



Ranbir and Chitra Gupta School of Infrastructure Design and Management

INDIAN INSTITUTE OF TECHNOLOGY
KHARAGPUR

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Contact:

Prof. Bhargab Maitra

Professor & Head

Ranbir and Chitra Gupta School of

Infrastructure Design and Management

Ph.: 03222-282234 (Head) | 03222-282235 (Office)

Mobile No.: 9434040738

Email: bhargab@infra.iitkgp.ac.in



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The Institute

IIT Kharagpur is the first IIT to be setup in the IIT system and remains the largest and the most diversified. The Institute is ranked this year by many ranking agencies as the best engineering college in the country. Established in 1951, it has been imparting scientific and technical education of the highest standards to the best and the brightest in the country for more than fifty years. With 19 academic departments, 6 centers of excellence and 7 schools, the institute develops and encourages an environment in which inter-disciplinary research and academic activities can flourish.

Mission Statement

To complement the Government and the Industry in shaping country's infrastructural development through state-of-the-art knowledge base, research, consultancy and active collaboration.





The School

Infrastructure is recognized today as one of the most essential requirements for economic development of any country. Large infrastructure projects require strong, interdisciplinary technical and management skills. It has therefore become imperative that Institutes bestowed with solid foundations in engineering, architecture, and management skills should initiate academic programmes to develop trained manpower in this upcoming area of infrastructure design and management. Besides generating the necessary finances, it is very important to build necessary capacity to realize these ambitious targets.

Indian Institute of Technology Kharagpur has a vantage position with regard to its existing faculty and academic programs in the areas of engineering, architecture and management.

The institute, with its numerous academic departments, centers and schools with academic programs in such wide-ranging areas such as law, management, architecture and engineering, is in a uniquely advantageous position to contribute to the nation's goal of building world- class infrastructure.

The Ranbir and Chitra Gupta School of Infrastructure Design and Management has been started by IIT Kharagpur in the year 2008 as a result of the joint initiative of the institute and Mr. Ranbir (Ron) Singh Gupta, an alumnus (1970 batch B. Arch) of this Institute.

Mr. Ranbir Gupta, who is the founder and chairman of SIGMA7 design group, New York has made an endowment through Ranbir and Chitra Gupta Foundation to promote the initiative. The school of Infrastructure Design and Management is the first of its kind to be set up in the IIT system and also in the country.

The School has been shifted into the new premises of Sir J. C. Bose and Acharya P.C Ray Science Block Tower 2: 2nd and 3rd Floors with establishment of new laboratories like Social Infrastructure Laboratory (Associated With The Science And Heritage Initiative), Physical Infrastructure Laboratory (Associated With Future Of Cities Initiative; Water Urbanism and Infrastructure Development; TOD-based Development), Advanced Infrastructure Simulation and GIS Laboratory, Research Scholars' Laboratories, Seminar Hall, Meeting Room, Library and Classrooms. The school has also recruited new core faculty members from varied fields of infrastructure like transportation, urban planning, housing, social infrastructure, environmental sustainability, Geographic Information System (GIS), application of conventional & nonconventional materials in Infrastructure development, and much more.

Over the last seven years, RCGSIDM has produced Four outstanding PhDs, over 150 M. Tech students and put on record two International Symposiums and workshops with international collaborations with esteemed world universities like Columbia University, MIT, Georgia Tech, Lawrence Tech, University of Tokyo, Tokyo Metropolitan University, Curtin University and so on.

GOAL

To develop outstanding professionals capable of designing and delivering quality infrastructure projects efficiently and effectively with a comprehensive and fast- track approach.

Advisory Committee

External Members



Mr. Ron Gupta
Founder and Chairman of
SIGMA7 USA; Chairman, Advisory
Council.



Mr. P. K. Sikdar,
Director, International
Consultants New Delhi



Mr. Vallabh Ganesh
Larsen & Toubro



Mr. K. Kamesh Rao
CEO, Airport Development GMR,
Hyderabad



Mr. R.N. Nayak
Executive Director, Power Grid
Corporation of India



Mr. Ranjit K. Dhar
Hon. FAIA & Former Senior
Project Manager, Govt of
Canada



Mr. Kunal Sen
Executive Director, Peerless
Hotels Limited



Mr. Arunendu Banerjee
Director, STS Systems and Advisor,
Rabindrabharati Univ, Kolkata



Mr. Magnesh Joshi
CEO Sanrachna Structural
Strengthening Pvt. Ltd.,



Mr. Piyush Tiwari
Founder & CEO Save Life
Foundation



Mr. Tarun Sengupta
Group General Manager Rites Ltd.

Internal Members



Prof. Virendra Kumar Tiwari
Director, IIT Kharagpur, Convener



**Prof. Partha Pratim
Chakrabarti**
Department of Computer
Science & Engineering



Prof. S.K. Bhattacharya
Deputy Director, IIT
Kharagpur



Prof. Joy Sen
Head, Architecture and
Regional Planning



Prof. Subrata Chattopadhyay
Dean, Alumni Affairs,
Dept of ARP



**Prof. Siddhartha
Mukhopadhyay**
Electrical Engineering



Prof. Nirjhar Dhang
Head, Civil Engineering



**Prof. Kusam Sudhakar
Reddy**
Civil Engineering



Prof. Biswajit Mahanty
Industrial Systems engineering



Prof. Prasanta Kr. Das
Dean, PGS&R, Mechanical
Engineering



**Prof. Padmavati
Manchukatti**
Head, RGSOIPL



Prof. Prasad Kumar
Head, Ocean Eng & Naval
Architecture

Faculty Info



Dr. Bhargab Maitra
Head and Joint Faculty
B.E. (Civil, B.E. College, Howrah)
M. Tech (T.S.E, IIT Kanpur)
Ph. D. (T.S.E, IIT Bombay)
Email: bhargab@infra.iitkgp.ac.in



Dr. Arkopal Kishore Goswami
Assistant Professor
B.Sc. in Civil (RIT Jamshedpur);
M.Sc. (University of Virginia, USA);
PhD (University of Virginia, USA);
Email: akgoswami@infra.iitkgp.ac.in



Dr. Swati Maitra
Assistant Professor
B.E. in Civil, (B.E.College, Shibpur);
M.Tech in Structural (IIT Bombay);
Phd (Civil Eng. IIT Kharagpur)
Email: swati@infra.iitkgp.ac.in



Dr. Ankhi Banerjee
Assistant Professor
B. Arch (Jadavpur University);
M. Arch (Jadavpur University);
PhD (IIT Kharagpur);
Email: ankhi@infra.iitkgp.ac.in



Dr. Bharath H Aithal
Assistant Professor
B.E. (E&E, Bangalore University);
Ph.D. (IISc, Bangalore);
Post Doc (University of Southern
California, IISc Bangalore);
Email: bharath@infra.iitkgp.ac.in

JOINT FACULTY



Prof. Joy Sen
Former Head and Professor
B. Arch (Hon. IIT Kharagpur);
MCRP (ISU, Ames, USA); Min: TSC-DAT
(ISU-UNDP)
PhD (IIT Kharagpur);
Email: joysen@arp.iitkgp.ernet.in



Prof. Uttam Kumar Banerjee
Former Head and Professor
B. Arch (IIT Kharagpur);
MCP (IIT Kharagpur);
PhD (IIT Kharagpur);
Email: ukb@arp.iitkgp.ac.in



Dr. Sutapa Das
Assistant Professor
B. Arch. (JU);
M. Tech (Building Technology &
Construction Management, IIT
Bombay); Ph.D. (NUS, Singapore)
Email: sutapa@arp.iitkgp.ac.in

Faculty Members Associated with the School

Prof. S. Chattopadhyay
Arch. & Regl. Planning
Email: schat@arp.iitkgp.ac.in

Prof. Shubha Verma,
Civil Engg.
Email: shubha@civil.iitkgp.ac.in

Prof. Sudeshna Mitra,
Civil Engg.
Email: sudeshna@civil.iitkgp.ac.in

Prof. K. S. Reddy
Civil Engg.
Email: ksreddy@civil.iitkgp.ac.in

Prof B. Mohanty
I & S E
Email: bm@hijli.iitkgp.ernet.in

Prof. J. J. Thakkar
I & S E
Email: jt@iem.iitkgp.ac.in

Prof. P. K. Bhaskaran
OE & NA
Email: pkbhaskaran@naval.iitkgp.ac.in

Prof. R. Pradhan
VGSOM
Email: rudrap@vgsom.iitkgp.ac.in

Prof. B.K. Dubey
Civil Engg
Email: indrajit@rgsoipl.iitkgp.ac.in

Prof. Uday Shankar
RGSOIPL
Email: uday@rgsoipl.iitkgp.ac.in

Prof. Arindam Basu
Email: arindam@rgsoipl.iitkgp.ac.in

Prof. S. K. Ghosh
CS&E
Email: skg@cse.iitkgp.ac.in

Prof. Nirjahr Dhang,
Civil Engg
Email: nirjhar@civil.iitkgp.ac.in

Prof. S.K Bhattacharya,
Civil Engg
Email: bsri@civil.iitkgp.ac.in

Prof. Mahendra Reddy Vanteru
Mech. Engg
Email: mahendra@iitkgp.ac.in

Faculty Events



Prof. Bhargab Maitra



International Collaborations

International Workshop (Autumn 2017) Measures for Better Utilization of Transportation Infrastructure



National Collaborations

International workshop and congress on Traffic and Transportation 2030: Visions, Concepts and Technologies.



