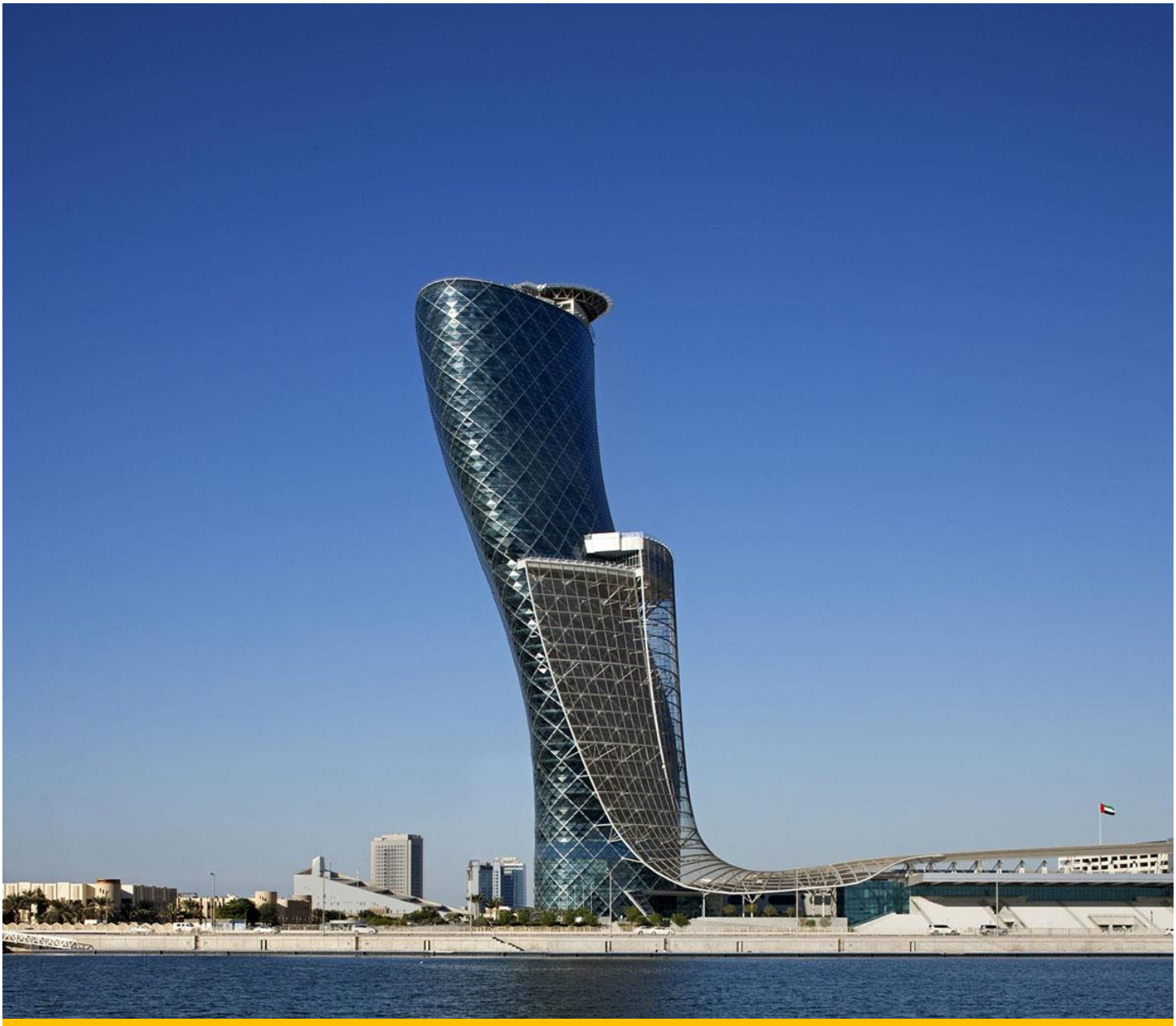

EDIFICE

The Biannual Newsletter of the Department of Civil Engineering

Volume 4 July 2019 Issue 1

EDIFICE

THE BIANNUAL NEWSLETTER OF THE DEPARTMENT OF CIVIL ENGINEERING

JULY 2019
Volume 4 Issue 1

DEPARTMENT OF CIVIL ENGINEERING,
SSN COLLEGE OF ENGINEERING,
KALAVAKKAM, CHENNAI
www.ssn.edu.in

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Cover Photo: Capital Gate Tower, Abu Dhabi, UAE

Inside This Issue

FROM THE HOD'S DESK

It gives me immense pleasure in presenting to you the fourth volume of EDIFICE, on behalf of the department of Civil Engineering.

