



**SRM**  
INSTITUTE OF SCIENCE & TECHNOLOGY  
(Deemed to be University u/s 3 of UGC Act, 1956)

# Newsletter of Civil Engineering

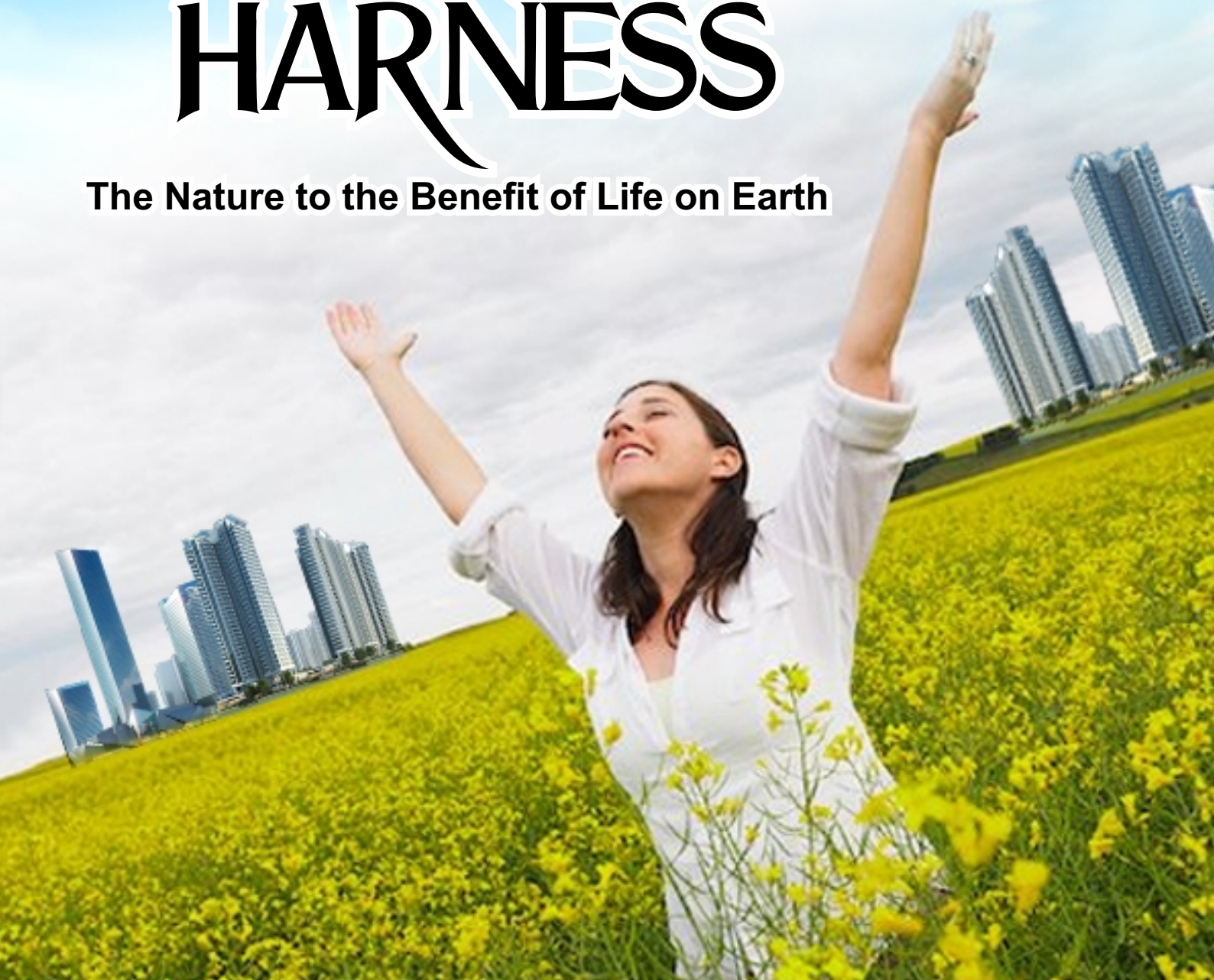
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# HARNESS

The Nature to the Benefit of Life on Earth



**SRM INSTITUTE OF SCIENCE AND TECHNOLOGY**

SRM Nagar, Kattankulathur - 603 203, Chengalpattu District, Tamil Nadu.