Professional Responsibilities

- i. Topic Area Manager, Topic Area D, Activity and Transport Demand, World Conference on Transportation Research Society (WCTRS), 2017-2022
- ii. Chair, SIG D3 (Applications of Travel Behavior Analysis and Demand Modeling Approaches), World Conference on Transportation Research Society (WCTRS), 2013-22
- iii. Sub-Group Chairman for modification of IRC:73-1980 "Geometric Design Standards for Rural (Non-Urban) Highways", Indian Roads Congress, 2018-2019
- iv. Expert Member, "Advisory Sub-Committee for Infrastructure", Department of Urban Development and Municipal Affairs, Govt. of West Bengal (2019 onwards)
- v. Expert Member, "High Power Advisory Committee for Recommending Interventions for Addressing Air Pollution Issues in the Kolkata City, Kolkata Municipal Corporation. 2019-2020



Publications

- i. Bhattacharyya, K., Maitra, B., Boltze, M. (2019). "Calibration of Micro-Simulation Model Parameters for Heterogeneous Traffic Using Mode-Specific Performance Measure". Transportation Research Record, Transportation Research Board (Accepted)
- ii. Dandapat, S., Bhattacharyya, K., Maitra, B. (2019). "Quantifying the factors influencing urban bus passenger boarding and alighting dynamics in an emerging economy". ASCE Journal of Transportation Engineering, Part A: Systems. (Accepted)
- iii. Bhattacharyya, K., Krishnan, K.N., Maitra, B. (2019) Analytical and micro-simulation models for investigating vehicle-class specific gap acceptance behavior at urban intersections with non-lane based traffic operations. Journal of Asian Transport Society. (Accepted)
- iv. Bera, R. & Maitra, B. (2019) Identification of Priority Attributes Influencing the Choice of Plug-in Hybrid Electric Vehicle in Indian Megacities. Journal of the Eastern Asia Society for Transportation Studies (Accepted)
- v. Dandapat, S., Ghosh, T., Shankar, U., Maitra, S., Maitra, B. (2019) A Relook at the Pollution Certification for In-use Vehicles in India and Way Forward, Journal of Asian Transport Society, (Accepted).
- vi. Ghosh, K., Singh, N., & Maitra, B. (2019). Traffic Management during a Big Sport Event: A Case Study in Kolkata City. Journal of Eastern Asia Society for Transportation Studies (EASTS), (Accepted)
- vii. Maheshwary, P., Bhattacharyya, K., Maitra, B., & Boltze, M. (2019). "A methodology for calibration of traffic micro-simulator for urban heterogeneous traffic operations ". Journal of Traffic and Transportation Engineering (Accepted)
- i. Bhattacharyya, K., Maitra, B., Boltze, M. (2019). Implementation of Bus Priority with Queue Jump Lane and Pre-Signal at Urban Intersections with Mixed Traffic Operations: Lessons Learned? Transportation Research Record: Journal of the Transportation Research Board, Vol. 2673(3), 646-657.
- ii. Cheranchery, M. F., & Maitra, B. (2019). Improving Ridership and Reducing Subsidy for Premium Bus Service in Kolkata Metro City. Journal of Transportation Engineering, Part A: Systems, 145(7), 04019030.
- iii. Cheranchery, M.F. Bhattacharyya, K., Salih, M., Maitra, B. (2019). A proactive approach to assess safety level of urban bus stops. International Journal of Injury Control and Safety Promotion. Vol. 26 (3), pp. 260-270.
- iv. Prasad, P., & Maitra, B. (2019). Identifying areas of interventions for improvement of shared modes for school trips. Transportation Research Part A: Policy and Practice, 121, 122-135.
- v. Bhattacharyya, K., Paul, B., Maitra, B. (2018). Dynamics of Vehicle Discharge at Signalized Intersections with Nonlane-based Mixed Traffic Operations. Asian Transport Studies, Vol. 5(2), 310-325.
- vi. Cheranchery, M. F., & Maitra, B. (2018). Investigating perception of captive and choice riders for formulating service standards of ordinary and premium buses in Indian cities. Transport Policy, 72, 89-96.
- vii. Bhattacharyya, K., Paul B. & Maitra, B. (2018). Dynamics of vehicle discharge at signalized intersections with non-lane based mixed traffic operations. Journal of Asian Transport Studies. 5(2), 310-325.
- viii. Paul, B., Ramteke, M., Maitra, B. & Mitra S. (2018). New Approach for Calibrating Robertson's Platoon Dispersion Model. Journal of Transportation Engineering: Part A: Systems, ASCE, 144(5).

- ix. Cheranchery, M. F., Prasad, P., & Maitra, B. (2018). Identifying Management Strategies for the Improvement of Urban Bus Services: A Case Study in Kolkata. Journal of Asian Transport Studies, 5(1), 81-97.
- x. Cheranchery, M. F., Dasari, D., Bera, R., & Maitra, B. (2018). Investigating Heterogeneity in the Perception of Trip Makers for Trip Attributes. Transportation in Developing Economies (Under Review).
- xi. Aparna, B.S., Prasad, P., Cheranchery, M. F., & Maitra, B. (2017). Effect of development of rural roads and feeder service on trip characteristics of households: a case study. Transportation in developing economies, 3(2), 19.
- xii. Dandapat, S., Cheranchery, M. F., & Maitra, B. (2017). Is fare increment desirable for ensuring operational viability of private buses? Transport Policy, 59, 134-141.
- xiii. Sadhukhan, S., Banerjee, U. K., and Maitra, B. (2017). "Preference heterogeneity towards the importance of transfer facilities at metro stations in Kolkata." Travel Behaviour and Society, Vol. 12, 72-83, <https://doi.org/10.1016/j.tbs.2017.05.001>
- xiv. Sadhukhan, S., Banerjee, U. K., and Maitra, B. (2017). "Rationality of Fare Increment for Improvement of Transfer Facilities at Metro Stations: An Experience in Kolkata." Transport Policy, Vol. 58, 31-38
- xv. Bulusu, S. A., Prasad, P., and Maitra, B. (2017). "Effect of Development of Rural Roads and Feeder Service on Trip Characteristics of Households: A Case Study." Transportation in Developing Economies, 3: 19.
- xvi. Cheranchery, M.F, Maitra, B. (2017). Priority Areas of Intervention for Improvement of Urban Bus Services: An Experience in Kolkata. Transportation Research Record: Journal of the Transportation Research Board, 2634, 17-27



Projects

- i. Advisory Services as Traffic and Safety Expert Related to Preparation of DPR for Provision of Additional Services Like Service Road, Truck Lay Bay, PUP, VUP, FOB etc for Augmenting Road Safety Features for PKG-I (Dunkuni-Chandannagar) and PKG-II (Chandannagar-Mogra) of SH-13 RITES LIMITED.
- ii. Preparation of Detailed Project for Short Term and Long-Term Improvement Plan of Chingrighata Junction on Eastern Metropolitan Bypass for KMDA Kolkata Metropolitan Development Authority.
- iii. Principal Promoting Stronger Road Safety Regulations in India with an Emphasis on Safe Speed, Speed Management, Enforcement, and Public Awareness International Federation of Red Cross and Red Crescent Societies (IFRC)
- iv. Safety Consultancy Services for the Four Lane Divided Carriageway Facility Constructed on BOT (Annuity) Basis, Presently on Operation and Maintenance Stage, for Panagrah - Palsit - Dankuni Section of NH-2 From km.520 to Km.649.072 in the state of West Bengal NATIONAL HIGHWAYS AUTHORITY OF INDIA



Books

Training Manual For Drivers, 2017, © Indian Institute of Technology Kharagpur, Published by Cygnus Advertising Pvt. Ltd., Kolkata, ISBN: 978-93-808 13-53-0, Editor: Bhargab Maitra.



Awards

Institution of Engineers (India): Series A 98 127-134 (2017)



Conference Papers

- i. Bhattacharya T., Sen J., (2019). Revisiting the Pan-Asian ideology to propagate an alternate perspective of urban design syntax' presented on the conference of Contours of Act East Policy: Opportunities, Challenges and Futuristic Trends of Indo-ASEAN Partnership", February 18-19, 2019 (In Press).
- ii. Bansal S & Sen J, (2019). Network Assessment of Indian Tier – II cities' airports in terms of type, accessibility, and connectivity. World Conference on Transport Research - WCTR 2019, Mumbai, India.
- iii. Bansal S & Sen J, (2019). Formulating airport-oriented development (AOD) Index for efficient urbanization and boosting globalization: A case of Varanasi, India. 49th Annual Conference of Urban Affairs Association. Los Angeles, USA.
- iv. Sen J., Bhattacharya T. (2019) An exploration of symbols in Indian Architecture based on the triad of syntax, semantics, and semiotics: Case study of chosen built elements, artefacts, seals and petroglyphs. by IHAR-IGNCA Inaugural Conference on Indic Chronology, IGNCA, New Delhi, - (2019)
- v. Parmar, S.S., Goswami A. K. & Sen J. (2019). An assessment and delineation of Socio-economic Resilience Landscapes of the Region based on the inherent latent factors of vulnerabilities. 49th Annual Conference of Urban Affairs Association. Los Angeles, USA.
- vi. Parmar, S.S., Goswami A. K. & Sen J. (2019). An Assessment of Socio-economic Resilience for the Delineation of Socio-economic Resilient Landscapes of the Region. 55th International Society of City and Regional Planners (ISOCARP) World Planning Congress, Jakarta-Bogor, Indonesia.
- vii. Bhattacharya T, Sen J. (2019). An attempt to assess the need and potential of aesthetic regeneration to improve walkability and ergonomic experience of urban space 6th International Conference on Architecture, Presented at Sustainable Urban Planning and Infrastructure (AHFE) in Washington D.C., U.S.A, from 24th to 28th July 2019.
- viii. Majumdar, M., Sen, J. (2019) Inter-relationship between Brownfield and Greenfield development and its impact on sustainable economic development within a metropolis: A case of Kolkata Metropolitan Area' has been accepted at the City Futures IV Creating just and sustainable cities. EURA – UAA joint conference
- ix. Bansal S & Sen J, (2018). Scope of Airport-oriented Development (AOD) for Indian airports: A Distribution Assessment Using Spatial Econometrics Models. 22nd ATRS (Air Transport Research Society) World Conference, Seoul, South Korea.
- x. Majumdar, M., Sen, J. (2018) Spatio-temporal Assessment of Brownfield Transformation in a Metropolis: Case of Kolkata India' in Annual International Conference on Architecture and Civil Engineering. Scopus
- xi. REAL CORP 2018 EXPANDING CITIES DIMINISHING SPACE. Are Smart Cities the solution or part of the problem of continuous urbanisation around the globe? CONFERENCE DATES: 4 April 2018 6 April 2018 by Sen J., Mandal P. REAL CORP 2018 EXPANDING CITIES DIMINISHING SPACE. Are Smart Cities the solution or part of the problem of continuous urbanisation around the globe? - (2018)
- xii. Sen J., Paul A. (2017) Identifying Factors for Evaluating Livability Potential within a Metropolis: A Case of Kolkata - International Journal of Civil, Environmental, Structural, Construction and Architectural Engineering, 11(1), pp. 50-55. 2017 11 (1) 50-55
- xiii. Sen J., Paul A. (2017) A policy development framework for inclusive communities to achieve desired livability - 53rd ISOCARP Congress Portland, Oregon, USA
- xiv. Sen J., Bhattacharya T. (2017) Connecting Histories: Synergy of Art and Folk in Augmenting Urban Space Design. Connecting Histories ; Connecting Histories
- xv. Bansal S., Goswami A. K., Sen J (2017) Globally Integrated Urban Network Management based on Airport-oriented Development (AOD) - Evaluation of Concept and Strategic Model: A case of Varanasi, India at European Urban

Research Association (EURA) Conference 2017

- xvi. Bansal S, Goswami AK, & Sen J, (2017). Globally Integrated Urban Network Management based on Airport-oriented Development (AOD) - evaluation of concept and strategic model: A case of Varanasi, India. Annual Conference of Europe Urban Research Association (EURA), University of Warsaw, Poland.
- xvii. Role of networks in creative economy: Case of Varanasi, India by Sen J., Saha D. Annual Conference of Europe Urban Research Association (EURA), University of Warsaw, Poland - (2017)



