chennai, Vol. 43, No. 4, October–November 2016, pp. 351 – 361.
- Surya Teja, B. and Sengupta, A. K., “Modelling of Framed Shear Walls for Non-Linear Analysis of Reinforced Concrete Buildings”, *The Indian Concrete Journal*, The Associated Cement Companies Limited, Vol. 90, No. 9, September 2016, pp. 32 – 40.
- Mahajan, M. A., Rao, G. A. and Sengupta, A. K., “Assessment of Effective Joint Width for Exterior Eccentric Reinforced Concrete Beam–column Joints”, *Journal of Structural Engineering*, Structural Engineering Research Centre, Chennai, Vol. 42, No. 2, June–July 2015, pp. 87 – 105.
- Biswal, A., Prasad, A. M. and Sengupta, A. K., “Investigation of Shear Behaviour of Vertical Joints between Precast Concrete Wall Panels”, *The Indian Concrete Journal*, The Associated Cement Companies Limited, Vol. 89, No. 1, January 2015, pp. 41 – 47.
- Konanki, K., Reddy, N. K., Dogga, B. T. and Sengupta, A. K., “Effect of Height of Columns in a Multistoreyed Building on their Seismic Forces”, *ICI Journal*, Indian Concrete Institute, Vol. 15, No. 3, October–December 2014, pp. 7 – 13.
- Geevar, I. and Sengupta, A. K., “Modelling of Framed Shear Walls for Pushover Analysis of Reinforced Concrete Buildings”, *The Indian Concrete Journal*, The Associated Cement Companies Limited, Vol. 88, No. 5, May 2014, pp. 58 – 68.
- Sengupta, A. K. and Arun Shankar V., “Analysis of Chord Stresses and Forces in Curved Floors in Reinforced Concrete Buildings”, *ICI Journal*, Indian Concrete Institute, Vol. 14, No. 4, January–March 2014, pp. 21 – 28.
- Farheen, S., Munda, B. S. and Sengupta, A. K., “Seismic Forces in Members Supporting Floating Columns in a Typical Reinforced Concrete Multi-Storeyed Building”, *The Indian Concrete Journal*, The Associated Cement Companies Limited, Vol. 88, No. 3, March, 2014, pp. 39 – 48.
- Adukadukam, A. and Sengupta, A. K., “Equivalent Strut Method for the Modelling of Masonry Infill Walls in the Nonlinear Static Analysis of Buildings”, *Journal of The Institution of Engineers (India) – Series A*, The Institution of Engineers (India), Published by Springer. Vol. 94, No. 2, May–July 2013, pp. 99 – 108. Digital Object Identifier (DOI) 10.1007/s40030-013-0042-y.
- Sengupta, A. K. and Naga Nandhini E., “Investigation of the Stresses due to Mid-Jacking Operation on a

Precast Segmental Bridge Deck”, *Highway Research Journal*, Highway Research Board, Indian Roads Congress, Vol. 6, No. 1, January–June 2013, pp. 71 – 77.

- Rajeevan, B., Sengupta, A. K. and Belarbi, A., “A Modified Approach to Incorporate the Poisson’s Effect in the Softened Membrane Model”, *Journal of Structural Engineering*, Structural Engineering Research Centre, Chennai, Vol. 39, No. 6, February–March 2013, pp. 632 – 644.
- Sengupta, A. K. and Jojy, I., “Effect of Heavy Roof-Top Water Tanks on The Seismic Forces In a Typical Multistoreyed Building”, *ICI Journal*, Indian Concrete Institute, Vol. 13, No. 3, October–December 2012, pp. 29 – 34.
- Narayanan, V. T. B., Sengupta, A. K. and Satish Kumar, S. R., “Seismic Retrofit of Beams in Buildings for Flexure using Concrete Jacket”, *Journal of Earthquake Technology*, Indian Society of Earthquake Technology, Vol. 49, No. 1-2, March–June 2012, pp. 1 – 22.
- Dharanidaran, S. and Sengupta, A. K., “Modelling of Tall Shear Walls for Non-linear Analysis of RC Buildings under Cyclic Lateral Loading”, *The Indian Concrete Journal*, The Associated Cement Companies Limited, Vol. 86, No. 6, June 2012, pp. 32 – 40.
- Kaliyaperumal, G. and Sengupta, A. K., “Modelling of the Behaviour of Reinforced Concrete Columns Retrofitted for Flexure using Concrete Jackets”, *Journal of Structural Engineering*, Structural Engineering Research Centre, Chennai, Vol. 39, No. 2, June–July 2012, pp. 161 – 170.
- Banerjee, S. and Sengupta, A. K., “A Methodology to Assess the Degradation in the Structural Response of the Deck of a Reinforced Concrete Road Bridge due to Corrosion of Reinforcing Steel”, *Journal of The Institution of Engineers (India) – Series A*, The Institution of Engineers (India), Published by Springer, Vol. 93, No. 1, February–April 2012, pp. 87 – 93.
Digital Object Identifier (DOI) 10.1007/s40030-012-0002-y.
- Banerjee, S. and Sengupta, A. K., “A Computational Analysis of the Time-Variant Structural Response of the Deck of a Reinforced Concrete Road Bridge Due to Corrosion of Reinforcing Steel”, *Journal of Structural Engineering*, Structural Engineering Research Centre, Chennai, Vol. 39, No. 1, April–May 2012, pp. 20 – 28.
- Sengupta, A. K. and Shetty, A. D., “Analysis of Chord Forces in Floors with Large Openings or Re-entrant Corners in Reinforced Concrete Buildings”, *ICI Journal*, Indian Concrete Institute, Vol. 12, No. 2, July–September 2011, pp. 7 – 15.
- Krishnan, M. A. D. and Sengupta, A. K., “Investigation on Behaviour of Simply Supported Unbonded Post-Tensioned Beams”, *Journal of Structural Engineering*, Structural Engineering Research Centre, Chennai, Vol. 38, No. 3, August–September 2011, pp. 248 – 260.
- Chattopadhyaya, S. and Sengupta, A. K., “Modelling of Tall Shear Walls for Pushover Analysis of Reinforced Concrete Buildings”, *The Indian Concrete Journal*, The Associated Cement Companies Limited, Vol. 85, No. 8, August 2011, pp. 7 – 14.

