MoUs

175 years of Excellence in Civil Engineering Education

DEPARTMENT OF CIVIL ENGINEERING

A RESEARCH HUB

INDIAN INSTITUTE OF TECHNOLOGY ROORKEE

ROORKEE -247 667 (UTTARAKHAND) INDIA

Website : https://civil.iitr.ac.in

DEPARTMENTAL STATISTICS	
Faculty	53
Staff	60
STUDENTS	
Ph.D.	295
M.Tech.	231
B.Tech.	636

For More Information
Kindly Visit: https://civil.iitr.ac.in

DEPARTMENT OF CIVIL ENGINEERING
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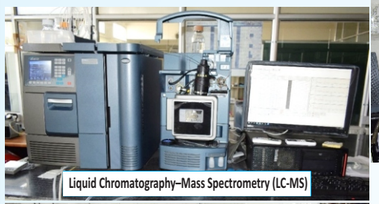
THRUST AREAS

ENVIRONMENTAL ENGINEERING

* Decentralized Solid Waste Management : High Rate Rotary Drum Composting, Biodrying Decentralized Waste Treatment: Innovative Toilet with Black Soldier Fly (BSF) Larvae
* Megacities Air Pollution and Regional Impacts, Sustainability Assessment
* Arsenic & Fluoride Removal from Drinking Water
* Advanced Oxidation Process for Trace Organics removal and Industrial Waste water treatment
* Advanced Wastewater Treatment & Reuse: Advanced on-site treatment, Vermifiltration, Process Optimization, Algae based treatment

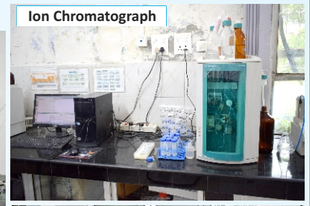

Rotary Drum Composter


Liquid Chromatography–Mass Spectrometry (LC-MS)


Total Organic Carbon (TOC) Analyzer


TOC Analyzer with Add on Nitrogen


Atomic Absorption Spectroscopy (AAS)


Ion Chromatograph


GCMS

GEOMATICS ENGINEERING

* Big Data Analytics
* Artificial Intelligence and Machine learning techniques
* 3D Models and Virtual Reality (VR)
* Urban Design/ Smart Cities
* Natural Disasters and Automatic Warning System
* Environment and Climatic Change
* UAV/LiDAR based applications


Gravimeter


A-8 Autograph


UAV Kombell Systems


Unmanned Aerial Vehicle (UAV)


Smart Station


Spectro-radiometer


Trimble Robotic Total Station


Trimblev R7 Dual Freq. Rtk Gps

GEOTECHNICAL ENGINEERING

* Rock Mechanics and Rock Engineering
* Tunnels and Underground Structures
* Slopes Stability and Landslide Mitigation
* Ground Improvement
* Pile and Deep Foundations
* Pavement Geotechnics, Reinforced Earth Structures
* Soil Dynamics and Geotechnical-Earthquake Engineering
* Soft Soil Engineering


UTM for Geotextile


Triaxial Test Apparatus


Large Size Direct Shear Test

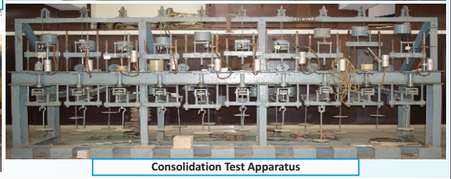

Cyclic cum static rock Triaxial Testing System


Static/Dynamic Triaxial Machine


Polyaxial Machine


Large Size Pull Out Test Apparatus


Shake Table with Laminar Box


Consolidation Test Apparatus

HYDRAULICS ENGINEERING

* Fluvial Hydraulics
* Environmental Hydraulics
* Climate Change
* Ground Water Hydrology and Contaminant Transport
* Irrigation Engineering
* Wind Engineering


Hydraulics Lab


Model Studies for Sainjani Barrage


Micro S(Micro Profilometer Shear Stress Sensor)


Particle Image Velocimetry (PIV)


2D BED PROFILER


Ground Magnetic Resonance (GMR)


Model Studies for Discharge Coefficient of orifice


Hydraulic Engineering Irrigation & Field Laboratory


Model Studies for ORR Dam

STRUCTURAL ENGINEERING

Analysis, Design and Construction of different structures including Buildings, Bridges, high rise structures like Chimneys and other thrust R&D areas are-

- Concrete Technology
- Steel-Concrete Composite
- Fire Engineering
- Structural Health Monitoring
- Recycling of Materials
- Mechanics of Composites