Journal papers

- i. Bansal, S., & Sen, J. (2018). Airport-oriented development (AOD) - a potential source of adhesion and driver of growth in making more efficient urban-rural systems. Proceedings of the 12th World Congress of the RSAI. pp. 1604-1612 (ISBN 978-98-95421-60-2)
- ii. Parmar, S.S., Goswami A. K. & Sen J. (2018). Allocation of Infrastructure in City Region Based on Resilient Economic Landscapes of Development Preparedness: Cases of Districts West Bengal and West Mithila Region". GSTF. ISSN 2301-394X. DOI: 10.5176/2301-394X_ACE18.68
- iii. Sen J., Banerjee A., Bhattacharya T. (2018) Extended paper on 'A Study to Augment the Vitality of an Urban Space by Regulating Visual art parameters' GSTF digital library, JET, DOI: 10.5176/2301-394X_ACE17.63
- iv. Sen J., Paul A. (2017) Livability assessment within a metropolis based on the impact of Integrated Urban Geographic Factors (IUGFs) on clustering urban centers of Kolkata - Cities, 74 (December 2017), 142-150 Cities, 74 142-150 (2018)
- v. Parmar S. S., Goswami A. K., Sen J. (2017) Economic Sustainability and Resilience of MSME sectors: Case of Traditional Craft Industries of West Mithila Region, Bihar International Journal on Emerging Technologies 8 59-66
- vi. Paul A., Mandal P. , Banerjee A. , Goswami A. K., Sen J. (2017) Factors Effecting Innovation Driven Livability: Case of Kolkata Metropolitan Area by Institute of Town Planners, India Journal 14 82-89



Publications in Book/Manual Chapters

- i. Bhattacharya, T. et al., 'Comparative analyses of two altered perceptions of culture based on features of pedestrian experience and aesthetic regeneration of built environment Case study of two spaces, Jorasanko Thakur Bari area and Santiniketan, West Bengal' Perception, Design and Ecology, Springer (In Press)
- ii. Sen J., Bhattacharya T., Dasgupta S. (2019) Advances in Human Factors in Architecture, Sustainable Urban Planning and Infrastructure. "An Attempt to Assess the Need and Potential of Aesthetic Regeneration to Improve Walkability and Ergonomic Experience of Urban Space" 358-370 (2019)
- iii. Groundwater of South Asia by Shaw A., Das P. , Layek M. K., Chakraborty M. , Jamal M. S., Sengupta P. , Basu A. , Sen J. , Mukherjee A. Exploration of groundwater-enriched aquifers of central Gangetic basin, India using geomorphic signatures 119-129 (2018)
- iv. From Poverty, Inequality to Smart City by Sen J., Pandey V., Bansal S. Redefining and exploring the Smart City Concept in Indian Perspective: case study of varanasi 93-108 (2017)
- v. Smart Economy in Smart Cities by Sen J., Saha D., Majumdar M., Chaudhuri A. Section 2 553-576 (2017)



Projects

- i. Principal Investigator (PI) Developing a Research Proposal on Mapping the Economic Worth (MEW) of Creative Industries in West Bengal (Part I Surveys, Reconnaissance and Analyses) British Council Division
- ii. Principal Investigator (PI) Design of Proposed Auditorium Complex at St. Xaviers Campus, New Town BASUMATI INCORPORATION
- iii. Co-Principal Investigator (Co-PI) Academy of Classical and Folk Arts (ACFA) Various Government and Non-Government

Organisations

- iv. Co-Principal Investigator (Co-PI) Development of Index and Measurement of Happiness at New Town, Kolkata New Town Kolkata Development Authority
- v. Co-Principal Investigator (Co-PI)- Smart and Integrated Pedestrian System Design (UAY_I_IITKGP_007) MHRD

Dr. Arkopal Kishore Goswami



- i. Crash Analysis and Prediction Framework: Enhancing Safety through Roadway Infrastructure Augmentation by Anand S., Hussain S., Goswami A. K. International Conference Transportation Infrastructure Projects Conception - (2019)
- ii. Location Choice Analysis for Transit Oriented Development (TOD): A Case Study of Kolkata by Kavta K., Srivastava N., B. S. M., Goswami A. K. International Conference on Transportation & Development - (2019)
- iii. Measuring user's perception of urban pedestrian infrastructure networks: A conjoint analysis approach by Nag D., Goswami A. K. Transportation Research Board Annual Meeting - (2019)
- iv. Principal coordinator for Global Initiative of Academic Networks (GIAN) course, in collaboration with Tokyo Metropolitan University, Tokyo, Japan, on "Information Technology Applications in Transportation Planning and Management", March 2019
- v. Coordinator, Joint International Field Workshop, in collaboration with Georgia Institute of Technology, Atlanta, USA on "Smart Infrastructure Planning to Connect People and Jobs", March 2019
- vi. Principal coordinator for Global Initiative of Academic Networks (GIAN) course, in collaboration with University of Virginia, USA,

on "Smart Urban Multimodal Transport Planning, Operations and Management", July 2019

- vii. Allocation of Infrastructure in city region based on resilient economic landscapes of development preparedness: Cases of districts West Bengal and West Mithila region by Parmar S. S., Sen J., Goswami A. K. 6th Annual International Conference on Architecture and Civil Engineering (ACE) 484-489 (2018)



Conference Papers

- i. Developing pedestrian LOS for urban sidewalk network: A methodology for selection of measures of effectiveness using a three-dimensional approach by Nag D., Goswami A. K. Urban Transitions 2018 - (2018)
- ii. Evaluation of Service Improvement measures on Mass Transit modal share by Bhaduri E., Nag D., Goswami A. K. 12th World Congress of the Regional Science Association International (RSAI) 1132-1138 (2018)
- iii. Traffic congestion mitigation: A research review of supply and demand approaches by Kavta K., Goswami A. K. 97th Annual meeting of Transportation Research Board (TRB) - (2018)



Journal papers

- i. Singh, N., Bansal, S., & Goswami, A. K. (2017). Assessment of Service Quality Related to Accessibility and Infrastructural Amenities at Kharagpur Railway Station. International Journal on Emerging Technologies. 8 (1) pp. 70-75. ISSN 92249-3255.
- ii. Parmar, S.S., Goswami, A. K., Sen, J. (2017). Economic Sustainability and Resilience of MSME sectors: Case of Traditional Craft Industries of West Mithila Region, Bihar. International Journal on Emerging Technologies. ISSN No. (Print): 0975-8364, (Online): 2249-3255.
- iii. Paul A., Mandal P., Banerjee A., Goswami A. K., Sen J (2017). Factors Effecting Innovation Driven Livability: Case of Kolkata Metropolitan Area. Institute of Town Planners, India Journal. 14 (2) pp. 82-89
- iv. Nag, D., Paul, S., Saha, S., Goswami, A.K. (2018).

Sustainability assessment for the transportation environment of Darjeeling, India. Journal of Environmental Management. 213 pp. 489-502.

- v. Nag, D., Goswami, A.K. (2019). Identification of Measures of Effectiveness (MOEs) for developing Pedestrian Level of Service (PLOS)—A Theoretical Approach using Expert's Opinion on a Fuzzy Likert (FL) scale. International Review for Spatial Planning and Sustainable Development 7(4) pp. 56-82
- vi. Nag, D., Goswami, A.K., Gupta, A., Sen, J. (2020). Assessing Urban Sidewalk Networks Based on Three Constructs: A Synthesis of Pedestrian Level of Service Literature. Transport Review (Accepted, In Press)
- vii. Bhaduri, E., Manoj, B.S., Sen, J., Maitra, B.M., Goswami, A.K. (2020) Measuring User Satisfaction of Pedestrian Facilities and its Heterogeneity in Urban India – A Tale of Three Cities, Journal of Eastern Asia Society for Transportation Studies (Accepted, In Press)



Projects

- i. Developing an integrated land use - transport - emissions model utilizing emerging big data sources for quantifying the energy and environmental impacts of ridesharing services, awarded under the Scheme for Promotion of Academic and Research Collaboration (SPARC), Ministry of Human Resource Development, GoI, in collaboration with University of Leeds, UK, March 2019
- ii. Assessment of emissions from thermal power plants due to energy demand from electric vehicles: Policy recommendations for renewable energy integration, awarded under the Impactful Policy Research in Social Sciences (IMPRESS) scheme, Indian Council of Social Science Research (ICSSR), Ministry of Human Resource Development, GoI, March 2019
- iii. Promoting Stronger Road Safety Regulations in India with an Emphasis on Safe Speed, Speed Management, Enforcement, and Public Awareness, funded by the International Federation of Red Cross and Red Crescent Societies (IFRC), 2019
- iv. Development of Index and Measurement of Happiness at New Town, Kolkata funded by New Town Kolkata Development Authority, 2019

- v. Developing a Spatial Data Infrastructure with Application in Urban Transport funded by the Natural Resources Data Management System (NRDMS) Scheme, Department of Science and Technology, GOI, 2019.
- vi. Principal Investigator (PI) Traffic Study for Multi-Level Car Parking Facility MACKINTOSH BURN LIMITED
- vii. Principal Investigator (PI) Developing a Pedestrian Master Plan for the City of Varanasi Indian Institute of Technology Banaras Hindu University.
- viii. Co-Principal Investigator (Co-PI) Traffic Impact Study of the Proposed Commercial Development at 25, N. S. Road, Kolkata - 700001 BENGAL BONDED WAREHOUSE LIMITED
- ix. Traffic Impact Study for the Proposed Development at KPC Medical College and Hospital, Jadavpur K P C MEDICAL COLLEGE AND HOSPITAL JADAVPUR

Dr. Swati Maitra



Conference/Workshop Speaker

- i. "Structural Analysis of Whitetopping" Workshop titled "Whitetopping – A Sustainable Option for Pavement Rehabilitation", School of Infrastructure, IIT Bhubaneswar, November 08, 2019.
- ii. "Road Safety Audit at Construction Stage" Training Programme on Road Safety Audits, Organized by IIT Kharagpur and Asian Institute of Transport Research, New Delhi, at IIT Kharagpur, October 21-25, 2019
- iii. "Concrete Whitetopping: A Rehabilitation Measure for Pavements" AICTE Short Term Course titled "New Technology Applications in Road Pavements", Civil Engineering Department, NIT Rourkela, January 12-16, 2019.
- iv. "Continuously Reinforced Concrete Pavement", AICTE Short Term Course titled "New Technology Applications

in Road Pavements”, Civil Engineering Department, NIT Rourkela, January 12-16, 2019.

- v. “Road Safety Audit during Construction” Short Term Course under GIAN, MHRD, titled “Conventional and Intelligent Measures for Enhancing Road Safety” IIT Kharagpur, December 10-14, 2018.
- vi. “Safety in Construction Zones for Roads” Training Programme titled “Road Safety Engineering Measures” Organized by IIT Kharagpur and Asian Institute of Transport Research, New Delhi, at IIT Kharagpur, July 30-Aug 03, 2018
- vii. “Sustainable Construction Materials for Infrastructure Development” AICTE QIP Short Term Course titled “Sustainable Materials for Engineering Applications (SMEA-2018)”, Civil Engineering Department, VSSUT, Burla, May 14-19, 2018
- viii. “Recycled Aggregate Concrete as Construction Material” AICTE QIP Short Term Course titled “Sustainable Materials for Engineering Applications (SMEA-2018)”, Civil Engineering Department, VSSUT, Burla, May 14-19, 2018

Conference Papers

- i. Das, P. and Maitra, S.R. (2019). “Identifying Priority areas of Intervention for Improving Pedestrian Infrastructure in a Tourist Location based on Tourists’ Perception” 5th International Conference of Transportation Research Group of India, CTRG 2019
- ii. Maitra, S. R. and Reddy, K. S. (2019). “Material and Size Effect on Fatigue Damage of Concrete for Pavement Application”, 15th World Conference on Transport Research (WCTR 2019), May 25-31, 2019, IIT Bombay, India
- iii. Basu, D., Roy, S., Maitra, S.R., and Majumdar, B.B. (2019). “An assessment towards identifying improvement needs of urban bus stop infrastructure: Knowledge gained from Bhubaneswar”, Proceedings of the 15th World Conference on Transport Research (WCTR2019), May 25-31, 2019, IIT Bombay, India
- iv. Maitra, S. R., Reddy, K. S. and Ramachandra, V. (2019).