## ABOUT THE DEPARTMENT

The Department of Civil Engineering is one of the oldest and well-established departments in SRM. The undergraduate program in Civil Engineering includes civil engineering subjects and also offers value education, foreign languages, industrial training, personality development courses, yoga, instrumentation, computers, management, economics etc., as part of the curriculum, which are essential requirements for any successful Civil Engineer. Students gain practical experience from field visits to industries, dams and irrigation structures, construction sites, etc. The department's range of postgraduate programs includes core courses as well as electives and independent study. Postgraduate programs are offered in Structural Engineering, Construction Engineering and Management, RS&GIS, Environmental Engineering, and Geotechnical Engineering. Students gain training in their field of study through summer internships. doctoral research areas that are being pursued include concrete technology, structural systems, concrete bridges, soil-structure interaction, modern construction materials, environmental studies and wetland management. Well qualified and experienced faculty members form the department. They specialized in structural, geotechnical, environmental, water resources, transportation, construction engineering and management, remote sensing and GIS. The faculty members contribute to academic development by publishing books and presenting papers in international and national conferences. The labs are well equipped with state of the art equipment. B.Tech Civil Engineering programme at Kattankulathur Campus is accredited by Engineering Accreditation Commission (EAC) of ABET. ([www.abet.org](http://www.abet.org)).

## MESSAGE FROM HEAD OF THE DEPARTMENT



**Dr. K. S. SATYANARAYANAN**

Professor and Head / Civil / SRMIST

Dear Colleagues, Greetings! It is a great pleasure in publishing this newsletter highlighting all the activities and events held during the even semester of the academic year 2019-2020. It is indeed a happy moment in congratulating our department Team-SRM Green Stabilizers for receiving National level AICTE - Chhatra Vishwakarma Award – 2019 for the project on "Adopting Bio Reinforcement Techniques to Control Soil Erosion on Bench Terraces and Irrigation Channels". I feel honoured in emphasizing another proud moment for the department in receiving Championship in GEO GENIUS for the 2nd consecutive year. I congratulate the team members for their successful achievement. It was privilege for the department to organize the SRMSCE – ICI Fest 2020 CONCRETUS National Level Technical Fest with various workshops and events for students of Civil Engineering and Architecture. Our department extended the support in mentoring the students and faculty by conducting skill development program, workshops, guest lectures and faculty development program. The evidence can be seen from the various activities conducted during the period of January to July, 2020. Even during the pandemic situation, our department has conducted series of online webinars and technical sessions covering all aspects of Civil Engineering. Our highest priority is to equip the students with the effective and enriched knowledge whether they are learning on campus or from home. I trust that our department will face the new challenges with full enthusiasm and recognize new opportunities. I thank all the faculty members and students for their support in organizing and conducting departmental activities. I am extremely thankful for the members of DTP section in extending their support for making this newsletter successfully. I congratulate and thank all the team members of Student Chapter from various society of Civil Engineers Association in bringing this newsletter eventful.

## **ADVISORY COMMITTEE MEMBERS**

### **ADVISOR**

**Dr. K.S. Satyanarayanan**, Professor and Head

### **COMMITTEE MEMBERS (FACULTY)**

**Dr. P. R. Kannan Rajkumar**, Associate Professor

**Ms. C.Sudha**, Assistant Professor

**Ms. T.M. Jeyashree**, Assistant Professor

**Mr. N. Ganapathy Ramasamy**, Assistant Professor

### **COMMITTEE MEMBERS (STUDENTS)**

**Siddhartha Sarkar**

**Suraj Swaroop**

**Faizan Ahmad Wani**

**Anjani Sonali Soreng**

**Anurag Bhatheshwar**

**Shivani M**

**Muruganantham S**

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## DOCTORATE AWARDED

S.No	Name of the Candidate	Supervisor	Date of Viva-Voce	Topic
1	P.Manoharan	Dr.P.T.Ravichandran	21.02.2020	Effect of Crumb Rubber Fine Aggregate on Properties of Concrete
2	K.Prasanna	Dr.R.Annadurai	5.3.2020	Study on the Characteristics of Water Leachate and Microbial Activity in Semi -Urban Solid Waste Dumpsite
3	S. Anandh	Dr. K. Gunasekaran	06.03.2020	Investigation on the Effect of Coconut Fiber in Coconut Shell Concrete
4	V.T.Ashok Kumar	Dr.P.T.Ravichandran	12.06.2020	Use of Textile Effluent Treatment Plant Sludge as Construction Material