The newsletter brings out the achievements of our students, faculty and alumni in curricular, Co-curricular and extra-curricular activities. The department maintains active research groups in the field of Concrete composites, Structural, Geotechnical and Environmental Engineering. The faculty along with the students have published a total of thirty papers in indexed journals and Conference proceedings and my congratulations to all. Like previous years, the department has conducted number of activities including Guest lecture, Seminar and an International Conference. My special thanks to all the Keynote speakers and Springer Nature for the publication of select Conference proceedings of SPICE 2019. I hope that many more activities will take place in the years to come with the support from students and faculty.

I appreciate and thank the editorial team for their sincere effort in bringing the current edition of the newsletter.

Dr. S. Ramana Gopal

Helix Bridge, Singapore

1. **Sivakumar, N.,** Masimawati Abdul Latif, Hashim Abdul Razak, Kamal Nasharuddin Mustapha, Salmia Beddu, Mahalingam, B., Elangovan, G., (2019), "Mechanical properties and Durability of Calcium Carbide Kiln Dust Mortar", International Journal of Civil Engineering and Technology, Vol. 10, No. 1, pp. 315-326.

2. **James**, **J.,** (2019), "Strength Benefit of Sawdust/Wood Ash Amendment in Cement Stabilization of an Expansive Soil" Revista Facultad de Ingenieria, Vol. 28, No. 50, pp. 44-61.

3. **Sabapathy, Y. K.,** Sathyapriya, S., Manimanickam, RM., Mukul Anand, B., Harikrishnan, A., Shrinidhi, A., (2019), "Flexural Strength of Engineered Glass Fiber Reinforced Concrete Beams", International Journal of Civil Engineering and Technology, Vol. 10, No. 1, pp. 2044-2051.

4. Nirmala, R., **Rajkumar, R.,** (2019), "Experimental and Parametric Studies of Buried Un-Plasticized Poly Vinyl Chloride Pipes", International Journal of Civil Engineering and Technology, Vol. 10, No. 1, pp. 2439-2445.

5. **Vijayalakshmi, R.,** (2019), "Analysis of Helical Piles with Case Study in Medium Stiff Clay", Indian Journal of Science and Technology, Vol. 12, No. 6, pp. 1-10.

6. **Sabapathy, Y. K.,** Ravichandar, D., Pown Krishnan, Sai Likitha Krishna, Sooraj, K., Jai Vigneshwar, A., (2019), "Study on Influence of Steel Slag in Concrete Hollow Blocks", Research Journal of Pharmaceutical, Biological and Chemical Sciences, Vol. 10, No. 1, pp. 1059-1065.

7. **James, J.,** Archana James, Arun Kumar, Elumalai Gomathi, Kamal Prasath, K., (2019), "Plasticity and swell shrink behaviour of electrokinetically stabilized virgin expansive soil using calcium hydroxide and calcium chloride solutions as Cationic Fluids", Civil and Environmental Engineering Reports, Vol. 29, No. 1, pp 128-146

8. **Rajkumar, R.,** Lakshman Prasath, N., Sharon, V., Aravindh, R., Gokula Krishnan, B., (2019), "Experimental Investigation on the Strength Characteristics of Concrete Made with Metakaolin Foundry Sand and Demolition Waste", International Journal of Civil Engineering and Technology, Vol. 10, No. 4, pp. 1089-1099.