“Whitetopping: An Environment-Friendly Pavement Rehabilitation Strategy for Urban Roads.” Proceedings of the International Seminar Construction and Maintenance of Rigid Pavement – Current Practice and Way Forward by Indian Roads Congress, New Delhi, January 18-19, 2019, New Delhi, India

- v. Maitra, S. R., Reddy, K. S. and Ramachandra, L. S. (2017). “Effect of Joint and Pavement Parameters on Load Transfer Characteristics of Granular Interlocked Jointed Concrete Pavement.” Compendium of 4th International Conference of Transport Research Group of India, CTRG 2017, Dec 17-20, IIT Bombay, India

Journal papers

- i. Deb, S., Mitra, N., Maitra, S. R. and Basu Majumdar, S. “Comparison of Mechanical Performance and Life Cycle Cost of Natural and Synthetic Fibre Reinforced Cementitious Composites”, Journal of Materials in Civil Engineering, ASCE (accepted for publication).
- ii. Maitra, S. R., Reddy, K. S. and Ramachandra, L. S. (2019) “Effect of Joint and Pavement Related Parameters on Load Transfer Characteristics of Aggregate Interlocked Jointed Concrete Pavement”, Transportation in Developing Economies, Springer, 5:15
- iii. Maitra, S. R., Reddy, K. S., Ramachandra, L. S. and Pandey, B. B. (2018) “Numerical Analysis of Short Paneled Concrete Pavement”, Indian Highways, 46(8), 11-19.
- iv. Maitra, S. R., Reddy, K. S. and Ramachandra, L. S. (2018) “Stress Intensity Factor based Damage Prediction Model for Plain Concrete under Cyclic Loading”, Journal of Materials in Civil Engineering, ASCE, 30(7), 04018118-1-12.
- v. Deb, S., Mitra, N., Basu Majumdar, S. and Maitra, S. R. (2018). “Improvement in tensile and flexural ductility with the addition of different types of poly-propylene fibres in cementitious composites”, Construction and Building Materials, Elsevier, 180, 405-411.

Projects

- i. Technological Investigations and Pilot Projects for Alternatives to HMA in Road Construction, Principal Investigator, Sponsored by Kolkata Municipal Corporation, Govt. of West Bengal
- ii. Thin Whitetopping: A Pilot Study for Design, Construction and Performance Evaluation, Principal Investigator, Sponsored by PWD, Govt. of West Bengal with Ultratech Cement Ltd. as Industry Partner
- iii. Developing A Spatial Data Infrastructure with Application In Urban Transport, Joint Principal Investigator, Sponsored by DST, Govt. of India
- iv. Engineered Cement Composites - A Replacement for Conventional Concrete for Sustainable Infrastructure, Sponsored by MHRD/IIT Kharagpur, under Future of Cities, Co-Investigator
- v. Proof Consultancy of 4-laning of Kutchery Chowk Ranchi-Piska More-Biju Para Section (from km 0.000 to km 34.000) of NH-75 with PQC Pavement in the state of Jharkhand, Consultant-in-Charge, M/S Varaha Infra Ltd- Sunil Hitech Engineering Ltd.
- vi. Traffic Impact Study for the Proposed Development at KPC Medical College and Hospital, Jadavpur, Co-Consultant
- vii. Traffic Impact Study of the Proposed Commercial Development at 25, N. S. Road, Kolkata – 700001, Co-Consultant

Awards

DAAD Fellowship of Bilateral Exchange of Academics, for the visit to Technische Universitat, Darmstadt, Germany for research, funded by German Academic Exchange Service, 2019

Publications in Book/Manual Chapters

- i. Maitra S. R. “Design Recommendations for Sarat Bose Road”, The Kolkata Municipal Corporation, Govt. of West Bengal, August 2019

- ii. Maitra, S. R., Kranthi, K. K. and Reddy, K. S. “Potential Alternatives to HMA in Road Construction”, The Kolkata Municipal Corporation, Govt. of West Bengal, July 2019
- iii. Maitra, S. R. “Design Report – Thin Whitetopping”, The Public works Department, Govt. of West Bengal, March 2019
- iv. Maitra, S. and Bera R. (2017). “Know Your Roads” in Training Manual for Drivers, Ed. by Maitra, B., ISBN: 978-93-80813-53-0, pp. 1-17
- v. Maitra, S. and Bhattacharya, K. (2017). “Road Signs” in Training Manual for Drivers, Ed. by Maitra, B., ISBN: 978-93-80813-53-0, pp. 19-45.

Dr. Bharath Haridas Aithal

Conference Papers

- i. Laliita, A., Nimish, G., Bharath., H.A., 2019. Land use pattern analysis and Land Surface Temperature extraction: A case study of Kolkata, In Proceedings Indicon 2019, Gujarat, December 2019, India.
- ii. Nimish, G., Bharath., H.A., 2019. Spatial-temporal impacts of urban land use land cover on land surface temperature: Coimbatore. In proceedings of 5th International Conference on Countermeasures to Urban Heat Islands. International Institute of Information Technology - Hyderabad, December 2019, India.
- iii. Chandan, M.C., Nimish, G., Bharath., H.A., 2019. Mapping and assessing spatial forms of Urban Expansion through spatio-temporal metrics and modelling the future urban growth. In proceedings of International Conference on Future Cities (ICFC-2019), December 2019, IIT Roorkee, India.

- iv. Bharath., H.A., 2019. Developing a Spatial Data Infrastructure through Urban observatory for Sustainable Urban Development.
- v. In proceedings of National conference on Storing Energy for sustainable future- future energy in an Isolated world- 35th National convention of Electrical Engineers. November 2019, Chennai, India.
- vi. Chandan, M.C., Aadithyaa, J.S., Bharath., H.A., 2019. Integration of Particle swarm optimization with SLEUTH for Urban growth pattern visualisation. In proceedings of 55th International Society of City and Regional Planners congress (55th ISOCARP-2019), September 2019, Indonesia.
- vii. Chandan, M.C., Bharath., H.A., 2019. Exploring Urbanization Pattern Change – A Case of Two Metro Cities of India. In NASA SARI LULCC meet - Land Use/Cover Changes, Environment and Emissions in South/Southeast Asia – An International Regional Science Meeting, July 2019, Johor Bahru, Malaysia.
- viii. Chandan, M.C., Nimish, G., Bharath., H.A., 2019. Quantitative Measurement, Analysis of Land Use Change through Spatio-Temporal Pattern and Modelling. In proceedings of 16th International Conference on Computers in Urban Planning and Urban Management, July 2019, China.
- ix. Akshit, S., Bharath., H.A., 2019. Integrated System Dynamics Cellular Automata Housing Allocation model to understand housing demand and supply. In proceedings of 49th Urban Affairs Conference, April 2019, California, USA.
- x. Nimish, G., Chandan, M.C., Bharath., H.A., 2019. Characterizing the relationship between land use pattern and land surface temperature with automated built up extraction: Process, pattern and modelling. In proceedings of EGU General Assembly 2019, April 2019, Vienna, Austria.
- xi. Prakash, P.S., Satrupa, M., Bharath., H.A., 2019. Automatic extraction of building features from UAV
- xii. using artificial neural networks. In proceedings of 1st International Conference on Unmanned Aerial System in Geomatics - 2019, April 2019, IIT Roorkee Delhi, India.
- xiii. Sudeep, B., Nimish, G., Bharath., H.A., 2019. Spatial-temporal impacts of urban land use land cover on land surface temperature: Coimbatore. In proceedings of International Conference on Smart Cities: Opportunities and Challenges. Jamia Millia Islamia, New Delhi, March 2019, India.
- xiv. Satrupa, M., Enosh D., Aishwarya, N., Bharath., H.A., 2019. Development of Flood Inundation Map Using Geospatial Techniques. In proceedings of Climate Change Impacts, Vulnerabilities, and Adaptation: Emphasis on India and Neighbourhood (CCIVA 2019). International Institute of Technology Kharagpur, February 2019, India.
- xv. Aishwarya, N., Das, S., Bharath, H.A., 2019. Adaptive capacity assessment of a region against flood vulnerability using GIS and remote sensing. In Proc. of 4thWCDM: 4th World congress on Disaster management, Bombay, India
- xvi. Ramachandra, T.V., Deepthi, H., Bharath, H. A., Venugopal, R., Joshi, N.V., 2019. Bioethanol from Estuarine Macroalgae, West Coast of Karnataka, India. In proceedings of 35th Annual Symposium on Space Science and Technology, January 2019, IISc, India
- xvii. Mc C., Aithal B. H., 2019. Quantitative Measurement, Analysis of Land Use Change through Spatio-Temporal Pattern and Modelling 16th International Conference on Computers in Urban Planning and Urban Management.
- xviii. Ramachandra, T.V., Bharath, H. A., Vinay, S., Kumar, U., Venugopal, K. R., Joshi, N.V., 2016. Modelling and Visualization of Urban Trajectory in 4 cities of India. IISc-ISRO-STC 2016, January 7-8, 2016, IISc, Bangalore, India.



Journal papers

- i. Ramachandra, T.V., Jeffery M.S., Bharath, H.A., Bharath, S., Micro level analyses of environmentally disastrous urbanisation in Bangalore, Environmental Monitoring and Assessment, *accepted in press*
- ii. Ramachandra, T.V., Jeffery M.S., Bharath, H.A., Vinay, S., Geo-visualisation of landscape dynamics in the proposed mega industrial corridor, Environmental Monitoring and Assessment, *accepted in press*
- iii. Ramachandra, T.V., Bharath, S., Vinay, S., Bharath, H.A., 2020. Mitigation of Carbon Footprint, Sustainable living, Yojana, 50(1), Pp 36-41
- iv. Ramachandra, T.V., Jeffery M.S., Bharath, H.A., Bharath, S., 2020. Insights into riverscape dynamics with the hydrological, ecological and social dimensions for water sustenance, Current Science, 118(1) *accepted in press* (Impact factor :0.756)
- v. Ramachandra, T.V., Sudharshan, B., Gouri, K., Bharath, H. A., 2019. Assessment of Forest Dynamics in Chikkamagalur District, Central Western Ghats using Temporal Remote Sensing Data and Spatial Metrics, Indian Forester, 145(8), pp. 757-767.
- vi. Bharath, H.A., Chandan, M.C., Nimish, G., 2019. Assessing land surface temperature and land use change through spatio-temporal analysis: a case study of select major cities of India, Arabian Journal of GeoSciences, 12:367,3-16
- vii. Chandan, M.C., Nimish, G., Bharath, H.A., 2019. Analysing Spatial Patterns and Trend of Future Urban Expansion Using SLEUTH, Spatial Information Research
- viii. Bharath, H.A., Chandan, M.C., Vinay, S., Ramachandra, T.V., 2018. Modelling urban dynamics in rapidly urbanising Indian cities, The Egyptian Journal of Remote Sensing and Space Science, 21(3), pp. 201-210.