Column Furnace

UTM 2500 kN

Heavy Mass Impact Set-up

2D DIC

Godrej Forklift Truck (Diesel)

Mechanical Universal Testing Machine (MUTM)

TRANSPORTATION ENGINEERING

- Traffic Engineering
- Transportation Planning
- Road Materials & Pavements
- Urban Roads & Highway Safety
- Urban Traffic and Agent based Simulations

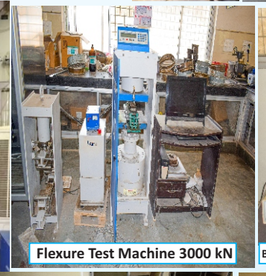
Falling Weight Deflectometer (FWD)

Wheel Tracking Machine

Mercury/Non Mercury Intrusion Porosometer (MIP)

MIRA

CBR with DAQ



Flexure Test Machine 3000 kN

Brookfield Rotational Viscometer

Abrasion Resistance Horizontal Concrete Surface(revolving Disk Type)

Concreate Permeability App

Laboratory on "Durable Construction"

IIT Roorkee-NBCC Joint R&D Centre on "Sustainable Civil Infrastructure"

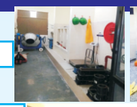
TEST FACILITIES FOR :-

DURABILITY CHARACTERIZATION OF MATERIALS

- Accelerated Carbonation Chamber
- Accelerated Chloride Induced Corrosion Set Up
- Water Permeability Apparatus
- Compression Testing Machine
- Elevated Temperature Furnace
- Universal Testing Machine

IN-SITU DURABILITY EVALUATION OF STRUCTURES

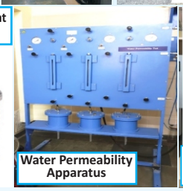
- Radar for Reinforcement Scanning (GPR)
- Corrosion Analyzer
- Ultrasonic Pulse Velocity Test Equipment
- Rebar Locator/Cover meter



Casting Facility

Chemical Test Facility

Radar for Reinforcement Scanning (GPR)



Water Permeability Apparatus

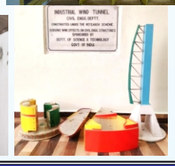
Accelerated Chloride Induced Corrosion Set Up

Accelerated Carbonation Chamber

ATMOSPHERIC BOUNDARY LAYER WIND TUNNEL

The Faculty of Department of Civil Engineering involved in the area of Wind Engineering has been active in research in the following areas:

- Wind Induced Vibrations in Self-Supporting Tall Towers
- Subsonic Wind Effects on Civil Engineering Structures
- Aerodynamic Interference in Tall Buildings
- Aerodynamic Behavior of a Cable Stayed Bridge
- Wind Induced Pressures on Low-rise Buildings
- Wind Pressure Measurements on Hyperbolic Paraboloid Circular Roof Model



TRANSPORTATION STUDIES, ANALYSIS AND RESEARCH LABORATORY

Transportation Studies, Analysis and Research Laboratory has been set up in the Department of Civil Engineering, aiming to facilitate the advanced transport modeling, simulation of urban mobility, agent-based simulation, naturalistic driving, analysis and visualization of real-time air pollution, analysis of vehicular trajectories, profiling of noise in an urban agglomeration, etc. The lab encompasses an HPC Server (2x Intel Xeon Gold 6230 2.1G, 20C, 256GB RAM, 40 TB Hard-drive), many workstations, Automatic Traffic Classified-cum Counter, Radar Gun, VBox (20 Hz), VBox Mini Module and sensors for Naturalistic Driving behavior, Noise Analyzer, Portable Air Pollution Monitors (indoor, outdoor), etc. To analyze, model, and simulate the data, various software tools such as Trazer Suit, NLogit, EMMES, Rail Track, HDM-4, TRL-ARCADY, TRANSYT, CUBE, MATSim, Simunto VIA, etc., are available.