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9. **Sivapriya, S. V.,** Rahul Ramanathan, (2019), "Load-displacement behaviour of a pile on a slopping ground for various L/D ratios", Slovak Journal of Civil Engineering, Vol. 27, No. 1, pp. 01-06

10. **Sivapriya S. V.,** Ganesh Kumar, S., (2019), "Functional and Cost benefits of Geo Synthetics as subgrade reinforcement in the design of flexible pavement", Revista Facultad de Ingenieria, Vol. 28, No. 51, pp. 39-49.

11. **Sangeetha, P.,** Shanmugapriya, M., (2019), "Numerical Study on FRP Wrapped Concrete Columns under Compression", Indian Journal of Science and Technology, Vol. 12, No. 15, pp. 01-07.

12. Saraswathy R., **James, J.,** Kasinatha Pandian, P., Sriram, G., Sundar, J. K., Swarna Kumar, G., Sathish Kumar, A., (2019) "Valorisation of Crushed Glass as a Potential Replacement for Sand in Manufacture of Cement Stabilized Flyash Bricks", Civil and Environmental Engineering, Vol. 15, No. 1, pp. 48-57.

CONFERENCE PUBLICATIONS

1. **Sangeetha, P.,** Shanmughapriya, M., Manjula, R., and Amrutha, U., (2019), "Experimental and analytical study on the behaviour of the steel-concrete composite beam", In Procs. of the Second International conference on Sustainable Energy Resources, Materials and Technologies (ISERMAT-2019), 14th & 15th March 2019, Department of Mechanical Engineering, SSN College of Engineering, Chennai, India.

2. **Sangeetha, P., Ramanagopal, S.,** Jai Vigneshwar, A., Shrinidhi, A., and Vaishnavi, K., (2019), "Study on the Behaviour of the Cold formed steel box struts under axial compression", In Procs. of the Second International conference on Sustainable Energy Resources, Materials and Technologies (ISERMAT-2019), 14th & 15th March 2019, Department of Mechanical Engineering, SSN College of Engineering, Chennai, India.

3. **Sangeetha, P.,** (2019), "Study on shape and texture of different types of fine aggregate used in concrete using foldscope", In Procs. of the National Conference 'MICROCOSMOS 2019' on 23rd March, 2019, Dr. B. R. Ambedkar Institute of Technology, Pahargaon, Port Blair, Andaman & Nicobar Islands, India.

4. **Sivakumar, N.,** Salmia Beddu, Muhammad Zulfiqar Ajmul Khan, Jegatheish Kanadasan, Zakaria Che Muda, Siti Nabihah Sa'don, **Mahalingam, B.,** (2019), "Composite Leaching of Thermal Power Plant Bottom Ash to Ensure its Performance on Cement Mortar", In Procs. of the International Conference on Sustainable Practices and Innovations in Civil Engineering (SPICE 2019), 26th & 27th March, 2019, Department of Civil Engineering, SSN College of Engineering, Chennai, India.

5. **Sivakumar, N.,** Salmia Beddu, Muhammad Zulfiqar Ajmul Khan, Jegatheish Kanadasan, Zakaria Che Muda, Siti Nabihah Sa'don, **Mahalingam, B.,** (2019), "Enhancing the Performance of Bottom Ash Using Acid Leaching Method", In Procs. of the International Conference on Sustainable Practices and Innovations in Civil Engineering (SPICE 2019), 26th & 27th March, 2019, Department of Civil Engineering, SSN College of Engineering, Chennai, India.

6. **James, J.,** (2019), "Management of Phosphogypsum Waste through Reuse in Soil Engineering Applications: A Review", In Procs. of the International Conference on Sustainable Practices and Innovations in Civil Engineering (SPICE 2019), 26th & 27th March, 2019, Department of Civil Engineering, SSN College of Engineering, Chennai, India.

7. **Sangeetha, P., Vijayalakshmi, R.,** Aadhitya Jagadeesh, Ahalya, S., Deveshwar, K., Swarna Varshini, D., (2019), "Push-out Tests for Determining the Strength and Stiffness of The Channel Connectors – Experimental Study", In Procs. of the International Conference on Sustainable Practices and Innovations in Civil Engineering (SPICE 2019), 26th & 27th March, 2019, Department of Civil Engineering, SSN College of Engineering, Chennai, India.