Proceedings of International Conferences

- Murugan, K. and Sengupta, A. K., “A Study on Shear Behaviour of Short Jacketed Columns with Different Interfaces”, *Proceedings*, Volume 3, 3rd R. N. Raikar Memorial International Conference and Gettu–Kodur International Symposium, organised by India Chapter of American Concrete Institute, Mumbai,

December 14 to 15, 2018, pp. 113 – 119.

- Aranha, C.A., Menon, A. and Sengupta, A. K., “Analysis of the Dome of India's Presidential Residence”, *Proceedings*, Paper Number 146, International Conference on Structural Analysis of Historical Constructions, organised by Pontifical Catholic University of Peru, Cusco, Peru, September 11 to 13, 2018. Published in “Structural Analysis of Historical Constructions”, Edited by Aguilar R., Torrealva D., Moreira S., Pando M.A. and Ramos L.F., RILEM Book Series, Vol. 18, 2019, Springer, pp. 957 – 965.
- Joseline, D., Haridasan, H., Rathnarajan, S., Rani, D., Raja, T., Pillai, R. G., Sengupta, A. K. and Menon, A., “Restoration of Reinforced Lime Concrete Sunshades of a Century Old Heritage Building in New Delhi, India”, *Proceedings*, Paper Number 284, International Conference on Structural Analysis of Historical Constructions, organised by Pontifical Catholic University of Peru, Cusco, Peru, September 11 to 13, 2018. Published in “Structural Analysis of Historical Constructions”, Edited by Aguilar R., Torrealva D., Moreira S., Pando M.A. and Ramos L.F., RILEM Book Series, Vol. 18, 2019, Springer, pp. 778 – 787.
- Mohandoss, P., Pillai, R. G. and Sengupta, A. K., “Effect of Compressive Strength of Concrete on the Transmission Length of Pre-tensioned Concrete Systems”, ACI 123 Concrete Research Poster Session, ACI Spring 2018 Convention, organised by American Concrete Institute, Salt Lake City, USA, March 25 to 29, 2018.
- Mohandoss, P., Pillai, R. G., Gettu, R. and Sengupta, A. K., “Factors affecting the Bond Strength of Pre-Tensioned Concrete (PTC) Systems”, Poster presented at ACI Spring 2018 Convention, organised by American Concrete Institute, Salt Lake City, USA, March 25 to 29, 2018.
- Giriraju, R., Sengupta, A. K. and Pillai, R. G., “A Study on Deterioration of Flexural Behaviour of Corroded Pre-Tensioned Beams”, *Proceedings* (in USB drive), International Conference on Advances in Construction Materials and Systems, in conjunction with 71st RILEM Annual Week, organised by Indian Institute of Technology Madras in association with RILEM, The international Union of Testing and Research Laboratories for Materials and Structures, Chennai, September 3 to 8, 2017.
- Kosuru, R., Biswal, A., Prasad, A. M. and Sengupta, A. K., “Studies on the Behaviour of Concrete Shear Walls”, Poster presented at International Conference on Advances in Construction Materials and Systems, in conjunction with 71st RILEM Annual Week, organised by Indian Institute of Technology Madras in association with RILEM, The international Union of Testing and Research Laboratories for Materials and Structures, Chennai, September 3 to 8, 2017.
- Biswal, A., Prasad, A. M. and Sengupta, A. K., “An Experimental Investigation and Modelling of Shear Behaviour of Vertical Joints between Precast Panels”, *Proceedings* (in USB drive), Paper Number 3599, 16th World Conference on Earthquake Engineering, Chilean Association of Seismology and Earthquake Engineering, and International Association on Earthquake Engineering, Santiago, Chile, January 9 to 13, 2017.
- Biswal, A., Prasad, A. M. and Sengupta, A. K., “Experimental Investigation and Prediction of Shear Behaviour of Vertical Joints between Precast Concrete Wall Panels”, *Proceedings*, 4th Asian Conference on Ecstasy in Concrete, Indian Concrete Institute, Kolkata, October 8 – 10, 2015, Vol. 1, pp. 91 – 102.
- Mohandoss, P., Pillai, R. G. and Sengupta, A. K., “Comparison of Prediction Models for Transmission Length, Development Length and Shear Capacity of Pre-tensioned Concrete Systems”, *Proceedings*, 4th Asian Conference on Ecstasy in Concrete, Indian Concrete Institute, Kolkata, October 8 – 10, 2015, Vol. 2, pp. 183 – 193.