## PATENTS

Country	:	INDIA
Year	:	2020
Patent Number/ Copyright	:	202041028384
Complete Specification Filed Date	:	03-07-2020
Published Date	:	17.07.2020
Inventors (Name of Faculty/Students)	:	S. PRADEEP HIRANYA TALLAM SHRUTHI CHORDIA SHIRSHENDU ROY S. SRINIVASA SENTHIL
Patents Title	:	A PANEL ASSEMBLY
Case Status (Filed/Published/Granted)	:	FILED



## CONSULTANCY DURING JUNE 2019 TO MAY 2020

S.No	Name of the Faculty	Project Title	Funding Agency	Amount (Rs.)
1	Prof. G. Augustine Maniraj Pandian,	Soil Investigation and Water tank Design (2ltr capacity) at Ward No.13, TNHB Thirukachur, Maraimalai Nagar Municipality	Commissioner, Maraimalai Nagar Municipality	82,600
	Dr. P.T. Ravichandran			
	Dr. K. Gunasekaran			
	Dr. P.R. Kannan Rajkumar			
	Ms. Divya Krishnan K			
2	Prof. G. Augustine Maniraj Pandian	Soil Investigation and Water tank Design (1 ltr capacity) at Ward No.09, Kadambur Location, Maraimalai Nagar	Commissioner, Maraimalai Nagar Municipality	70,800
	Dr. P.T. Ravichandran			
	Dr. K. Gunasekaran			
	Dr. P.R. Kannan Rajkumar			
	Ms. Divya Krishnan K			
3	Dr. P.T. Ravichandran	Soil Investigation for Water tank Design and construction (1 Lakh ltr capacity) at Ward No.10, Periya Sengundram Location.	Commissioner, Maraimalai Nagar Municipality	47,200
	Dr. K. Gunasekaran			
	Ms. Divya Krishnan K			
4	Dr. P.T. Ravichandran	Soil Investigation for Water tank Design and construction (1 Lakh ltr capacity) at Ward No.10, Gokulapuram.	Commissioner, Maraimalai Nagar Municipality	47,200
	Ms. Mary Rebekah Sharmila			
	Ms. Divya Krishnan K			
5	Dr. P.T. Ravichandran	Soil Investigation for Water tank Design and construction (2 Lakh ltr capacity) at Ward No.11, Srivari Nagar.	Commissioner, Maraimalai Nagar Municipality	47,200
	Dr.K.Gunasekaran			
	Ms. Mary Rebekah Sharmila			
	Ms. Divya Krishnan K			
6	Dr.P.T. Ravichandran	Soil Investigation for Water tank Design (1 ltr capacity) at Ward No.17, Senthamizh Nagar	Commissioner, Maraimalai Nagar Municipality	47,200
	Dr. K. Gunasekaran			
	Ms. Mary Rebekah Sharmila			
	Ms. Divya Krishnan K			
7	Dr. P.T. Ravichandran	Soil Investigation for Water tank Design (1Lakh ltr capacity) at Ward No.16, Peramanur Ambedkar street	Commissioner, Maraimalai Nagar Municipality	47,200
	Dr. K. Gunasekaran			
	Ms. Mary Rebekah Sharmila			
	Ms. Divya Krishnan K			
8	Dr. P.T. Ravichandran	Testing of PVD sample, TD 3520(U) Roll No. 19-31-02-8826 band drains, CH : 23100 to CH:27100 between Thirukuvallai and Thiruthuraipundi	The Executive Engineer, Gauge Conversion –II, Thiruchirapalli	14,750
	Ms.Divya Krishnan K			