8. **Sangeetha, P., Ramanagopal, S.,** Amrutha, U., Balasubramaniam, A., Madhumitha, V., Arun, G., (2019), "Study on The Behaviour of The Headed Stud Connector in Composite Structure", In Procs. of the International Conference on Sustainable Practices and Innovations in Civil Engineering (SPICE 2019), 26th & 27th March, 2019, Department of Civil Engineering, SSN College of Engineering, Chennai, India.

9. **Sivapriya, S. V.,** (2019), "Compaction Characteristics of Modified Clay Soils with Various Proportions of Crumb Rubber", In Procs. of the International Conference on Sustainable Practices and Innovations in Civil Engineering (SPICE 2019), 26th & 27th March, 2019, Department of Civil Engineering, SSN College of Engineering, Chennai, India.

10. **Sabapathy, Y. K.,** Nithish, V., Vishnuvaradan, S., Udhaya Prabhu, K., Mukeshwaraa, S., (2019), "Shear Behaviour of Concrete Wall Panels Reinforced with FRP Bars", In Procs. of the International Conference on Sustainable Practices and Innovations in Civil Engineering (SPICE 2019), 26th & 27th March, 2019, Department of Civil Engineering, SSN College of Engineering, Chennai, India.

11. **Ramanagopal, S.,** (2019), "Behaviour of Concrete Filled FRP Tubular Columns Under Axial Compression", In Procs. of the International Conference on Sustainable Practices and Innovations in Civil Engineering (SPICE 2019), 26th & 27th March, 2019, Department of Civil Engineering, SSN College of Engineering, Chennai, India.

12. **Sabapathy, Y. K.,** Nitish, C. N. A., Sajid Ali, Priyadarshini, K. P., (2019), "A Study on Flexural Strength of Concrete Beams Reinforced with Manually Pultruded GFRP Bars", In Procs. of the International Conference on Sustainable Practices and Innovations in Civil Engineering (SPICE 2019), 26th & 27th March, 2019, Department of Civil Engineering, SSN College of Engineering, Chennai, India.

13. Manjula, R., **Sivapriya, S. V.,** (2019), "Installation of Sand Compaction Piles and Its Advantages", In Procs. of the International Conference on Sustainable Practices and Innovations in Civil Engineering (SPICE 2019), 26th & 27th March, 2019, Department of Civil Engineering, SSN College of Engineering, Chennai, India.

14. Gokul Krishna, J., Roshan, R, Vinothini, S. N., **Sivapriya, S. V.,** (2019), "Glass Fibre Reinforced Gypsum (GFRG) as an Emerging Technology", In Procs. of the International Conference on Sustainable Practices and Innovations in Civil Engineering (SPICE 2019), 26th & 27th March, 2019, Department of Civil Engineering, SSN College of Engineering, Chennai, India.

CONFERENCE PUBLICATIONS

15. **James, J.,** (2019), "Effect of Organic Coconut Shell Powder on The Strength, Mineralogy and Microstructure of a Lime Stabilized Expansive Soil", In Procs. of the International Conference on Sustainable Practices and Innovations in Civil Engineering (SPICE 2019), 26th & 27th March, 2019, Department of Civil Engineering, SSN College of Engineering, Chennai, India.

16. Mugesh, A., Niranjan, J., Gunalan, S., **Sivapriya, S. V.,** (2019), "Immediate Load-Penetration Behaviour of Sand Piles with Sustainable Material", In Procs. of the International Conference on Sustainable Practices and Innovations in Civil Engineering (SPICE 2019), 26th & 27th March, 2019, Department of Civil Engineering, SSN College of Engineering, Chennai, India.

17. **Sabapathy, Y. K.,** Sabarish, S., Nitish, C. N. A., Gokul Krishna, J., (2019), "ALU-FORM Construction Technology", In Procs. of the National Conference on Recent Trends in Architecture & Civil Engineering towards Energy Efficient and Sustainable Architecture, 2019, 10th to 12th January 2019, National Institute of Technology, Tiruchirappalli, India.