Projects

- i. Scenario Based Projections of Future Land Use: A Spatially Explicit Knowledge Base for Climate Resilience, funded by ISIRD, SRIC, IIT Kharagpur
- ii. Spatial Decision Support System for Select Smart Cities in India Using Nature Inspired Techniques funded by Science and Engineering Research Board (SERB), Govt. of India
- iii. Planning Smart Cities: Urban Dynamics and Surface Temperature Extraction Using Hyperspectral Remote Sensing Data funded by Department of Science and Technology (DST), Govt. of West Bengal
- iv. Developing a Spatial Data Infrastructure with Application in Urban Transport, funded by NRDMs, Govt. of India
- v. Developing an Integrated Land Use-transport-emissions Model Utilizing Emerging Big Data Sources for Quantifying Energy and Environmental Impacts of Ridesharing Services, SPARC, Govt. of India



Technical Reports

- i. Ramachandra, T. V., Bharath S., Vinay, S., Asulabha, K. S., Sincy, V., Bharath, H. A., 2020. National Environmental Survey (NES)-Select Districts of India. ENVIS Technical Report 163, Environmental Information System, CES, Indian Institute of Science, Bangalore
- ii. Ramachandra, T. V., Bharath S., Sneha, H., Chandran, M.D.S., Bharath H. A., 2019. Profile of Rivers in Karnataka, ENVIS Technical Report 145, Sahyadri Conservation Series 81, Energy & Wetlands Research Group, CES, Indian Institute of Science, Bangalore
- iii. Bharath, H.A., Arkopal, K.G., Bhargab, M., Ankhi, B., Swati, M., Soumya, K.G., Uday, S., 2018. Roadmap to Develop Urban Observatory in India. Draft report to British Deputy High commission, Kolkata, India

- iv. Uday, S., Bhargab, M., Arkopal, K.G., Bharath, H.A., Ankhi, B., Swati, M., Soumya, K.G., 2018. Legal and Policy Perspectives of Developing Urban Observatory in India. Draft report to British Deputy High commission, Kolkata, India



Books

- i. Bharath, H.A., Ramachandra, T.V. Urban Growth Pattern in India: Spatial Analysis for Sustainable Development. Taylor and Francis
- ii. Bharath, H.A., Ramachandra, T.V., 2017. *Insights of urban dynamics for sustainable design of Smart Cities*, Lap Lambert Academic Publishing, pp. 240.



Awards

- i. Young Engineer Award 2019 by Institution of Engineers
- ii. Indian National Geospatial Award 2019 by ISRS

Dr. Ankhi Banerjee



Conference Paper

- i. Das R., Banerjee A., Identifying the Parameters for Assessment of Child-friendliness in Urban Neighbourhoods in Indian Cities, 49th Annual Conference of the Urban Affairs Association, Los Angeles, US, April 2019. (Accepted/In-Press)
- ii. Priya N. S., Banerjee A., Impact of Tourism on Spatial Growth of Destinations, 7th Annual international Conference on Architecture and Civil Engineering, Singapore, May, 2019 (Accepted/In-Press) .



Journal papers

- i. Priya, Nunna Tagore Sai and Puthuvayi, Bimal and Banerjee, Ankhi, Measuring Urban Resilience in Indian Cities (July 17, 2018). International Conference on Urban Sustainability: Emerging Trends, Themes, Concepts & Practices (ICUS) 2018.
- ii. Paul, Arpan, Mandal, Prerna, Banerjee, Ankhi, Goswami, Arkopal and Sen, Joy. "Factors Effecting Innovation Driven Livability: Case of Kolkata Metropolitan Area". Institute of Town Planners, India Journal, 14 (2): 82 - 89 (2017).
- iii. Bhattacharya, Tanim, Banerjee, Ankhi and Sen, Joy. "Urban Rejuvenation through Techno Art Intervention: A Case of Kolkata". 5th Annual International Conference on Architecture and Civil Engineering (ACE 2017), 8-9 May, Singapore, ISSN 2301-394X, 472 - 477 (2017).
- iv. Paul, Arpan, Banerjee, Ankhi and Sen, Joy. "A policy development framework for inclusive communities to achieve desired livability". 53rd ISOCARP Congress: Smart Communities, Joint Conference ISOCARP-OAPA, October 24-27, 2017, Portland, Oregon USA, ISBN: 978-94-90354-51- 0, 260 - 271 (2017).



Projects

Transit Oriented Development (ToD): Developing an Integrated Housing and Transport Model Awarded under the Scheme for Promotion of Academic and Research Collaboration (SPARC), Ministry of Human Resource Development, Gol, in collaboration with Queen's University, Belfast, UK, 2019

Activities of theSchool

- Offers Interdisciplinary academic programs - Two-year M.Tech, M.S., Ph.D., in Infrastructure Design and Management.
- Offers capsule Programs for Practicing Professionals.
- Undertakes sponsored Research and Consultancy Projects.
- Organises workshops and seminars on specific issues related to Infrastructure Design and Management.
- Conducts short-duration training programmes for Government and private organizations in efficiently designing and managing infrastructure projects.

List of Ph.D.Scholars

Ph.D (Awarded)

Samadhan Khasaba Bele (2014)

Thesis Title: Telecommunications Infrastructure and Economic Growth G-20 Countries

Ankhi Banerjee (2015)

Thesis Title: An Assessment of Housing Affordability Inclusive of Variations in Infrastructure Development within a Metropolis: Case of Kolkata

Shubhajit Sadhukhan (2017)

Thesis Title: Planning of Transfer Facilities in and Around Metro Stations

Partha Saha (2019)

Thesis Title: An Approach to Development of Web-Based Decision Support System To Enhance Quality and Coverage of Maternal And Child Health-Care Services

Ph.D (Ongoing)

Prashant Prasad

Area of Research: Improvement of Safety of School Trips and Traffic Management around Schools in Urban Areas

Roshan Jose

Area of Research: A Methodology for Detecting Traffic incident And Accident on Arterial Urban Highways

Annam Sai Kiran

Area of Research: Design and evaluation of composite transportation network in a multimodal system for travel demand

Sunny Bansal

Area of Research: An Assessment of Spatial- Economic Impacts of Airport-Oriented Development (AOD)

Dipanjan Nag

Area of Research: Performance evaluation of urban pedestrian infrastructure networks

Mouli Majumdar

Area of Research: Decision support systems for social infrastructure (education) Design Strategies

Suparna Dasgupta

Area of Research: A Methodology to Augment Street and Pedestrian Interface Infrastructure for Transit- oriented Development

Sudeshna Manna

Area of Research: A System Approach to Increase the Rapidity and Efficiency of the Air Cargo Movement.

Tanima Bhattacharya

Area of Research: A study to Augment Infrastructure Design Implementing Techno Art Design Parameters

Kuldeep Kavta

Area of Research: Transportation Economics; Travel Demand Management

Tanaya Sarmah

Area of Research: Critical Infrastructure Protection in Disaster Prone Area

Shivangi Singh Parmar

Area of Research: An Approach to assess MSME Resilience based on the Clustering linkages

Chandan M C

Area of Research: Urban Growth Modeling for Infrastructure Management

Amit Kumar Jaglan

Area of Research: Development of Solid waste Management in Educational campus

Priyanka Das

Area of Research: Transport Infrastructure

Rituparna Das

Area of Research: Framework for neighborhood child friendliness

Nimish Gupta

Area of Research: Urban Land Surface Temperature Modeling

Prakash P S

Area of Research: Urban structure extraction using soft computing techniques

Nunna Tagore Sai Priya

Area of Research: Community and regional planning

Aishwarya Narendr

Area of Research: Disaster management

Vikas Nimesh

Area of Research: Electric vehicle implications on energy and environment.

Manoj B S

Area of Research: Measuring impacts of travel demand management strategies

Md Saddam Hussain

Area of Research: Safety assessment of non-motorized transport modes

Tushar Kanti Saha

Area of Research: An approach to formulate street art-driven social infrastructure design and management in Metro Cities

Radhika Chatterjee

Area of Research: Air Pollution and Impacts

Ram Thilak

Area of Research: Machine learning in infrastructure development.

Dhritee Diksha Baroowa

Area of Research: Transportation Infrastructure

Eeshan Bhaduri

Area of Research: Measuring the effectiveness of information and communication technologies on improving urban mobility

Pulok Ranjan Mohanta

Area of Research: IOT and Digital Supply Chain

Tanushree Garai

Area of Research: Transport Management

Suman Ganguly

Area of Research: Traffic and Transportation Engineering

Lopamudra Sengupta

Area of Research: Cement, Pozzollona & cement additive.

Tazyeen Alam

Area of Research: Transformation of Urban Morphology

M.S (Ongoing)

Ranjana Kumari

Area of Research: Transportation and Environment

Archita Chakraborty

Area of Research: Infrastructure Management

Animesh Bhowmik

Area of Research: Transport Planning and Policy

- Sustainable Infrastructure Planning
- Energy management in infrastructure Project management
- Social infrastructure: Education and Health
- Framework for urban services delivery
- Urban infrastructure
- Recreational and Tourism infrastructure
- Eco-industrial infrastructure
- Municipal infrastructure
- Power infrastructure
- Transportinfrastructure
- Infrastructure risk management
- Infrastructure finance
- Organizational management
- Rural-urban contiguity infrastructure
- Infrastructure Insurance
- Disaster Management

The students are exposed to direct input from the practical fields related to Infrastructure, Planning and Management, with regular lectures offered by visiting faculty and professionals. The school has state-of-the-art laboratory supported with latest software on Simulation, Project management, Road planning, 3D animation.