9	<b>Dr.PT.Ravichandran</b>	Testing of PVD sample, TD 3520(U) Roll No. 19-31-02-8872 band drains, in CH : 27100 to CH:31100 between Thirukuvallai and Thiruthuraipundi	The Executive Engineer, Gauge Conversion –II, Thiruchirapalli	14,750
	<b>Ms.Divya Krishnan K</b>			
10	<b>Dr.PT.Ravichandran</b>	Testing of PVD sample, TD 3520(U) Roll No. 28-15-04-5679 band drains, in CH : 23100 to CH:27100 between Thirukuvallai and Thiruthuraipundi	The Executive Engineer, Gauge Conversion –II, Thiruchirapalli	14,750
	<b>Ms.Divya Krishnan K</b>			
11	<b>Dr.PT.Ravichandran</b>	Testing of PVD sample, TD 3520(U) Roll No. 25-15-02-9967 band drains, in CH : 23100 to CH:27100 between Thirukuvallai and Thiruthuraipundi	The Executive Engineer, Gauge Conversion –II, Thiruchirapalli	14,750
	<b>Ms.Divya Krishnan K</b>			
12	<b>Dr.PT.Ravichandran</b>	Tensile Test for Geo Tough Strap samples, Test Track Works at SIPCOT, Cheyyar	M/s Intercontinental Consultants and Technocrats Pvt. Ltd., New Delhi	14,160
	<b>Ms.Divya Krishnan K</b>			
13	<b>Dr.PT.Ravichandran</b>	Subsurface investigation and design for construction of cut and cover storm water drain at Kannan Avenue to Vimal Avenue	Executive Officer, Perungalathur Town Panchayat	47,200
	<b>Dr.K.Gunasekaran</b>			
	<b>Dr.PR.Kannan Rajkumar</b>			
	<b>Ms.Divya Krishnan K</b>			

## AWARDS

### AICTE - Chhatra Vishwakarma Award – 2019.

The students of SRM Institute of Science and Technology, Kattankulathur have made their Institute proud once again. This time, Team SRM Green Stabilizers from the Department of Civil Engineering ranked first in the national AICTE - Chhatra Vishwakarma Award – 2019.

The team collected the award from the Hon'ble Minister of Human Resource Development Shri Ramesh Pokhriyal and Prof. Anil D Sahasrabudhe. Chairman of All India Council for Technical Education, The award ceremony was held in New Delhi on 24 February 2020. The team received a certificate and a cash prize of Rs.51,000. The team was ranked first in the Land category by presenting an innovative solution/prototype under the theme 'How to enhance the income of village'. The student team consists of M. Aravind, Shankar Kandasamy, Dhivya S and Kavya M. They were mentored by Chezhiyan S, Assistant Professor/Civil.

The event was organized by All India Council for Technical Education. SRMIST was one of the 6,676 applicants received throughout the country. The team also ranked first in the 'Land category' and received a special mention on how their project was a perfect solution for the problem.

The project submitted for the award is "Adopting Bio Reinforcement Techniques to Control Soil Erosion on Bench Terraces and Irrigation Channels". Their project adopted bio-reinforcement techniques to control soil erosion on bench terraces and irrigation channels. The shoulder bunds and risers of the bench terraces are severely endangered by soil erosion, so the bench terraces and bunds of the irrigation channels were bio-stabilized by planting Vetiver (*Chrysopogon zizanioides*) densely. To ensure the results scientifically, the specialized In-situ jet erosion test apparatus has been designed and fabricated for conducting erodability test in the field itself. By conducting In-situ jet erosion test periodically at several bio-reinforced sites, it was found that the control of soil erosion by Vetiver bio-reinforcement is increased by 56% in six months and the strength increase was found to be 62% comparatively with the unreinforced soil. This technique will facilitate the farmers in maintaining bench terraces without any financial hurdles.





## Geo Genius

SRMIST is the Champion of GEO GENIUS for the 2nd consecutive year, a national level technical event organised by IIT Madras and L&T Construction during 06/03/2020 to 08/03/2020 at IITM campus as a part of CEA FEST 2020. Teams were shortlisted based on their Team Description Paper (TDP) previously submitted. The TDP includes the proposal for the composition of materials and reinforcement details. The selected teams were assigned the task of build-up of the mechanized earth wall with inclined backfill using granular by-products and domestic solid waste materials.