BOOK CHAPTERS

Mahalingam, B., Sreehari, P., Rajagopalan, S., Ramanagopal, S., Haneefa, K. M., (2019), "Mechanical Characterization and Robustness of Self-compacting Concrete with Quarry Dust Waste and Class-F Fly Ash as Fillers", A. K. Lakshminarayan et al. (Eds.), Advances in Materials and Metallurgy, Lecture Notes in Mechanical Engineering, Springer Singapore, pp. 365-373.

EVENTS ATTENDED

1. **Dr. R. Rajkumar** attended a One-day seminar on "Structural and Durability Performance of Post-Tensioned Bridges and Buildings" on 12th April, 2019, organized by IIT Madras, Chennai, India.

2. **Dr. P. Sangeetha** participated in a Two days National Seminar & Exhibition on Global Trends in Concrete - Steel Composite Structures - Design & Construction during 10th & 11th May, 2019, at NIMHANS Convention Centre, Bengaluru organized by Association of Consulting Civil Engineering (India) Bangalore Centre.

FACULTY RECOGNITION

1. **Dr. S. Ramanagopal** has been appointed as a member of the Board of Studies of the Department of Civil Engineering, Velammal Engineering College (Autonomous), Chennai, India.

2. **Dr. P. Sangeetha**, Associate Professor delivered an Invited Lecture on "Recent Trends in Structural Engineering" on 9th January, 2019 at SMK Fomra Institute of Technology, Chennai, India.

3. **Dr. R. Rajkumar**, Associate Professor received a RULA International Award "Research Ratna Award 2019", recognized by World Research Council and United Medical Council as Best Researcher in Civil & Structural Engineering for the Excellence of Robotics in Civil Engineering on 26th February 2019.

4. **Dr. S. V. Sivapriya**, Associate Professor delivered an Invited Lecture on "Soil Mechanics - An Overview" on 11th March, 2019, at Sri Venkateswara College of Engineering, Sriperumbudur, India.

5. **Dr. N. Sivakumar**, Professor, reviewed a manuscript for the Journal of Environmental Management, published by Elsevier B.V., Amsterdam, Netherlands.

6. **Dr. Jijo James**, Associate Professor, reviewed a total of six manuscripts for the Journals, Journal of Rock Mechanics and Geotechnical Engineering, published by Elsevier B.V., Amsterdam, Netherlands, Canadian Journal of Soil Science, published by NRC Press, Canada, Journal of Solid Waste Technology and Management, published by Widener University, Pennsylvania, USA and Indian Journal of Science and Technology, published by Indian Society of Education and Environment, Chennai, India.

7. **Dr. N. Sivakumar, Dr. R. Rajkumar, Dr. P. Sangeetha, Dr. R. Vijayalakshmi, Dr. Srinath Rajagopalan, Dr. S.V. Sivapriya** and **Dr. Jijo James,** served as peer reviewers for the International Conference, SPICE 2019, organized by the Department of Civil Engineering, SSN College of Engineering, held on the 26th and 27th of March, 2019.

Henderson Waves Bridge, Singapore

Standing 120 feet high, the 900-foot-long Henderson Waves Bridge is the highest pedestrian bridge in the country. True to its name, this bridge takes on a unique wave like form, quite resembling a huge, undulating snake!

A one-day seminar on “Subsurface Engineering – Problems and Solutions” was organized by the Department of Civil Engineering, SSN College of Engineering on the 7th of February 2019. The event was coordinated by Dr. S.V. Sivapriya, Associate Professor in Civil Engineering. The seminar comprised of two session with two eminent faculty members delivering the expert lecture in the sessions. The expert talk in the morning session was delivered by Dr. S. Bhuvaneshwari, Associate Professor in Civil Engineering, SRM Institute of Science and Technology, Kattankulathur. She introduced the area of subsurface engineering and gave an overview of the various problems faced during subsurface exploration and countermeasures available to mitigate them through ground improvement techniques. The afternoon session was helmed by Dr. S. Karthikeyan, Professor, Division of Soil Mechanics and Foundation Engineering, Department of Civil Engineering, Anna University, Chennai. He enlightened the students about soft soil conditions and how they can be treated using the stone column technique of soil improvement. Overall, the students were exposed to the various difficult subsoil conditions and how they can be overcome by the various available techniques.