Computer Lab

Server

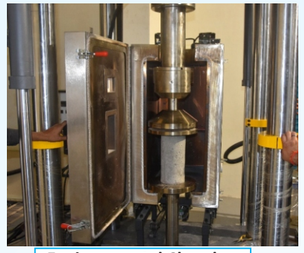
Panasonic Display Touch Screen

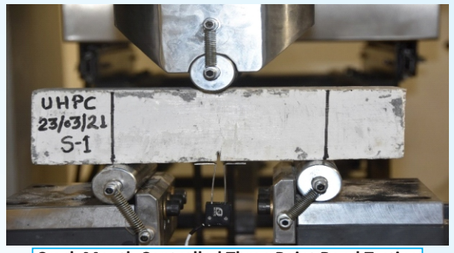
FATIGUE & FRACTURE LABORATORY

Fatigue testing equipment is a basic test facility that is commonly used for the testing of structures or structural components under the action of fluctuating loads. In order to perform cyclic/fatigue testing, the machine needs to perform at speeds much faster than (10 to 100 times) the majority of conventional Universal Testing Machine. This servo-hydraulic 500 kN fatigue testing facility in the department of Civil Engineering is unique in IIT Roorkee, which can perform a wide variety of low and high cycle fatigue, crack propagation, fracture toughness and other dynamic tests. The machine is equipped with environmental chamber for carrying out thermo-mechanical fatigue testing of materials and components across a broad range of temperature -120°C to 500°C. Tensile testing of rebars and coupons in ambient, elevated and sub-zero temperature conditions is possible through the all temperature hydraulic wedges. Additionally, there is provision for performing testing of structural members in the coupled corrosion-fatigue environment. The unique facility can also be used for the testing of small specimens to perform material characterization with reasonable accuracy by connecting to 100 kN load cell. A typical output in terms of load and crack mouth opening displacement derived through fatigue testing is presented in Figure 1.

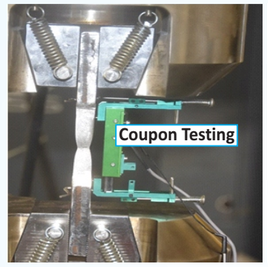
Cost ₹ 2.57 Crore

500 kN Fatigue Testing Equipment


Environmental Chamber



Crack Mouth Controlled Three Point Bend Testing


Coupon Testing


Coupled Corrosion Fatigue Testing

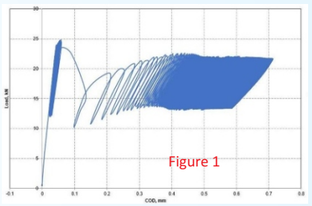


Figure 1

INCUBATION CENTRE FOR CONSTRUCTION TECHNOLOGY IN BUILDING AND ROADS (ICCTBR)

The mandate of the Centre is to provide technical support and evaluation service towards proof-of-concept testing, technology development, capacity building and main-streaming of innovative and novel technologies in the area of building and road construction.


Compression Testing Machine


Polarised Light Microscope


Universal Testing Machine

Dynamic Shear Rheometer


ICAR Concrete Rheometer

ENVIRONMENTAL PROCESSES AND NANOTECHNOLOGY LABORATORY

- To develop novel materials and processes to leverage the benefits of latest scientific and technological advancement in the field of waste treatment
- To provide solutions to give net economic gain to stakeholders out of waste treatment
- To translate research outcomes into commercially viable, field deplorable products or processes and encourage entrepreneurial activities
- To work and encourage working in the areas of nutrient recovery and recycling, trace contaminant removal from drinking water, tackling of emerging contaminant problems and food-water-energy nexus.


Binary HPLC Pump


iCE 3000 Series AAS

ENVIRONMENTAL MOLECULAR BIOLOGY LABORATORY

Ongoing Research: Profiling environmental resistance and pathogen persistence in context of waste treatment and management, animal husbandry, and drinking water supply systems

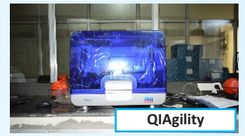
Instruments:- Real time thermal cycler, MinION nanopore sequencing, automatic and manual DNA extraction set-up

Testing- Rapid testing of pathogens without culturing in environmental samples


Nano Spectrophotometer


Molecular Imager


QIA Cube


QIAgility

COMPUTER AIDED DESIGN (CAD)-LABORATORY

The Computer Aided Design (CAD) Lab of the Civil Engineering Department was established in 1986. The lab facilitates the practical for the course work of UG students. It expedites the computation platform to execute simulation/ modelling/ analyses related to the research work of UG/ PG/ Ph.D. students of the department.