More than 20 teams from all over India competed, among the contestants, the team SRM GREEN STABILIZERS bagged the first place for their innovative approach towards the problem statement. The winning team constructed the mechanized earth wall using an optimum composition of recycled materials such as GGBS, Fly Ash and M-Sand based on the literature review and pilot experimental studies carried out in Soil Mechanics Laboratory. The inclined surface of the earth wall was stabilized by wrapping the batter face with newspaper reinforcement and achieved a 49 Degree stable slope, which was found to be the steepest among all other competing models. This approach facilitated the team to reduce the 'right of way' effectively and minimize the fill requirements. This also enabled the model to perform well in stability check by Rebound Hammer test. Further, the model was also stable in erosion test. Juries of the event, Professors Dr. Ramesh Kannan and Dr. Tarun Naskar, IIT Madras, had appreciated the team regarding our solution for the problem given. The cash award and certificates for the winners were presented by Dr. Manu Santhanam, Professor and Head, Department of Civil Engineering, IIT Madras along with other delegates of IIT. The team members are Nehaun, Riza Bashir Shah and Surya Prakash from III year B.Tech Civil Engineering, and mentored by Chezhiyan S, Assistant Professor/Civil.

## SKILL DEVELOPMENT PROGRAM

### Geosynthetics and Coconut Shell Concrete

SRM Institute of Science and Technology, Department of Civil Engineering, Kattankulathur conducted a skill development programme on “Geosynthetics and Coconut Shell Concrete” on 01.02.2020 in association with SRMIST IGS Student Chapter and IEI, Kattankulathur, Local Chapter. The undergraduate student participants from various colleges were attended the workshop. The workshop event was inaugurated by The Convener of this workshop and Head of the Department of Civil Engineering Dr. K. S. Satyanarayanan. Dr. P. T. Ravichandran, Coordinator of this programme delivered a lecture briefly about “Geosynthetics” followed by a short introductory lecture on “Coconut Shell Concrete” by another coordinator of this programme Dr. K. Gunasekaran. Hands on training through practical's both soil mechanics and concrete laboratory were given to the participants by the Faculty members after the inaugural session and the event went off well with the supports and sponsored by UltraTech cement Limited and CASNI Infra Pvt. Limited.



## Experimental Training on Soil Reinforcement and Concrete made with Coconut Shell

SRM Institute of Science and Technology, Department of Civil Engineering, Kattankulathur conducted a skill development programme on “Experimental Training on Soil Reinforcement and Concrete made with Coconut Shell” on 08.02.2020 in association with SRMIST IGS Student Chapter and IEI, Kattankulathur, Local Chapter. The undergraduate student participants from various colleges were attended the programme. Dr. K. Gunasekaran, Professor, Department of Civil Engineering welcomed the gathering and briefed about the purpose of this workshop. Dr. P. T. Ravichandran, Coordinator of this programme delivered a lecture briefly about “Soil reinforcement” followed by a short introductory lecture on “Concrete made with Coconut Shell” by another coordinator Dr. K. Gunasekaran. After inaugural session hands on experimental training on soil reinforcement and concrete made with coconut shell were given to the participants in the laboratories by the Faculty members connected. The event went off well with the supports and sponsored by UltraTech cement Limited and CASNI Infra Pvt. Limited.



## Training and testing of Geo and special Lightweight concrete

SRM Institute of Science and Technology, Department of Civil Engineering, Kattankulathur conducted a skill development programme on “Training and testing of Geo and special Lightweight concrete” on 15.02.2020 in association with SRMIST IGS Student Chapter and IEI, Kattankulathur, Local Chapter. The undergraduate student participants from various colleges were attended the workshop. Dr. K. Gunasekaran, Professor, Department of Civil Engineering welcomed the gathering and briefed about the purpose of this programme. Dr. P. T. Ravichandran, Coordinator of this programme and Professor / Civil delivered a lecture briefly about “Geo textiles” followed by a short introductory lecture on “light weight concrete” by another coordinator of this programme and Professor / Civil Dr. K. Gunasekaran. After inaugural session hands on experimental training on Geo textiles and concrete made with coconut shell were given to the participants in the laboratories by the Faculty members connected. The event went off well with the supports and sponsored by UltraTech cement Limited and CASNI Infra Pvt. Limited