Dr. S. Bhuvaneshwari Presenting her Lecture in the Seminar

Student Participants at the Seminar

An expert guest lecture on the "Practical Design of Steel Structures" was organized by the Department of Civil Engineering on the 13th of February 2019 for the benefit of third and final year students of Civil Engineering. The event was coordinated by Dr. N. Sivakumar, Professor in Civil Engineering. Colonel Dr. P. Nallathambi, Principal Consultant, M/s. Sakthi Consultancy Pvt. Ltd., Chennai was the guest speaker. As a former army man, he enlightened the students about the importance of steel in army operations and army structures and explained to the students about the various aspect of design of steel structures in a simple and lucid manner. The session was lively with several photographs and videos from the Colonel's vast field experience. The students also eagerly put forward their doubts, which were patiently handled by the expert speaker.

Col. Dr. P. Nallathambi Presenting his Lecture

Student Participants at the Lecture

INTERNATIONAL CONFERENCE - SPICE 2019

The Department of Civil Engineering organized its First International Conference on Sustainable Practices and Innovations in Civil Engineering (SPICE 2019) on the 26th and 27th of March, 2019. The theme of the conference was achieving sustainability in the practice of Civil Engineering with sub themes of materials, technologies, processes and practices. With the intention of providing a sound platform for sustainability research, this conference, SPICE 2019, was conceived.

The call for papers opened on the 10th of October 2018. The call for papers received a good response with manuscripts coming even from distant institutions like NIT Arunachal Pradesh and institutions of repute like NIT Raipur, IIT Madras, BITS-Hyderabad, Anna University, SASTRA, SRM University, Annamalai University, CBRI-Roorkee, University Tenaga Nacional, Malaysia and NUS, Singapore. All papers received for the conference were subjected to a screening for plagiarism using a software Plagiarism Checker X and papers passing the screening process were put through a double-blind peer review system for checking the quality of the received articles. The conference was ably supported by peer reviewers from universities in the U.S., Malaysia and India.

Six keynote sessions covering various facets of sustainability in Civil Engineering like sustainable materials, sustainable geotechnical systems, water resources management, sustainability in built environment and sustainable urban development have been arranged. Participants presented their papers in three themed paper presentation sessions on Structural and Material systems, Environmental and water resources systems and geotechnical systems. Springer Nature acceded to publish the full texts of the presented conference papers as a book in their Lecture Notes in Civil Engineering Series. Dr. Karthik Venkatraman, Associate Professor, Department of Engineering and Computer Science, Tarleton State University, USA, Dr. G. Madhavi Latha, Professor, Department of Civil Engineering, Indian Institute of Science, Bengaluru graciously accepted to serve as Editors for the book along with Dr. S. Ramanagopal, Professor and Head, Department of Civil Engineering, SSN College of Engineering, Chennai. On the whole, the conference was a grand success.

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KEYNOTE SPEAKERS

Dr. U. Johnson Alengaram

Director, Centre for Innovative Construction Technology, Faculty of Engineering, University of Malaya, Malaysia

Dr. G. Madhavi Latha

Professor, Department of Civil Engineering, Indian Institute of Science Bangalore, Bengaluru

Dr. V. Jothi Prakash

Professor, Department of Civil Engineering, Indian Institute of Technology Bombay, Mumbai

Dr. P. Paramasivam

Visiting Research Professor, National University of Singapore, Singapore

Dr. Sivakumar Palaniappan

Asst. Professor, Department of Civil Engineering, Indian Institute of Technology Madras, Chennai

Dr. S. Lakshmi

Professor & Head, Division of Transportation Engineering, College of Engineering Guindy, Anna University, Chennai