Infrastructure is my greatest priority in India. And, I also want to set up a special purpose facility in India to finance infrastructure projects in our region that enhances our connectivity and trade

Shri Narendra Modi
Honorable Prime Minister of India

ThrustAreas

The two-year M. Tech programme has been designed with focus on planning, management, and effective delivery of large robust infrastructure projects in areas such as Transportation, Power, Utility Infrastructure and infrastructure facilities. The programme is multi-disciplinary in nature having architecture and different engineering degree being eligible for admission. Faculty members of different departments, schools and centres participate in the teaching and research activities of this programme

Publications by Research Scholar

Conference Presentations

- Nag, D., Goswami, A.K., Sen, J. (2020, Jan) *Selection of Attributes for Pedestrian Level of Service Measures: A Screening Tool*. Paper to be presented at the 99th Annual Meeting of the Transport Research Board 2020, Washington DC, USA.
- Nag D., Goswami A.K., Sen, J. (2019). *Assessing connectivity of an urban pedestrian networks: A case of Varanasi, India*. Paper presented at the 49th Annual Urban Affairs Association Conference 2019 Los Angeles, USA.
- Chandan, M. C., Aadithyaa, J. S., Prakash, P. S., & Bharath, H. A. (2019). Machine Learning for Building Extraction and Integration of Particle Swarm Optimization with Sleuth for Urban Growth Pattern Visualisation for Livable Cities. Paper presented at 55th ISOCARP World Planning Congress, Jakarta-Bogor, Indonesia: 9-13 September, 2019.
- Chandan, M. C., & Bharath, H. A. (2019). Quantitative Measurement, Analysis of Land Use Change through Spatial-Temporal Pattern and Modelling. Paper presented at 16th International Conference on Computers in Urban Planning and Urban Management, Wuhan, China
- Sarmah, T. & Das, S. (2019). The state-of-the-art review of vulnerability indices: With a special focus on urban flood. Presented at the 2nd World Bosai Forum (WBF)/ International Disaster and Risk Conference (IDRC), Sendai, Japan.
- Sarmah, T. & Das, S. (2019). Determining urban flood vulnerability using an indicator based approach. Presented at the 55th International Society of City and Regional Planners (ISOCARP) World Planning Congress, Jakarta-Bogor, Indonesia. (PP: 1847-1856; ISBN: 978-90-7552-462-8)
- Sarmah, T. & Das, S. (2019). Linking hazards of landslide and urban flood in North-East Himalayan region. Presented at the 4th World Congress on Disaster Management (WCDM), Mumbai, India. (ISBN: 978-93-5346-919-1)
- Nag D., Goswami A.K., Sen, J. (2019, Jan). *Measuring users' perception of urban pedestrian infrastructure networks: A conjoint analysis approach*. Paper presented at the 98th Annual Meeting of the Transport Research Board 2019, Washington DC, USA.
- Annam, S. K., Basu D., Maitra, B. (2019). *Does selection of link influence the O-D matrix estimation from link counts? An experience in Bhubaneswar City*. 15th World Conference on Transport Research, Mumbai, India, May 25-31, 2019.
- Annam, S. K., Basu D., Maitra, B. (2019). *Competing verses complementary operations of common carrier modes: A case study of Bhubaneswar city*. 49th Annual Conference of Urban Affairs Association, Los Angeles, USA, April 24 – 27, 2019
- Bhattacharya T, Sen J. (2019). An attempt to assess the need and potential of aesthetic regeneration to improve walkability and ergonomic experience of urban space 6th International Conference on Architecture, Presented at Sustainable Urban Planning and Infrastructure (AHFE) in Washington D.C., U.S.A, from 24th to 28th July 2019.
- Bhattacharya T., Sen J., (2019). *Revisiting the Pan-Asian ideology to propagate an alternate perspective of urban design syntax* presented on the conference of Contours of Act East Policy: Opportunities, Challenges and Futuristic Trends of Indo-ASEAN Partnership", February 18-19, 2019 (In Press).
- Bhattacharya T., Sen J., (2019). An exploration of symbols in Indian Architecture based on the triad of syntax, semantics, and semiotics: Case study of chosen built elements, artefacts, seals and petroglyphs' presented at the Inaugural Conference on Indic Chronology, February 22 – 24, 2019 – New Delhi, India (In Press)
- Bhattacharya T., Sen J., (2019). Art in Urban Design and Rejuvenation of Public Spaces presented at CIHA International Colloquium on Art, Design and Society organized by The National Museum Institute (NMI) in collaboration with the Comité International d'Histoire de l'Art (CIHA) (In Press)
- Bansal S & Sen J, (2019). Network Assessment of Indian Tier – II cities' airports in terms of type, accessibility, and connectivity. World Conference on Transport Research - WCTR 2019, Mumbai, India.
- Nimesh, V., Kumari, R., Reddy, V.M., Goswami, A.K. (2019). *"Assessment of Emission Implications of Introducing Electric Vehicles in India on the Non-Renewable Energy Sector"*, Paper presented at Conference of Transportation Group of India (CTRG), Bhopal, 17-21 December 2019
- Das, R., Banerjee, A. (2019). Identifying the parameters for assessment of Child-Friendliness in Urban Neighbourhoods in Indian Cities . 49th Annual Conference of Urban Affairs Association, Los Angeles, USA, April 24 – 27, 2019.
- Prakash, P.S., & Bharath., H.A., (2019). Automatic extraction of building features from UAV using artificial neural networks. In proceedings of 1st International Conference on Unmanned Aerial System in Geomatics - 2019, April 2019, IIT Roorkee Delhi, India.
- Priya N. S., Banerjee A. (2019, May). Impact of Tourism on Spatial Growth of Destinations. paper presented at 7th Annual international Conference on Architecture and Civil Engineering (ACE 2019)
- Prakash, P. S., Soumya, K. D., & Bharath, H. A. (2018). Urban building extraction using satellite imagery through Machine Learning. In 2018 IEEE Symposium Series on Computational Intelligence (SSCI). December 2018, Bangalore
- Priya, N.T.S., Puthuvayi, B. and Banerjee, A. (2018, March). Measuring Urban Resilience in Indian Cities. Paper presented at International Conference on Urban Sustainability: Emerging Trends, Themes, Concepts & Practices (ICUS, 2018).
- Nimish, G., Chandan, M.C., & Bharath., H.A. (2018, November). Understanding Current and Future Land use Dynamics with Land Surface Temperature Alterations: A Case Study of Chandigarh. Paper presented at ISPRS technical commission V Education & outreach Geospatial technology - pixel

to people- ISPRS annals, Dehradun, India.

- “A study on microbial concrete for rigid pavement design”, ADVANCES IN CONSTRUCTION MATERIALS AND STRUCTURES”, IIT ROORKEE-2018
- Nimish, G., Shafia, A., Chandan, M. C. & Bharath, H. A. (2017, November). *Monitoring land use/cover change and Land surface temperature*. Paper presented at Regional Science and Technology Congress 2017 (Western Region), Bardhaman, India.
- Bansal S, Goswami AK, & Sen J, (2017). Globally Integrated Urban Network Management based on Airport-oriented Development (AOD) - evaluation of concept and strategic model: A case of Varanasi, India. Annual Conference of Europe Urban Research Association (EURA), University of Warsaw, Poland.
- Sarmah, T. & Das, S. (2017). Urban flood disaster assessment for Guwahati city. Presented at International Symposium on Water Urbanism and Infrastructure Development in Eco-Sensitive Zones (WIEZ), Kolkata, India.
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- Bharath, H.A., Chandan, M. C., & Nimish, G. (2019). Assessing land surface temperature and land use change through spatio-temporal analysis: A case study of select major cities of India. *Arabian Journal of Geosciences*, 12(11). <https://doi.org/10.1007/s12517-019-4547-1> Impact Factor: 0.86
- Tanima Bhattacharya & Joy Sen, *Elements of Design of Public Spaces – Case Studies*, Muse India: The Literary eJournal, Issue 87 (Sep-Oct 2019), ISSN: 0975-1815
- Sarmah, T. & Das, S. (2018). Urban flood mitigation planning for Guwahati: A case of Bharalu basin, *Journal of Environmental Management*, 206, 1155-1165, doi: 10.1016/j.jenvman.2017.10.079
- Sarmah, T. & Das, S. (2018). Earthquake vulnerability assessment for Guwahati city using Rapid Visual Screening, *Elsevier Procedia Engineering*, 212, 214-221,
- Bansal, S., & Sen, J. (2018). Airport-oriented development (AOD) - a potential source of adhesion and driver of growth in making more efficient urban-rural systems. *Proceedings of the 12th World Congress of the RSAI*. pp. 1604-1612 (ISBN 978-98-95421-60-2)
- Bhattacharya T, Sen J, 2017, An Exploration of Design: Based on Pan-Asian Semiotics and Semantics, ICoRD '17, Research into Design for Communities, Springer publications, Volume 2, ICORD pp. 751–762. 2017
- Bharath, H. A., Chandan, M. C., Vinay, S., & Ramachandra, T. V. (2018). Modelling urban

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- Singh, N., Bansal, S., & Goswami, A. K. (2017). Assessment of Service Quality Related to Accessibility and Infrastructural Amenities at Kharagpur Railway Station. *International Journal on Emerging Technologies*. 8 (1) pp. 70-75 (ISSN 92249-3255)
- Partha Saha (with Prof. U.K. Banerjee) 'Finding influential healthcare interventions of different socioeconomically and educationally segmented regions by using data mining techniques: case study on nine high focus states of India'. *International Journal of Data Mining Techniques and Application*. (Under review)
- Partha Saha (with Prof. U.K. Banerjee) 'Design of a knowledge discovery based decision support system for maternal and child health system strengthening': Inclusion of systems thinking approach. *Health Informatics Journal*. (Under review)
- Tanima Bhattacharya (with Prof. J. Sen) 'An Exploration of Design: Based on Pan-Asian Semiotics and Semantics', ICoRD '17. (In press)



Awards, Laurels and Recognition

- Best Paper Award at “Transportation Infrastructure Projects – Conception to Execution” (TIPCE 2019), IIT Roorkee. – *Received by Md Saddam Hussain*
- Best Paper Award at International Conference on Smart Cities: Opportunities & Challenges held at Jamia Millia

Islamia, Delhi, India from March 14-16, 2019.- *Received by Nimish Gupta*

- “Sahyadri Ecologist Award” for research paper presentation co-authored by Dr. Bharath H. A. in LAKE Conference, Moodbidri, Organised by CES, Indian Institute of Science, Bangalore and Alva's institute of engineering and technology, during 22-25 November, 2018. – *Received by Chandan MC*
- Best Presentation Award for the paper “Location choice analysis for transit oriented development (TOD): A case study of Kolkata” organised by ESRI in Kolkata, September 2018- *Received by Kuldeep Kavta and Manoj BS*
- Best Poster Award—December 2017, at the 4th Conference of Transport Research Group (CTRG) held at IIT Bombay- *Received by Dipanjan Nag*
- Best Paper Award for "Urban flood disaster assessment for Guwahati city" in International Symposium on Water Urbanism and Infrastructure Development in Eco-Sensitive Zones, Kolkata, 6-7 January, 2017- *Received by Tanaya Sarmah*
- “Best Paper Award” in the International Symposium on Water Urbanism and Infrastructure Development in Eco-Sensitive Zones, held on 6-7 January 2017, Kolkata. – *Received by Chandan MC*