## GUEST LECTURE AND WORKSHOP

### Traffic Management using Big Data

The SRM Institute of Science and Technology Indian Geotechnical Society (IGS) Student Chapter, Department of Civil Engineering, SRM Institute of Science and Technology, Kattankulathur organized a Guest Lecture on “Traffic Management using Big Data” on 8th of January, 2020., the Head of the Department of Civil Engineering, Professor Dr. K. S. Satyanarayanan introduced the Chief Guest Dr. K. S. Nesamani, Manager, Transportation Analysis Section, California Air Resources Board (CARB), California and also he emphasized. The speaker gave a general comparison on the traffic organization in USA and India; briefed about the challenges in traffic control and causes of traffic congestion. Further, he focused on the role of “Big Data” in the field of Transportation Engineering and its real time application in traffic configuration.



## Workshop on “MS Opportunities in USA

A workshop initiated by Dr Paromita Chakraborty, Research Associate Professor in SRM Research Institute and Adjunct Professor in Department of Civil Engineering, SRMIST, on “Opportunities on Master of Science under various discipline in Murray State University, USA. The officials from Murray State University, USA, Dr Bommanna Loganathan, Professor and Project Director, Chemical Services Laboratory and Dr. Tyson, Director, International Relations was welcomed by Dr Paromita Chakraborty. The participants are students from B.Tech Civil Engineering, B.Tech Chemical Engineering and M. Tech Environmental Engineering and Research Scholars from Research Institute and Department of Civil Engineering. The first talk given by Dr Bommanna Loganathan on the Research facilities carried out in Murray SU and the opportunities for doctoral program and projects involved in research. He also invited for joint collaboration with SRMIST on exchange of students and faculty members for research, publications and SAP. Many queries raised by the participants were answered by the speaker on research and collaborative activities.





## FACULTY DEVELOPMENT PROGRAMME

### Primavera (P6) Software Training Program

FDP was welcomed by Dr.L.Krishnaraj and the theme is Primavera (P6) Software Training Program for faculty members on.31.1.2020 and 1.2.2020 from 9:30am to 4:00pm at CRC CADD Lab, 2nd Floor, CRC block. The participants were trained by Group of infinity PMC people. From construction Engineering and management faculties and other specialization people also attend the training. This training involved the theoretical as well as practical case study of a real time project. This program was coordinated by Dr.L. Krishnaraj and Dr M.Balasubramaniam.

## SRMSCE - ICI FEST 2020 - CONCRETUS

The Concretus 20' organized by SRM Society of Civil Engineers in association with Indian Concrete Institute conducted on 20 and 21 of February 2020 at the institute premises in Kattankulathur. This two day fest comprises various workshops and events for students of Civil Engineering and Architecture. The aim of the events and workshops conducted is to explore the latest developments in civil engineering under the domains of Concrete Technology, BIM, GIS, Architecture, Transportation and Geotechnical Engineering. Experts were invited to provide insights on various topics for the benefit of the participants. Wide ranges of events were conducted to enable the participants to showcase their technical and innovative skills. A series of workshops such as Self Compacting Concrete , Coconut Shell Concrete, Introduction to Prestressed Concrete = Introduction to BIM ,Introduction to Q-GIS , Rapid 3D Modelling using Arc GIS , Practical Applications on Analysis and Design of Structures were conducted and the students got benefitted

## Competitions (Events)

Davidovits - geo polymer concrete, aircin - high performance concrete, consilid – architecture, geo wall - geotechnical engineering, geo video - geotechnical engineering, curva geometria - transportation engineering





## ONLINE WEBINARS CONDUCTED

### Association with ACCE (Chennai Centre) and Indian Concrete Institute and Ultratech Cement

A Series of Online Webinars were conducted during May – July 2020 for the benefit of Practicing Engineers, Faculty Members and Students during the COVID 19 Lockdown. A total of 140 - 200 participants attended the online webinars which includes students, faculties from many institutions, structural consultants and practicing engineers from Tamilnadu, Karnataka, Odisha, West Bengal, Maharashtra etc., attended this session. The webinar was organised in Association with Association of Consulting Civil Engineers, Chennai Centre, Indian Concrete Institute and UltraTech Cement Pvt. Limited.