Server

Processor	– 2 x Intel Xeon Gold 6140, 18C, 36T @ 2.30GHz
RAM	– 256 GB
Hard Disk	– 8 TB
SSD	– 960 GB

Software Used						
	Autocad	Abaqus	Ansys	ArcGIS	ETABS	STAAD. Pro V8i
	Erdas Imagine	MIDAS Civil	SAP2000	Matlab	Plaxis 2D & 3D	Solid Works

SIGNIFICANT CONTRIBUTIONS IN LAST FIVE YEARS (2017- 2021)

Book Published

Title of Book	Author(s)	Year of Publication
Introduction to UAV	Garg, P. K.	2021
Thermal pre-treatment of Organic fraction of municipal solid waste	Ahmed, B., Tiwari, S., Naseem, A., Kazmi, A.A., Khursheed, A. and Tyagi, V.K.	2021
Transport of Emerging Contaminants from Agricultural Soil to Groundwater	Gani, K. M., Ali, M., Dubey, M., Kazmi, A. A., Sheema, K., Faizal B.	2021
Clean Energy and Resources Recovery : Biomass Waste based Biorefineries	Tyagi, V. K. and Aboudi, K.	2021
Digital Mapping of Soil Landscape Parameters- Geospatial Analyses using Machine Learning and Geomatics	Garg, P. K., Garg, R. D., Shukla, G. and Srivastava, H. S.	2020
Recent Developments in Energy Recovery from Sewage Treatment Plant Sludge via Anaerobic Digestion	Anand, R. S. and Kumar, P.	2020
The Ganga River Basin: A Hydrometeorological Approach	Chauhan, M. S. and Ojha, C. S. P.	2020
Theory and Principles of Geoinformatics	Garg, P. K.	2019
From Visual Surveillance to Internet of Things	Sharma, L. and Garg, P. K.	2019
Post Treatments of Anaerobically Treated Effluents	Tyagi, V K., Khan, A. A., Jern, N. W., Khursheed, A. and Kazmi, A. A.	2019
Applications of Geomatics in Civil Engineering	Ghosh, J. K. and Silva, Da	2019
Post-treatment of anaerobically treated effluents	Tyagi, V. K., Khan, A. A., Ng, W. J., Khursheed, A. and Kazmi, A. A.	2019
Effective Solutions to Pollution Mitigation for Public Welfare.	Gezerman, A. O., Corbacioglu, B. D. and Gurjar, B. R.	2018
Emerging opportunities and challenges in UAV enabled Earth observations and remote sensing technology	Tiwari, A., Sharma, S. and Jain, K.	2018
Pollution Exposure to Humans & Its Assessment	Jat, R., Sahu, V. and Gurjar, B. R.	2018
Sludge Management	Gurjar, B. R. and Tyagi, V.	2017
Biofuels: Technology, Challenges and Prospects	Agarwal, A. K., Agarwal, R. A., Gupta, T. and Gurjar, B. R.	2017
Pile Foundation Design and Construction	Mittal, S.	2017
Concepts and Applications of Web GIS	Tiwari, A. and Jain, K.	2017
Sustainable Water Resources Management	Ojha, C.S.P. , Surampalli, R.Y., Bardossy, A., Zhang, T.C., and Kao, C.M.	2017
Optimization of Life Cycle Net Energy of Algal Biofuel Production	Varun, S., Chowdhury, R. and Sadhukhan, J.	2017

SIGNIFICANT CONTRIBUTIONS IN LAST FIVE YEARS (2017- 2021)

Conference/Seminars/Workshop

Title	Coordinator	Date
IIT Roorkee, Civil Conclave, Theme: Unveiling the Flume to Future	Prof. S. K. Ghosh	Nov 07-08, 2020
Hydraulic and Structural Design of Spillways and Energy Dissipaters under Dam Rehabilitation and Implementation Project (DRIP)	Prof. Z. Ahmad	9-Jul-2020
Hydraulic and Structural Design of Dams under Dam Rehabilitation and Implementation Project (DRIP)	Prof. Z. Ahmad	July 06-Aug 06, 2020
Global Road Damage Detection Challenge 2020 - A Track in the IEEE Big Data 2020 Big Data Cup Challenge	Prof. S. K. Ghosh	April 25-Dec 13, 2020
Regional Workshop on "Quality Control – New Materials and Technique in Road Sector"	Prof. G. D. Ransinchung R. N. & Prof. M. Parida	Feb. 07- 08, 2020
Landslide Risk Assessment and Mitigation LARAM-India 2020	Prof. M. Singh, Prof. N. K. Samadhiya & Prof. P. Maheshwari	Feb. 17- 22, 2020
Construction Practices for Sustainable and Resilient Buildings	Prof. U. K. Sharma	Jan. 31- Feb. 02, 2020
Building Design and Construction	Prof. U. K. Sharma	Jan. 16-18, 2020
Hydraulic and Structural Design of Dams	Prof. Z. Ahmad	Sept. 02- 04, 2019
TEQIP Approved short term course in Advancements in Remote Sensing Data Analysis	Prof. R. D. Garg & Prof. S. K. Ghosh	June 17- 21, 2019
International Conference "Transportation Infrastructure Project: Conception to Execution" (TIPCE)	Prof Rajat Rastogi	Jan 7-10, 2019
International Conference on Geomatics in Civil Engineering, IIT Roorkee	Prof. J. K. Ghosh	April 5-6, 2018
One day seminar on Landslides Analysis and Mitigation, IIT Roorkee	Prof. Mahendra Singh, Prof. N. K. Samadhiya	7-Dec-2018
Indo-U.K. workshop on Sustainable Management of Water Resources in Satluj Beas Basin	Prof C. S. P. Ojha	Feb. 2018
Workshop on Space Technology	Prof. R. D. Garg	7-Apr-2018
National Conference on Road and Traffic (NCORT- 2017), IIT Roorkee	Prof. Indrajit Ghosh	Oct. 14-15, 2017
All India Workshop on Extreme Loading on Structures Jointly Organized by IIT Roorkee, Institution of Engineers (India) Roorkee Local Centre and CSIR-CBRI Roorkee	Prof. M.A. Iqbal (Convener)	Oct. 26-27, 2017
National Conference on Roads and Transport	Prof. Praveen Kumar	Oct. 14-15, 2017