- Murugan, K. and Sengupta A. K., “Investigation of Shear Strength and Interface of Columns Strengthened by Concrete Jacketing”, 5th Annual International Conference on Civil Engineering, Structural Engineering and Mechanics, The Athens Institute for Education and Research, Athens, Greece, May 25 to 28, 2015, Abstract published, Editor: Papanikos, G. T.
- Firodiya, P., Pillai, R. G., Sengupta A. K. and Menon, D., “Corrosion Rates of Plain Mild Steel and Cold-Twisted Deformed Steel reinforcement”, Paper No. 334, *Proceedings*, UK–India Education and Research Initiative (UKIERI) Concrete Congress, National Institute of Technology Jalandhar, Punjab, March 5 to 8, 2013.
- Badari Narayanan, V. T., Sengupta, A. K. and Satish Kumar, S. R., “Seismic Retrofit of Beams in Buildings for Flexure using Concrete Jacketing”, *Proceedings* (in CD-ROM), Paper Number 20, 15th World Conference on Earthquake Engineering, Portugese Society of Earthquake Engineering and International Association on Earthquake Engineering, Lisbon, Portugal, September 24 to 28, 2012.

Proceedings of National Conferences / Workshops

- Vasudevan, S. P., Sengupta, A. K. and Menon, D., “Numerical Simulation of the Behaviour of Flat Slabs in a Building subjected to Lateral Loads”, *Proceedings* (in USB drive) and *Extended Abstracts* (p. 135), Paper Number 184, 16th Symposium on Earthquake Engineering, Indian Institute of Technology Roorkee, Roorkee, December 20 to 22, 2018.
- Murugan, K. and Sengupta, A. K., “A Generalised Truss Analogy for the Analysis of Shear Behaviour of Short Columns”, *Proceedings* (in USB drive) and *Extended Abstracts* (p. 234), Paper Number 143, 16th Symposium on Earthquake Engineering, Indian Institute of Technology Roorkee, Roorkee, December 20 to 22, 2018.
- Kosuru, R. S. and Sengupta, A. K., “Evaluation of Poisson’s Effect in Reinforced Concrete Panels under In-plane Loading with Inclined Reinforcement Grids”, *Proceedings* (in CD ROM) and *Book of Abstracts* (p. 58), Paper Number 453, 11th Structural Engineering Convention, Jadavpur University, Kolkata, December 19 to 21, 2018.
- Giriraju, R., Sengupta, A. K. and Pillai, R. G., “An Assessment of the Deterioration of Flexural Capacity of a Pre-Tensioned Concrete Girder due to Strand Corrosion”, *Recent Advances in Structural Engineering*, Vol. 2, Select Proceedings of SEC 16, by Springer Nature Singapore Pte. Ltd., 2018, pp. 515 – 525. Edited by A. Rama Mohan Rao and K. Ramanjaneyulu. Digital Object Identifier https://doi.org/10.1007/978-981-13-0365-4_44.
- Giriraju, R., Sengupta, A. K. and Pillai, R. G., “An Assessment of the Deterioration of Flexural Capacity of a Pre-Tensioned Concrete Girder due to Strand Corrosion”, *Proceedings* (in CD ROM) and *Book of Abstracts* (p. 92), 10th Structural Engineering Convention (SEC 16), CSIR Structural Engineering Research Centre – Chennai, Indian Institute of Technology Madras and Anna University, December 21 to 23, 2016.
- Biswal, A., Prasad, A. M. and Sengupta, A. K., “Investigation of Shear Behaviour of Vertical Joints between Precast Concrete Wall Panels”, *Proceedings* (in USB drive), 9th Structural Engineering Convention, Indian Institute of Technology Delhi, December 22 to 24, 2014.
- Murugan, K. and Sengupta, A. K., “Evaluation of Shear Strength of RC Columns Strengthened by Concrete Jacketing”, *Proceedings* (in USB drive), 9th Structural Engineering Convention, Indian Institute of

Technology Delhi, December 22 to 24, 2014.