Lecture Series	Name of the Presenter	Date	Topic
1	Dr.Colonel.P.Nallathambi, Practicing Structural Consultant, Chennai	07.05.2020	Defects in RCC Buildings – Causes and Remedies
2.	Dr.K.Gunasekaran, Professor, SRMIST	11.05.2020	Sustainable Concrete and Construction Materials – Practices for Quality Assurance
3.	Er.K.Jayasankar, Vice President, UltraTech Cements	14.05.2020	Challenges in Making Durable Concrete
4.	Dr.V.Rajendran, Hitech Civil Engineering Services (M) Pvt. Ltd.	16.05.2020	Brain Storming Session on Repair And Rehabilitation – Case Studies
5.	Prof.Augustine Maniraj Pandian, Professor SRMIST.	18.05.2020	An Overview of Earthquake Resistant Structures
6.	Dr.A.R.Santhakumar, Practising Consultant and Former Dean, Anna University	21.05.2020	Reinforcement Detailing for Durable Performance of Concrete
7.	Dr.S.Senthil Selvan, Professor, SRMIST	23.05.2020	M-SAND, Need of this hour
8.	Dr. C.Velan, City Head – Chennai Operations, CapitaLand India Limited (Ascendas India), Chennai	04.07.2020	DESIGN AND OPERATIONAL ADVANCEMENTS FOR FUTURE

## Association with Institution of Engineers (i), Kattankulathur Centre, Indian Geotechnical Society and Ultratech Cement.

A Series of Online Webinars were conducted during May – July 2020 for the benefit of Practicing Engineers, Faculty Members and Students during the COVID 19 Lockdown. A total of 200 - 300 participants attended the online webinars which includes students, faculties from many institutions, structural consultants and practicing engineers across the Globe. The webinar was organised in Association with Institution of Engineers (I), Kattankulathur Centre, Indian Geotechnical Society and UltraTech Cement Pvt. Limited.

Lecture Series	Name of the Presenter	Date	Topic
1.	Prof. Md. Abdul Mannan' UNIMAS, Malaysia	12.05.2020	Structural Failure Causes and Research Thought
2.	Prof. Dr. Lee Yee Leon, IIC University of Technology, Cambodia	15.05.2020	Concrete Serving Mankind Series
3.	Prof.S.R.Gandhi, Director, SVNIT, Surat	18.05.2020	Case Studies on Geotechnical Failures
4.	Dr. Ankay Kumar Mishra, Associate Professor and Research Director, Madan Bhandari Memorial Academy Nepal, Pokhara University, Nepal	20.05.2020	Risk Management Practice
5.	Dr Anil Joseph, Managing Director, Geo Structurals Pvt Ltd, Cochin	22.05.2020	Modern Trends in Construction and Case Studies of Value Engineering in Foundation Design
6.	Shri. Sriram Iyer, Chief Operations Officer, Shapoorji Pallonji and Co. Pvt. Ltd, Pune	23.05.2020	Challenges in the Construction Real Estate Industry after Covid -19
7.	Dr. U Johnson Alengaram, Director, Centre of Innovative Construction Technology, Faculty of Engineering, University of Malaya, Malaysia	26.05.2020	Research Without Border and Faculty Development
8.	Dr. K Muthukkumaran, Professor / Civil, NIT, Trichy	24.05.2020	FRP Strengthened RCC Piles Under lateral loads- a Field Study
9.	Dr. A. Gnanamani, Head & Sr. Principal Scientist, Microbiology Lab, CSIR-CLRI.	05.06.2020	Microbial Biodiversity in Marine Sources and its Application in Bioremediation
10.	Dr. T. Palanisamy, Department of Civil Engineering, NITK, Surathkal.	11.07.2020	Microstructural Analysis on Cement Paste using SEM

## INDUSTRIAL VISITS

### Industrial visit “Ultratech RMC plant Near Kelambakkam”

As part of our M.Tech curriculum we had gone for an Industrial Visit, near Kelambakkam, Tamilnadu. They visited a Ready Mix Concrete (RMC) Plant, undertaken by “ULTRATECH CEMENT LTD.”, which has been successfully running for the past 13 years. I.V by learning the execution process in detail. Visited the plant and learnt some of the important plant operations and the manufacturing of the ready mix concrete in detail.