Training Programmes/Courses

Title	Coordinator	Date
2nd 15-Days Road Safety Auditors Certification Course, IIT, Roorkee in association with Ministry of Road Transport Highways and Indian Roads Congress, July 19- August 02, 2021	Prof. A. Agarwal, Prof. I. Ghosh, Prof. P. Chaudhary	July 19- Aug 2, 2021
15-Days Road Safety Auditors Certification Course, IIT, Roorkee in association with Ministry of Road Transport & Highways and Indian Roads Congress	Prof. A. Agarwal, Prof. I. Ghosh, Prof. P. Chaudhary	Feb 22-Mar 08, 2021
One-day Engineers Training Programme on 'Use of New Materials in Rural Roads' for engineers of MPRRA, Bhopal	Prof. R. Rastogi	8-Jan-2021
TEQIP Sponsored Course on "Advancements in Geospatial Technology"	Prof. A. Bhardwaj, Prof. P. K. Garg, Prof. S. K. Ghosh	Dec 14-18, 2020
Faculty Development Programme on "Multifunctional Characteristics of Advanced Materials For Defense Applications"	Prof. R. Chowdhury	Dec 07-11, 2020
AutoDesk CIVIL 3D Training Program on Road Profile Design and Alignment	Prof. P. Chaudhary	Feb. 15- 16, 2020
GIAN (Global Initiative on Academic Network) Road Safety	Prof. I. Ghosh	Sept. 30-04.Oct. 2019
TEQIP III course Climate Data Analysis And Geospatial Techniques	Prof. S. K. Ghosh	June 17-21, 2019
TEQIP Approved Short Term Course in Advancements in Remote Sensing Data Analysis	Prof. R. D. Garg & Prof. S. K. Ghosh	June 17-21, 2019
AICTE Sponsored Short Term Course - Digital Land Surveying	Prof. P. K. Garg & Prof. J. K. Ghosh	June 03-07, 2019
Training Course on New Technologies in Pradhan Mantri Gram Sadak Yojna	Prof. Praveen Kumar	May 16-18, 2017

ROUTINE TESTING FACILITIES

ENVIRONMENTAL ENGINEERING

A. Analysis of Samples delivered at the laboratory

- Routine Testing in Laboratory (For a set containing 4 samples)
  (a) Drinking Water (12 Parameters)
  (b) Waste Water (8 Parameters)
- TOC analysis
- Analysis through IC
- Analysis through AAS
- Flame Photometer (potassium, lithium, calcium, magnesium)

B. Sample collection and analysis

- Collection of water/wastewater sample from site and laboratory analysis
- Air monitoring at site and analysis in laboratory

C. Pharmaceuticals, Pesticides, and Insecticides (for samples delivered at IIT Roorkee)

- Screening against unknown compounds
- Determination of specific compounds

STRUCTURAL ENGINEERING

A. Cement (IS: 4031)

- Fineness, Standard Consistency, Initial and Fine Setting Time 3, 7 & 28-day Compressive Strength & Soundness Test

B. Coarse and Fine Aggregate (IS:383 & IS:2386)

- Bulk Density, Sieve Analysis and Fineness Modulus
- Aggregate Crushing Test
- Specific Gravity Test
- Aggregate Impact Test