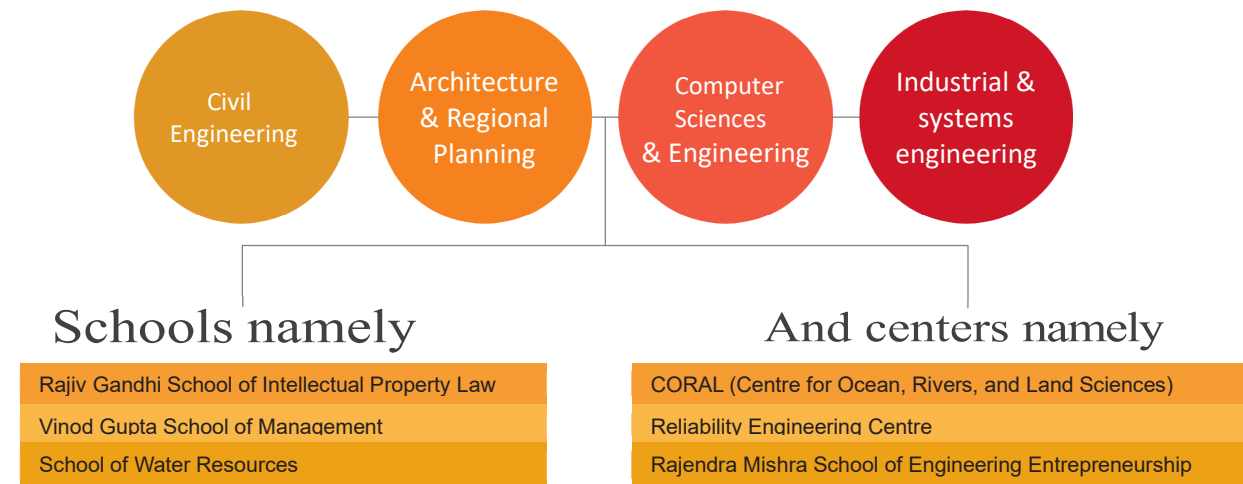
Book Chapter

- Bharath, H. A., Nimish, G., Chandan, M. C. (In Press). Exposition of spatial urban growth pattern and its effects on surface temperature. In Raghubanshi, A. S. (Ed), Urban Ecology. Netherlands, Elsevier.
- Nimish, G., Bharath H. A., & Ramachandra, T. V. (In Press). Current Trends in Estimation of Land Surface Temperature using Passive Remote Sensing data. In Bharath, H. A. (Ed.), Urban Growth Patterns in India: Spatial Analysis for Sustainable Development. United Kingdom: Taylor and Francis.
- Nimish, G., Bharath H. A., & Ramachandra, T. V. (In Press). Quantification of Greenhouse Gas footprint and Exploring its Trend Capital of India – Delhi. In Bharath, H. A. (Ed.), Urban Growth Patterns in India: Spatial Analysis for Sustainable Development. United Kingdom: Taylor and Francis.
- Bharath, H. A., Chandan, M. C., Nimish, G., Prakash, P. S., & Ramachandra, T. V. (Accepted). Urbanisation its pattern, effects and Modelling. In Bandyopadhyay, M. (Ed.), Urban Spatial Data Handling and Computing. US: IGI Global.
- Chandan, M. C., Nimish, G., & Bharath, H. A. (In Press). Analyzsing and predicting urban expansion and its effects on surface temperature for two Indian megacities: Bengaluru and Chennai. In Sharma, P. (Ed.), Geo Spatial Technology and Smart City Development. Switzerland: Springer.
- Kavta K., Adhvaryu B. (2020) Walking and Bicycling to School—Understanding the Impact of Socio-economic Factors and Built Environment. In: Mathew T., Joshi G., Velaga N., Arkatkar S. (eds) Transportation Research. Lecture Notes in Civil Engineering, vol 45. Springer, Singapore
- Aishwarya, N., Bharath, H. A., & Ramachandra, T. V. (2020). Mitigation of Disasters and Flooding in Indian Cities. In Bharath, H. A. (Ed.), Urban growth pattern in India: spatial analysis for sustainable development. United Kingdom: Taylor & Francis.(*In press*)
- Bharath, H. A., Chandan, M. C., Vinay S., & Ramachandra, T. V., Urbanization in India: Patterns, Visualization of Cities, and Greenhouse Gas Inventory for Developing an Urban Observatory. In: Weng, Q., Quattrochi, D. & Gamba, P. (eds) Urban remote sensing, second edition. Boca Raton, FL: CRC Press: 151-171.
- Sunny Bansal (with Prof. J. Sen and others) is a co-author of a book chapter titled '*Kolkata – A Metropolis under change*' to be published in a book called South Asian Cities in the 21st Century (1st ed.) edited by Stephen Hamnett, Dinesh Mehta and Meera Mehta and to be published by Routledge an imprint of Taylor & Francis UK in 2017
- Tanima Bhattacharya (with Prof. J. Sen) '*Chaitya Purusha or The Principle of Sentiency as Anthropic evolutionary Consciousness-Integration of Eastern and Western paradigms; Consciousness: Integrating Eastern and Western Perspectives*': DEI, Dayalbagh
- Kuldeep Kavta (with P.K. Yadav) '*Indian smart cities and their financing: A first look, Poverty, Inequality to Smart City*', Springer Transactions in Civil and Environmental Engineering. Chapter9.

Projects

Sponsored Research & Industrial Consultancy

The School apart from its Core / Joint Faculty draws significant inputs from Faculty from the following departments of the institute provide academic and technical support to the programme



Across these Departments, Schools and Centers, the faculty are engaged in a diverse and rich spectrum of Industrial Research driven Consultancy Projects.

Current Sponsored Projects

The school is closely interlinked with two major 'Mega projects' sponsored by the Ministry of Human Resources Development (MHRD), Government of India namely:

FUTURE OF CITIES

Principal Investigator:
Prof. Bhargab Maitra & Prof. Joy Sen



SANDHI

Creative Economy and Urban Engineering Revivals Projects under 'SandHI' – a Science Heritage Interface Initiative

Principal Investigator: Prof. Joy Sen



Varanasi 08 MICRO PHASE II PROJECTS in collaboration with IIT BHU and Varanasi Nigam (2016-18)

Principle Investigator: Prof. Joy Sen

IMPRINT

(Sustainable habitat Domain): 2016 - 19: Transformative Design Processes for integrating Traditional Habitat and Smart Infrastructure Systems: Case of Peri-urban areas in Varanasi, Bhubaneswar and Vishakhapatnam, INDIA



Principle Investigator: Prof. Joy Sen

Collateral Project: Creative economy with Calcutta Center of International Art (CIMA) and CREDAI (2016 - 2018) [SandHI Phase II]

Principle Investigator: Prof. Joy Sen

An MHRD, GoI initiative, Uchhatar Avishkar Yojana (UAY)

Principle Investigator: Arkopal Kishore Goswami

- UAY aims to bridge the gap between Academics and the practical working skills with Academia - Industry interface
- "Smart & Integrated Pedestrian Network Design" proposal submitted by RCGSIDM was accepted and will be funded under this scheme.
- "Smart & Integrated Pedestrian Network Design" will be a collaborative project by Curtin University, Australia; IIT-BHU Varanasi; IIT Kharagpur; Nikken Sekkei Research Institute, Japan; GMR Group, India.



RECENT PROJECTS (2017 - 2019)

- Smart & Integrated Pedestrian System Design, **UAY, MHRD, Govt. of India**
- Assessment of emissions from thermal power plants due to energy demand from electric vehicles: Policy recommendations for renewable energy integration, **IMPRESS, MHRD, Govt. of India**
- Developing a Spatial Data Infrastructure with Application in Urban Transport, **NRDMS, DST, Govt. of India**
- Developing a Performance Based Asset Management Model to Forecast Roadway Infrastructure Preservation Needs in India, **ISIRD, SRIC, IIT Kharagpur**
- Scenario Based Projections of Future Land Use: A Spatially Explicit Knowledge Base for Climate Resilience, **ISIRD, SRIC, IIT Kharagpur**
- Spatial Decision Support System for Select Smart Cities in India Using Nature Inspired Techniques, Young Scientist Scheme, **SERB, Govt. of India**
- Development of Index and Measurement of Happiness at New Town, Kolkata, **MHRD, Govt. of India**
- Developing an integrated land use - transport - emissions model utilizing emerging big data sources for quantifying the energy and environmental impacts of ridesharing services, **SPARC, MHRD, Govt. of India**
- Transit Oriented Development (TOD): Developing an Integrated Housing and Transport Model, **SPARC, MHRD, Govt. of India**
- Segmentation and Design of Bus Services in Urban India: Kolkata as a Pilot Study, **MHRD/IIT Kharagpur, Govt. of India**
- Improvement of Safety of School Trips and Traffic Management around Schools in Urban Areas: Kolkata as a Pilot Study, **MHRD/IIT Kharagpur, Govt. of India**
- Design and Evaluation of Composite Networks in a Multimodal System for Travel Demand Management in Urban Areas, **MHRD/IIT Kharagpur, Govt. of India**
- Safety Consultancy Services for Six Laning of Dankuni-Kharagpur Section of NH-6 from Km 17.6 to Km 129 in West Bengal, **NHAI, Govt. of India**
- Evaluation of Passive Bus Priority Techniques with Queue Jump Lane and Development of Guidelines for Its Implementation in Indian Scenario, **SERB, Govt. of India**
- Road Safety Audit on Five (5) State Highways in the State of West Bengal, **PWD, Govt. of West Bengal**

New School Premise



School Activities 2019

EVENT: Short Term Course – “Infrastructure and Informality”.

DATE: 5 – 13 December 2019

FACULTY: Dr. Sytse de Maat, author of The Perfect Slum, On the Symbiosis of People and Building (2016) PhD (EPFL, Switzerland), Adviser, design studios, GSAPP of Columbia University New York City shall oversee.



EVENT: GIAN Course – From Infrastructure Creation to Rehabilitation: Redefining the Role of Engineers .

DATE: 2 – 4 September 2019

FACULTY:

- Prof. Abhijit Mukherjee, Professor of Civil Engineering in Curtin University, Australia and Director, Curtin-India Research Academy
- Dr. Mangesh Joshi, Ph.D. from IIT Bombay and founder CEO of M/s Sanrachana Structural Strengthening Pvt. Ltd, Mumbai.

- Dr. Swati Maitra, Asst. Professor, RCGSIDM
- Prof. Nirjhar Dhang, Professor and Head, Civil Engineering



EVENT: Symposium on "Infrastructure Development and Management for Future Cities" The Park Hotel, Kolkata.

DATE: 17-18 April 2019

Organized by RCGSIDM, many eminent Speakers and personalities from various fields were invited to grace the occasion.



EVENT: GIAN Course - *Space is the Machine: Space Syntax Methodology*

DATE: 12-16 November 2018

FACULTY:

- Dr. Anirban Adhya, Associate Professor of Lawrence Technological University, USA.
- Prof Ankhi Banerjee, Asst. Professor, RCGSIDM
- Prof. Arkopal Kishore Goswami, Asst. Professor, RCGSIDM.



EVENT: GIAN course on "Information Technology Applications in Transportation Planning & Management"

DATE: 4-9 March 2019



EVENT: GIAN Course - "Smart Urban Multimodal Transport Planning, Operations and Management".

DATE: 8-12 July 2019

FACULTY:

- Prof. Brian Park, Asst. Professor University of Virginia, Department of Engineering Systems and Environment.
- Prof. Bhargab Maitra, Professor and Head, RCGSIDM
- Prof. Arkopal Kishore Goswami, Asst. Professor, RCGSIDM.