### Industrial visit to Mangalore & GOA

A class of Civil Engineering students pursuing third year at SRM Institute of Science and Technology went for industrial visit to Mangalore and Goa with a duration of 31st Jan 2020 to 5th Feb 2020. The 6 day visit helped the students to explore on the marvellous Konkan Railway, Mangalore port and the great Goa forts.





## STUDENT PROJECTS

### Project – PANDIYAN

A light-weight concrete canoe was constructed, aimed at enhancing the life of people dependent on the fishing with economical & efficient concrete canoes. The physical & mechanical properties of the concrete was studied and the trial mix with the best composition was selected. The final design of hull was obtained by the trail and error method was designed in MAXSURF Modeler. Stability analysis of the canoe was performed after in MAXSURF Stability. Strength Analysis is done for the design using manual calculation. The mould was then prepared along with meshing. The canoe was then casted, cured and other finishing works were performed. Time and Cost analysis were performed. The mass of the canoe was found to be 55 kgs with concrete density of 1050 kg/m<sup>3</sup>. The light weight concrete canoe can be used for any rescue operation in case of flood.



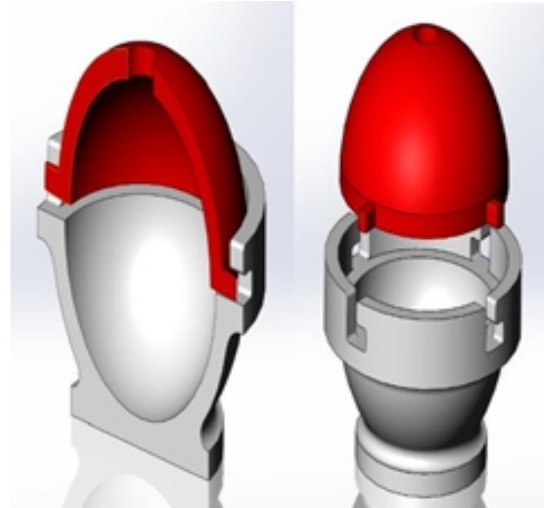
### Project – CHOLAN

The CHOLAN concrete canoe team identified the environmental impact of concrete construction as a major contemporary concern, and therefore set out to develop the most sustainable concrete canoe possible. The hull design team focused on developing a streamlined profile that minimized drag forces while improving stability and tracking. Strength and stability analysis of the design was done. The implementation of fly-ash concrete, utterly devoid of Portland cement reduced the canoes global warming potential by 35% compared to the Portland cement-based product used in previous years. Carbon fibre mesh is used as reinforcement; fibres increase flexure, shear, and axial load capacity. It increases impact resistance to provide blast mitigation. The cost of a one-person fibre canoe is around Rs18,900. When compared to fibre canoe, the concrete canoe is cheaper.



## Analytical and Experimental Investigation of Basalt Fibre Reinforced Concrete Shotput Ball

The students of ASCE SRM conducted an analytical and experimental investigation on basalt fibre reinforced concrete shot-put ball. The shotput ball was fabricated using various composite materials as it required high impact strength for which high performance fibre reinforced concrete (HPFRC) containing up to 1% volume fraction of chopped Basalt fibers was incorporated in the mix, the mix was designed such that proper workability is attained so that it can be molded in the required shape of a standard shotput ball, the model being made using a 3D printer.



## Pre-Fabricated Ferrocement Toilet System

The students of ASCE SRM student chapter implemented a pre-fabricated ferrocement toilet system. Twin pit toilet system consists of superstructure (Toilet) and treatment units (two chambers). The two underground chambers (pits) are provided to hold fecal sludge. These are normally offset from the toilet and should be at least 1 meter apart. Size options for Toilet/ Super Structure: 1000 mm x 1200 mm x 1900mm. Material – Brick work (as per Fig.) / FRP/ Pre-cast Cylindrical Unit. Minimum Land Requirement – 40 Sq. ft. - 60 Sq. ft. (depending upon the location of superstructure and distance between two pits). A single pipe leads from the toilet to a small diversion chamber, from which separate pipes lead to the two underground chambers. The pits should be lined with open jointed brickwork. Each pit should be designed to hold at least 12 months accumulation of fecal sludge.