C. Concrete (IS:516 & IS:1199)

- Compressive Strength of Cubes/Cylinders/Flexural Strength of Beam

D. Bricks/Stone/Tiles (IS: 3495, IS:1237, IS:15622, IS:13630)

- Water AbsorptionTest, Dimension & Compressive Strength Test & Efflorescence Test

E. Steel (IS: 1786, IS:2062, IS:1599 & IS:1608)

- Yield Strength, Ultimate Strength, % Elongation & Bend Test

F. PVC, MSERW & GI Pipes (IS:1239, IS:4985, IS:4984 & IS:12235)

- Hydrostatic Pressure Test, Dimension Test & Density Test

TRANSPORTATION ENGINEERING

A. Aggregate Tests

- Aggregate Crushing Value
- Aggregate Impact Value
- Los Angles Abrasion Value
- Water Absorption and Specific Gravity
- Flakiness and Elongation Index Test
- Stripping Value (Coating & Stripping of Bitumen Aggregate Mix)
- Soundness Test
- Sieve Analysis for each size of aggregate
- Fineness Modulus for each size aggregate
- Bulk Density for each size aggregate
- Polished Stone Value
- Sand Equivalent Value Test
- Retained Tensile Strength (Water sensitivity Test)
- Deleterious content Test (Cleanliness)
- Petrography Test without thin section preparation

B. Pavement Design and Evaluation

- Flexible Pavement crust design (data supplied by client)
- Flexible Pavement crust design (with data acquisition)
- Rigid Pavement crust design (with data acquisition)
- Rigid Pavement crust design (data supplied by client)
- Benkelman Beam test and overlay design
- Falling Weight Deflectometer Test
- Road Roughness Test
- Extraction and Analysis of core -Thickness, density and Bitumen content
- Field density by sand replacement method (for base course/ sub-base course layers)
- Surface Friction evaluation
- Plate Load Studies (in Field)
- Axle Load Survey/ Traffic Volume Survey/ Intersection Count/ Network improvement study/ Terminal design etc.

C. Bitumen Tests

- Penetration Test
- Specific Gravity Test
- Softening Point Test
- Ductility Test
- Viscosity Test (Kinetic or Absolute)
- Flash and Fire Point Test
- Solubility Test
- Binder Extraction through centrifuge
- Elastic Recovery of PMB
- Tests on modified binders
- Test of Emulsions
- Rheology Tests (DSR)
- FRASS Breaking Test
- Separation test on Modified Binders
- Long term Aging Tests
- Short Term Aging Tests

D. Bituminous Mix / GSB, WMM Mix

- Bituminous Mix Design DBM/SDBC/BC
- Bituminous Mix Design - BM
- JMF Micro-surfacing
- JMF Stone Matrix Asphalt (SMA)
- Marshall Stability and Flow Value (Set of 3 Specimen as prepared by the client)
- Granular Sub-base/Wet Mix macadam mix design
- Modified GSB/WMM Mix Design - with additives

E. Bituminous Mix Performance Tests

- Wheel Rut-depth measurement (AASHTO T324-04)
- Wheel Rut-depth measurement with design of bituminous mixture using superpave method (MS-2 & AASHTO T324-04)

F. Concrete Mix & Testing

- Concrete Mix Design for Rigid Pavements
- Cement content determination
- Compression strength test per 3 samples
- Flexural Strength test per two prisms
- Concrete permeability test per 2 samples
- Load Transfer Efficiency test at site
- Determination of compressive & flexural strength by Back calculations
- Non -Destructive Tests
- Concrete Core Test (Supplied Samples)
- Concrete Core Test including cutting (Within 30 kms radius)

G. Tests on Subgrade Soil

- CBR (Lab, Complete Analysis)
- Soil gradation
- Soil Classification (gradation & Atterberg limit
- Index properties of soil (LL, PL, PI)
- Standard Proctor test
- Modified Proctor test
- Free Swelling Index
- Particle size distribution for clayey soil using Hydrometer Analysis