EVENT: AICTE sponsored course on “Remote Sensing GIS and Image processing using FOSS for urban planning”

DATE: 11-15 March 2019



EVENT: Freshers 2019- MTech batch

A Themed party "cosplay" was organized by the now research scholars to welcome their juniors.

DATE: July 2019



EVENT: 65th Annual Convocation 2019.

Ranbir and Chitra Gupta School of Infrastructure design and management M. Tech batch 2017-19, students being awarded their degree.

DATE: August 2019



EVENT: Farewell 2017-19 M.Tech batch.

Farewell party was organised by the now M.Tech 2nd year batch as they bid adieu to their seniors.

DATE: May 2019



EVENT: Teacher's day Our school celebrated with sweets and gifts to thank and remember every bit of contribution our teachers have made in our lives.

DATE: September 2019



EVENT: Vishwakarma puja.

The Divine Architect was worshipped by all in the school premises.

DATE: September 2019



EVENT: A new state of art lab infrastructure sensing and monitoring lab at Ranbir and Chitra Gupta School of Infrastructure Design and Management (RCGSIDM) under the leadership of Prof. Bhargab Maitra. Video wall and various sensors being installed

DATE: December 2019



EVENT: International Workshop - OUROBOROS 2019

Research scholars of RCGSIDM attended the international workshop OUROBOROS 2019: Prototyping the future international workshop at National Yunlin University of Science and Technology, Taiwan.

Manoj BS, Vikas Nimesh, Aishwarya Narendra, Dhriti Diksha Baroowa, Pidathala Vaishnav

DATE: August, 2019



Faculty Events

EVENT: Guest Lecture at NIT Jamshedpur.

Prof. Arkopal Goswami, Asst. Professor, RCGSIDM invited for guest Lecture on ‘Sustainability in Transportation’ at NIT Jamshedpur.

DATE: 8 November,2019



EVENT: IEI Young Engineers Award 2019-20.

Dr. Bharath Aithal, Asst. Professor, RCGSIDM awarded "IEI Young Engineers Award 2019-20" in Electrical Engineering discipline from Institution of Engineers at 35th National Convention of Electrical Engineers , Chennai .

DATE: November, 2019



EVENT: 15th International Doctoral Seminar, Japan

Prof. Maitra and 3 member RS team presented their researches at International Doctoral Seminar on Transport Planning and Traffic Engineering in Nagoya Conf Japan.

DATE: 20 November, 2019

EVENT: Expert interview in DD7 program.

Prof. Bhargab Maitra, Head, RCGSIDM a leading traffic-transportation expert presented his frontline views, opinions and positive arguments on Mobility improvement in a premium DD7 program ' MUSKILL ASHAN'.

DATE: 21 November,2019



EVENT: Indian national Geospatial Award 2019-20.

Dr. Bharath Aithal, faculty of Ranbir and Chitra Gupta School Of Infrastructure design and management awarded Indian national Geospatial award from Indian society of Remote Sensing.

DATE: 20 November, 2019



EVENT: Green Skill Development program – ENVIS.

Dr. Bharath, Presented expert lectures in the Green Skill Development program at Indian Institute of Science, Bangalore .The program was organized under ENVIS through MoEF

DATE: 1-15 January,2019



EVENT: Visit of Prof. Bhargab Maitra and Prof. S.K Ghosh to National Yunlin University of Science and Technology.

DATE: April 2019



Subject Code	Name of Subject	Dept.	L-T-P	L-T-P
First Semester				
ID60001	Project Engineering and Management	ISE	3-1-0	4
ID60003	Financing Infrastructure Projects	ID	3-1-0	4
ID60005	Quantitative Methods for Decesion Making	ISE	3-1-0	4
	Elective-I			3/4
	Elective-II			3/4
ID60001	Simulation Laboratory	ID	0-0-3	2
ID60003	Seminar-I	ID	0-0-3	2
	Sub Total			22/24

Subject Code	Name of Subject	Dept.	L-T-P	L-T-P
Third Semester				
ID67001	Project-I	ID		20
	Sub Total			20

Subject Code	Name of Subject	Dept.	L-T-P	L-T-P
Second Semester				
CE60078	Environmental Impact Assessment	CE	3-1-0	4
ID60002	Infrastructure Regulatory Issues	ID	3-1-0	4
	Elective-III			3/4
	Elective-IV			3/4
	Elective-V			3/4
ID69002	Project Manager Laboratory	ID	0-0-3	2
ID69004	Virtual Reality Laboratory	ID	0-0-3	2
ID69006	Seminar-II	ID	0-0-3	2
ID68002	Comprehensive viva-voce	ID		3
	Sub Total			26/29

Subject Code	Name of Subject	Dept.	L-T-P	L-T-P
Fourth Semester				
ID67002	Project-II	ID		20
	Sub Total			20

Odd/Even Sem.	Subject Code	Vertical Groups	Dept	L-T-P	Credit
		Group I (Transportation)			
1	CE60013	Urban Transportation System Planning	CE	4-0-0	4
1	CE60061	Airport Planning & Design	CE	3-0-0	3
1	ID60007	Bridges and Tunnels Engineering	CE	3-0-0	3
2	CE60012	Analysis and Design of	CE	4-0-0	4
2	CE60014	Traffic Engineering	CE	4-0-0	4
2	CE60066	Analysis and Evaluation of Transportation Systems	CE	3-0-0	3
2	CE60068	Highway Construction Practice	CE	3-0-0	3
2	ID60004	Planning, Operation and Management of Transportation Facilities	ID	3-0-0	3

		Group II (Public Utilities)			
1	CE60021	Water Supply System	CE	4-0-0	4
1	CE60023	Waste Water management	CE	4-0-0	4
1	CE60097	Solid Waste Management	CE	3-0-0	3
2	CE60022	Air Quality Management	CE	4-0-0	4
2	CE60074	Environment Sanitation	CE	3-0-0	3
2	CE60076	Hazardous Waste Management	CE	3-0-0	3

		Group III (Facilities Infrastructure)			
1	AR60003	Transportation Planning and Traffic Engineering	ARP	3-0-0	3
1	AR60005	Housing and Community Planning	ARP	3-0-0	3
1	ID60011	Facility Programming & Specializes Building	ID	3-0-0	3
2	ID60008	Building Management Systems	ID	3-0-0	3
2	AR60008	Regional Analysis and Programming	ARP	3-0-0	3
2	AR60010	Environmental Planning	ARP	3-0-0	3
2	AR60022	Remote Sensing and GIS Planning	ARP	3-0-0	3

		Group IV (Power Systems)			
1	ID60013	Thermal, Hydel and Nuclear Power Generation	ME	3-0-0	3
1	ID60015	Power Infrastructure: Generation, Transmission and Distribution	EE	3-0-0	3
1	ME60111	Internal Combustion Engine	ME	3-1-0	4
1	EE60021	Power Transmission Systems	EE	3-0-0	3
1	EE60049	Non-conventional Electrical Energy Systems	EE	3-0-0	3
1	EE60053	High Voltage and Insulation Engineering	EE	3-0-0	3
2	ID60012	Power Infrastructure: Economics, Management and Environment	EE/ME	3-0-0	3
2	ID60014	Power System Planning and Reliability	EE	3-0-0	3
2	ME60096	Air-conditioning and Ventilation	ME	3-1-0	4
2	EE60022	Power Systems Transients and Protection	EE	3-1-0	4
2	EE60058	Opto-electronics based instrumentation	EE	3-0-0	3
2	EE60068	Artificial Intelligence applications to Power Systems	EE	3-0-0	3
New Electives					
		Environmental and Natural Resources driven Infrastructure Management	ID	3-0-0	3
		Remote Sensing, GIS and Image processing in urban infrastructure management	ID	3-1-0	4

Note: 1. Elective of G-I and G-II groups can be taken by Civil Engineering Graduates. Electives of G-iii are for students with B.Arch. G-iv electives are available for students with graduation in Electrical or Mechanical Engineering.

2. The students are expected to take at least three subjects in particular group of electives (vertical groups). They can Select any other relevant senate approved subjects for remaining two electives.

Our Recruiters



The Team

Research Scholar



Prashant Prasad



Sunny Bansal



Roshan Jose



Kuldeep Kavta



Dipanjan Nag



Manoj B S



Saddam Hussain



Eeshan Bhaduri



Nunna T Sai Priya



Radhika Chatterjee



Mouli Majumdar



Suparna Dasgupta



Shivangi S Parmer



Tanima B



Annam Sai Kumar



Nimish Gupta



Tushar Kanti Saha



Vikas Nimesh



Prakash P S



Aishwarya Narendr



Chandan M C



Amit Kumar Jaglan



Priyanka Das



Tanaya Sarmah



Rituparna Das



Ram Thilak



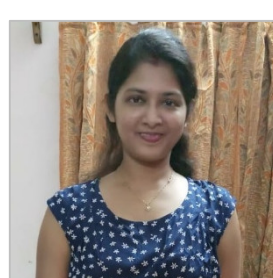
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Dhritree D Baroowa

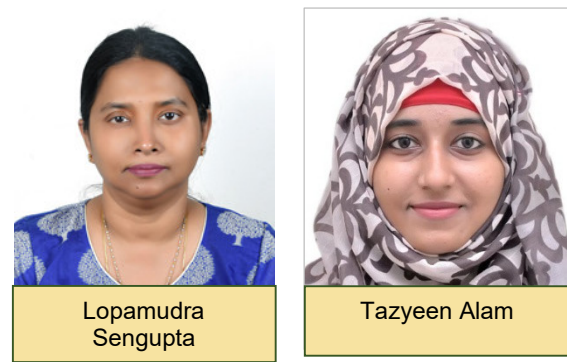


Suman Ganguly

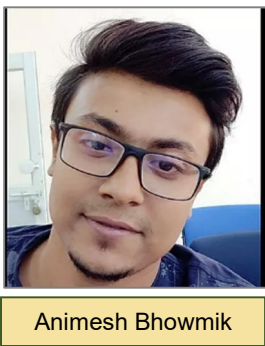


Tanushree Garai

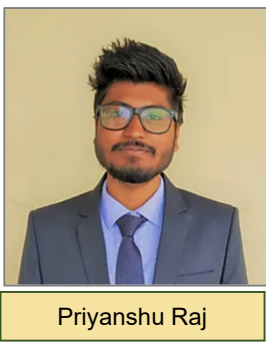
Research Scholar



M.S. Students



M. Tech 2nd year



M.Tech 1st year



Chodnekar Haresh



Parul Sharma



Bibekananda B



Nishant Raj Tonk



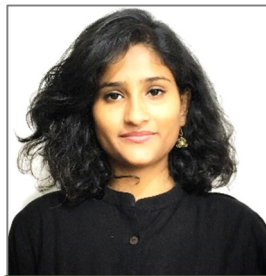
Siddhant Asati



Swapnil V Shende



Amruta Nagpure



Shikha kanojia



Bhavesh S C



D Murali Krishna



Kumar Sunny



Manisha Rampally



S Akhil Chauhan



Lakshay Singhal



Vishal K Singh



Mohit Verma



Harshada V Chavan



Arigela Pavan K



Himadhar Thumma



Amit Kumar Singh



Akshay Bhandral