- Bindurani, P., Sengupta, A. K. and Prasad, A. M., “Effect of Jointed Beam–Column Connections on the Seismic Behaviour of Precast Concrete Buildings”, *Proceedings* (in CD ROM), 15th Symposium on Earthquake Engineering, Indian Institute of Technology Roorkee, Roorkee, December 11 to 13, 2014, pp. 816 – 826.
- Murugan, K. and Sengupta, A. K., “Strengthening of Columns for Shear in Reinforced Concrete Buildings”, *Proceedings* (in CD ROM), International Conference on Structural Engineering and Mechanics, National Institute of Technology Rourkela, December 20 to 22, 2013.
- Bindurani, P., Prasad, A. M. and Sengupta, A. K., “Analysis of Precast Multi-storeyed Building – A Case Study”, *Proceedings* (in CD ROM), International Conference on Energy and Environment, Rajiv Gandhi Institute of Technology, Kottayam, December 12 to 14, 2013.
- Firodiya, P., Menon, D., Sengupta, A. K. and Pillai, R. G., “A Probabilistic Assessment of the Deterioration of Flexural Capacity of a Reinforced Concrete Bridge Deck due to Corrosion of Steel Bars”, *Proceedings* (in CD ROM), 8th Structural Engineering Convention, S. V. National Institute of Technology, Surat, December 19 to 21, 2012, pp. 407 – 413.
- Sengupta, A. K., “Retrofitting of Structures – Research Prospects”, *Proceedings*, National Conference on Advances in Materials and Structures, Pondicherry Engineering College, Puducherry, February 3 to 4, 2011, pp. 29 – 33.

Poster Presentations

- Murugan, K., Sengupta, A. K. and Gettu, R., “Application of Special Concrete to Strengthen Reinforced Concrete Columns”, 5th Symposium on Concrete Research in India, organised by Indian Institute of Technology Madras and Indian Concrete Institute (Chennai Centre), September 14, 2019.
- Mohandoss, P., Pillai, R. G., Gettu, R. and Sengupta, A. K., “Assessment of Bond Strength of Pretensioned Concrete (PTC) Systems”, 5th Symposium on Concrete Research in India, organised by Indian Institute of Technology Madras and Indian Concrete Institute (Chennai Centre), September 14, 2019.

Trade Journals / Magazines

- Harisankar, S., Sengupta, A. K. and Meher Prasad, A., *Structural Systems, Analysis and Design of Precast Concrete Multi-storeyed Buildings –A Perspective*, Civil Engineering & Construction Review, Trend-set Engineers Pvt. Ltd., New Delhi, Vol. 33, No. 2, February 2020, pp. 36 – 42.

Books

1. Author of Chapter 7 on “Precast Concrete Construction Systems”
Alternate & Innovative Construction Systems for Housing
School of Planning and Architecture, New Delhi, and Building Materials & Technology Promotion Council
Publisher: Building Materials & Technology Promotion Council and I. K. International Pvt. Ltd., 2020.
2. Member of the Editorial Committee and Author of Chapter 2 on “Precast Concrete Building Systems”
Handbook on Precast Concrete for Buildings (ICI Bulletin 02)

Indian Concrete Institute, 2018.

The Handbook consists of 13 chapters such as precast concrete building systems, foundation and underground structures, structural analysis and design, seismic design of precast structures, materials and properties, joints and connections, etc. Two case studies are explained.

3. Co-editor (along with Prof. Devdas Menon) and Author of Chapters 1, 3, 9 and 16
Handbook on Seismic Retrofit of Buildings
Central Public Works Department and Indian Buildings Congress
Publisher: Narosa Publishing House, 2008.

The Handbook consists of 17 chapters such as introduction to seismic design, preliminary evaluation of buildings, condition assessment, retrofit of non-engineered, masonry, reinforced concrete and steel buildings, retrofit of foundations and advanced topics. Two case studies are explained in details.

AWARDS

- For the best paper published in the *ICI Journal* in the year 2013–2014, from Indian Concrete Institute, September 26, 2014.
- Suchit K. Ghosh Memorial Prize for the best paper published in the *Series 'A' Journal* of The Institution of Engineers (India) in the year 2012–2013, December 20, 2013.
- For the best paper published in the *ICI Journal* in the year 2006–2007, from Indian Concrete Institute, September 23, 2007.