ONGOING RESEARCH PROJECTS

Title	Agency	Amount (₹ lakh)	Name of PI
Microstructurally Guided Computational and Experimental Analysis of Failure Mechanisms in Fibre Reinforced Geopolymer Concrete	SERB, New Delhi	32.94	Prof.Sudakshina Dutta
Development of Guidelines for Use of Waste Reclaimed Water in Pavement Construction	Ministry of Roads Transport and Highways (MoRTH)	27.56	Prof. Nikhil Saboo
Development of Performance based mix design process: A re-look at the Marshall Mix design process for production of strong and durable bituminous mixes	National Highway Authority of India (NHAI)	91.21	Prof. Nikhil Saboo
Experimental and numerical evaluation of double containment structures of Indian PHWR against hard missile impact due to external event	Atomic Energy Regulatory Board	50.91	Prof. M. A. Iqbal
Quasi-static and dynamic strength of ultrahigh performance concrete	DST (DST-RFBR Indo-Russian Joint Research Project)	26.60	Prof. M. A. Iqbal
Fire Performance of Aged Reinforced Concrete Structure	DST, New Delhi	38.50	Prof. U. K. Sharma
Performance Evaluation of Fire Resistant Structural Steel Tube at an Elevated, Jamshedpur	Tata Steel Ltd., Jamshedpur	30.00	Prof. U. K. Sharma
Assessing the Suitability of warm mix asphalt (WMA) Technology Using Tribological and Performance Characteristics	Science and Engineering Research Board (SERB), India	36.00	Prof. Nikhil Saboo
Life Cycle and Performance Assessment of Roads Constructed Using Cold Mix Technology	National Rural Infrastructural Development Agency (NRIDA), GOI	20.50	Prof. Nikhil Saboo
Performance Assessment of Roads Constructed Using Waste Plastics	NRIDA, GOI	20.50	Prof. Nikhil Saboo
Development of methodology to compensate effect of topography, contamination and adjacency factors	DST, New Delhi	36.80	Prof. P.K. Garg
Fate & Management of Emerging Contaminants	DST, New Delhi	140.80	Prof. A. A. Kazmi
Setting up Laboratory on Sustainable and Durable Construction	NBCC (India) Ltd., New Delhi	198.30	Prof. U. K. Sharma
Anaerobic Co-Digestion of Organic Fraction of Municipal Solid Waste and Sewage Sludge Effect of the Thermo-Chemical Pretreatment on Process Performance and Microbial Community Development	Department of Biotechnology (DBT)	103.60	Dr. Vinay Kumar Tyagi
Comprehensive Solution for Slope Stability of Road between Zero Bridge to Koteshwar	THDC India Ltd., Tehri (Uttarakhand)	20.63	Prof. N. K. Samadhiya
The Ballistic Response of Ceramics Targets under Various Configuration Prestress and obliquity	DRDO	53.60	Prof. M. A. Iqbal
Submerged Vanes for River Training and Sediment Management in Streams and their Field Application.	Ministry of Ports, Shipping and Waterways, New Delhi, India	172.50	Prof. Z. Ahamd
Optimal Route Alignment in Sikkim Area	DRDO Chandigarh	46.00	Prof. G. D. Ransinchung R. N.
Fracture Performance of Reinforced Concrete Members in Coupled Corrosion and Fatigue Environment	Science and Engineering Research Board (SERB)	48.00	Prof. Sonalisa Ray
Utility of High Strength Self Compacting Alkali Activated Slag Concrete (HS-SC-AASC) filled steel tubes in enhancement of strength and durability in Ports, Harbour and offshore structures	Ministry of Shipping (Development Wing), Government of India	24.40	Prof. P. K. Gupta
Fracture and Fatigue Studies in Textile based Auxetic Composite	ISRO, Bangaluru	27.00	Prof. A. Chakrabarti
Study on response of subgrade soil of penta-rail track and means to improve the functionality requirements of track	Terminal Ballistics Research Laboratory Chandigarh	48.00	Prof. V. A. Sawant
RAP incorporated Geopolymer Concrete Technology	Ministry of Road Transport & Highways, IDA Building, Jamnagar House, New Delhi.	41.78	Prof. G. D. Ransinchung R. N.
"Modelling, Simulations and Dynamic Fracture Behaviour of Composites under High Strain Rate Loading"	Armament Research Board, New Delhi	48.73	Prof. Sonalisa Ray
Development of Sustainable Concrete Utilizing Mine Waste Rock	Hindustan Zinc Limited, Udaipur	35.40	Prof. Sonalisa Ray
Nutri-Cycle Waste-derived Biodegradable Polymeric Hybrid Fertilizer BPHF for Recycling Nutrients from Treated Waste Water to Agricultural Fields	DST, New Delhi	37.55	Prof. Sudipta Sarkar
Topology Optimization of Large-Scale Engineering Structure: Numerical Simulations and Experimental Investigations	DRDL, Hyderabad	45.21	Prof. Rajib Chowdhury