Release of the Conference Proceedings at the Inauguration of SPICE 2019

Participants at SPICE 2019 Conference

Chief Guest Addressing the Gathering

AWARENESS PROGRAMME - SHAPE 2019

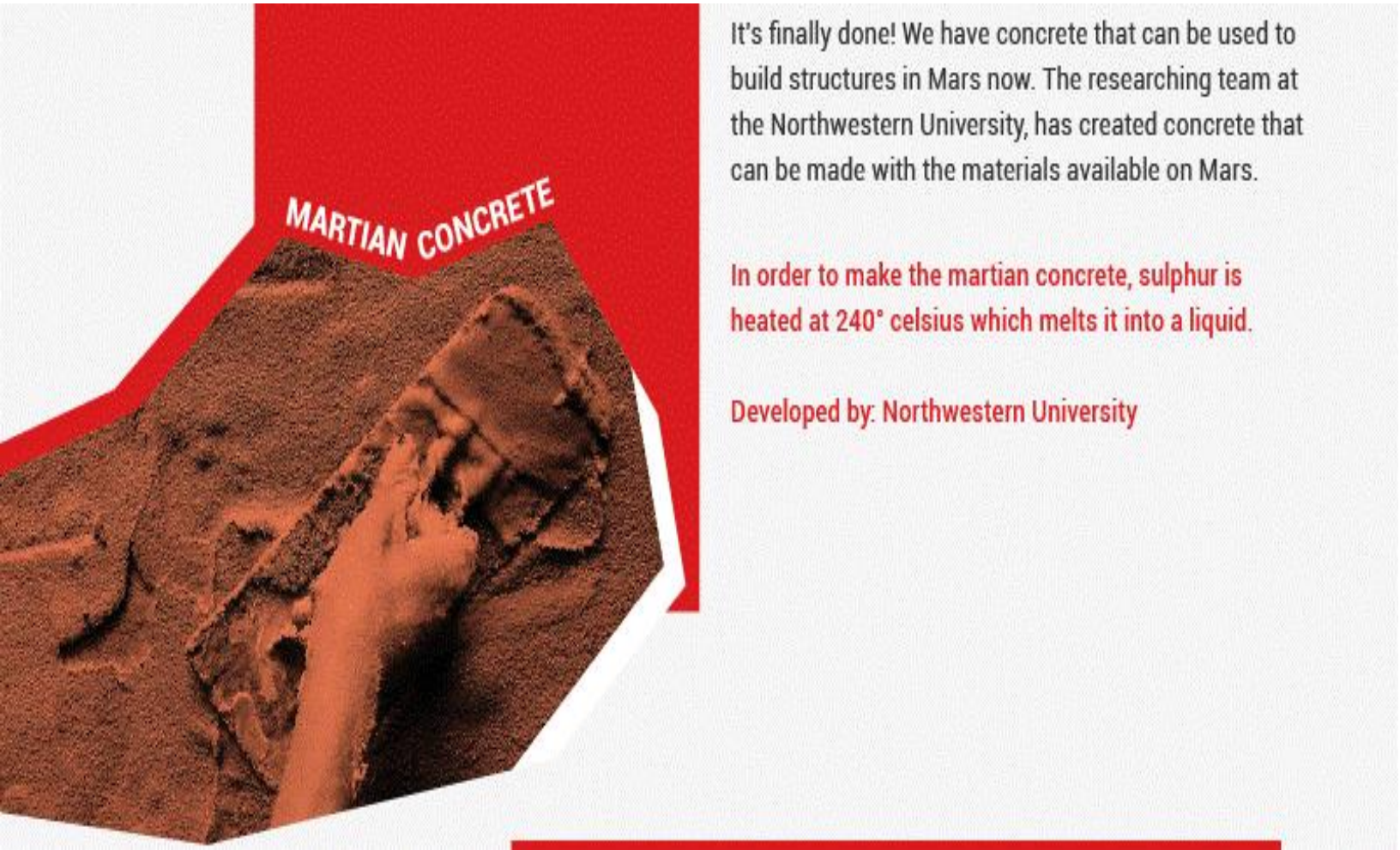
The SSN Higher Secondary School Students Awareness Programme for Engineering was held between the 30th of April to 11th of May 2019. The ten day programme intends to raise the awareness of students in XI class and enable them make an individual choice of further study or career. SHAPE 2019 had students from different schools in the city such as DAV (Boys), DAV (Girls), PSBB (Nungambakkam), PSBB (KK Nagar), PSBB (Siruseri), PS Senior Higher Secondary SChool, PS Matric Higher Secondary School, Hindu HIgher Secondary School, and Jagannath Vidyalaya. During the programme, the participants (interns) have an opportunity to visit all the engineering departments (different branches) during which the senior faculty and the senior students help these interns to have a basic understanding of every branch of engineering. Each of the interns, is then, given an individual project and attached to a faculty for guidance. Other than working on a technical project, the interns are also trained in Communication Skills, exposed to SSN Library, and Sports facilities. During their visit to the Department of Civil Engineering, the students were welcomed by the Head of the Department, Dr. S.Ramanagopal, followed by a brief introduction of the Department of Civil Engineering. This was followed by a brief lecture on the field of Civil Engineering by Dr. N. Sivakumar, Professor in Civil Engineeering, in which he touched upon the sub- sections of the Civil Engineering stream and the role and responsibilites of a Civil Engineer. Following the lecture, the students were taken on a visit to the various laboratories of Civil Engineering, where the individual laboratory incharges gave a brief talk on the importance of the individual laboratories and the various equipment available in the laboratories. Hopefully, SHAPE would have been an eye opener for the XI standard students to look at a broader spectrum of opportunities out there. They were also enabled to make the right and informed choices for their future.