ONGOING RESEARCH PROJECTS

Title	Agency	Amount (₹ lakh)	Name of PI
Polyphasic assessment of diversity of phototrophic microorganisms from cold environments and its bioprospecting potential	DST, India (with Czech republic)	25.69	Prof. Raja Chowdhury
Advanced oxidation process for complete attenuation of pathogens and antimicrobial resistance in municipality supplied ground water	DST, New Delhi	41.00	Prof. Gargi Singh
Halting the release of Antimicrobial Resistance and Pathogens into the environment from Indian dairies (AMRIT)	SERB, New Delhi	20.90	Prof. Gargi Singh
Mapping Dynamic Air Pollution Information to the Choices of the Travelers: Towards Sustainable Transport	SERB, New Delhi	25.30	Prof. Amit Agarwal
Pedestrian safety in mixed traffic conditions: Probing executable solutions to enhance vulnerable road user's safety using a pedestrian simulator.	SERB, New Delhi	31.90	Prof. Pushpa Choudhary
Satellite Imagery Computer Vision Modelling for Landuse Landcover	National Geographic Foundation for Science and Exploration, South Korea	36.39	Prof. Alok Bhardwaj
SARASWATI 2.0-Identifying best available technologies for decentralized wastewater treatment and resources recovery for India	Department of Science & Technology (DST)	160.77	Dr. Vinay Kumar Tyagi
BIM to GIS Integration & Geospatial Processing	DBT, New Delhi	31.74	Prof. Kamal Jain
Life Cycle and Performance Assessment of PMGSY Roads Constructed Using Cold Mix Technologies in Uttarakhand Region	NRIDA, Govt. of India	23.50	Prof. G. D. Ransinchung R. N.
Development of a design-through-analysis methodology based on isogeometric technology : Application to Phase-Field Fracture and Topology Optimization	SERB, New Delhi	21.05	Prof. Rajib Chowdhury
Reinterpretation of Traditional Technologies to Create Affordable Resilient Homes for Rural Communities	SPARC, MHRD	45.60	Prof. Sanjay Chikermane

FACULTY AWARDS (LAST 5 YEARS)

Prof. Vinnarasi, R.	• Prof. U.C. Kothyari - ISH Best Ph.D. Thesis Award" for the year 2020
Prof. Mittal, Satyendra	• Academic Excellence in Faculty (National Category) under IEI BLC-FCRIT Excellence Award" The Award has been jointly Presented By The Institute of Engineers (India), Belapur Local Centre and Fr. C. Rodrigues Institute of Technology, Vashi • Dedicated Teaching Profession National Award 2020, Kamarajar Institute of Education and Research (KIER), Nov 25, 2020 • Ganesh Shankar Vidyarthi Samman (Award) for special contribution in technical field, National Union of Journalism, Haridwar, India, 2019 • Best Citizens of India Award, International Publishing house New Delhi, 2019 • Outstanding Engineer Award for Research & Field Applications, The Institution of Engineers, Roorkee, 2018
Prof. Sawant, V. A.	• IGS-Chennai Chapter Biennial Award for the Best Paper, IGC 2020, Dec 17-20, 2020
Prof. Chatterjee, Kaustav	• IGS-Kochi Chapter YGE Award for the Best Paper, IGC-2020, Dec 17-20, 2020 • IGS-Kochi Chapter YGE Best Paper Award - 2018, Indian Geotechnical Society (IGS), 2018
Prof. Garg, P. K.	• Fellow of Innovation Award, 6th Conference on Good Governance, Y S Research Foundation of Public Administration, Dehradun, Aug 30, 2020 • Best Research Award in Surveying & Mapping, Institute of Engineers, Dehradun Chapter, Sep. 15, 2019 • Y. S. Research Excellence Award, Y. S. Research Foundation of Public Administration, Dehradun, Aug. 2019
Prof. Ojha, C. S. P.	• Fellowship Award, The Indian National Academy of Engineering (INAE) by the Governing Council, Sept 8, 2020
Prof. R.N., G.D. Ransinchung	• INAE Innovative Student Projects Award -Doctoral Level Category, Indian National Academy of Engineering, 2019
Prof. Parida, M.	• Prize of Cairo University of the Best WCTR Paper Award, Cairo University upon the initiative of the Transportation Programme, 2019
Prof. Garg, R. D.	• National Geospatial Award of Excellence 2018, Indian Society of Remote Sensing, 2018 • Uttarakhand Eminent Engineers Award 2018, Institution of Engineers Uttarakhand Chapter, 2018
Prof. Ghosh, J. K.	• National Geospatial Award for Excellence 2017 (A Life-time Achievement Award), The Indian Society of Remote Sensing, Dec. 05, 2018
Prof. Samadhiya, N. K.	• Excellence Performance Award, Indian Society for Rock Mechanics and Tunneling Technology (ISRMTT), 2018