The President addressing the students at the inauguration of SHAPE 2019

The students visiting one of the Labs in Civil Engineering during SHAPE 2019

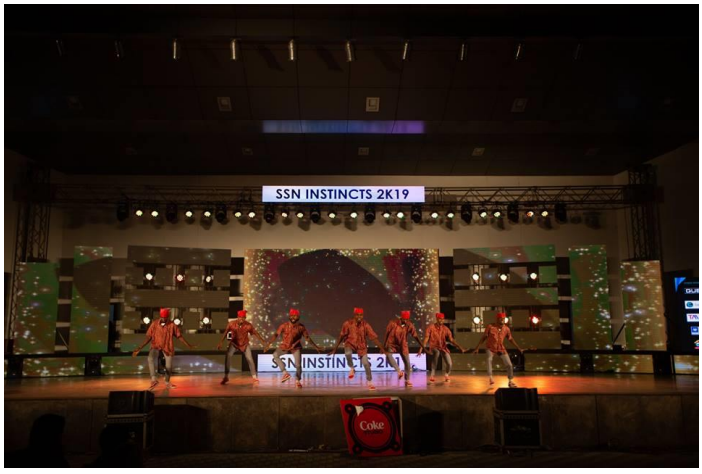
BOARD OF STUDIES MEET

The second Board of Studies meeting of the Department of Civil Engineering was held on the 10th of April 2019 in the EEE seminar hall. The second meeting was convened to finalize the syllabus for B.E., Civil Engineering course offered by the Department of Civil Engineering under the autonomous regulation of SSN College of Engineering in Choice Based Credit System Mode. The meeting was attended by the external members including Dr. S. Nallayarasu, Professor, IIT Madras, Chennai, Dr. S. Kanmani, Professor and Dr. C. Umarani, Professor, Department of Civil Engineering, College of Engineering, Anna University, Chennai, Dr. V. Balakumar, Senior Consultant, Simplex Infrastructure, Chennai, Ms. N. Sivashankari, Alumnus, SSN College of Engineering and the Faculty members of the Department of Civil Engineering, SSN College of Engineering. The meeting began at 10.30 am with the Head of the Department of Civil Engineering, Dr. S. Ramanagopal, welcoming the members of the Board followed by the presentation of the syllabus details for the various subjects of the curriculum finalized in the first meeting. The members provided feedback and suggestions for several subjects which was duly noted down. The meeting ended at 1.30 pm followed by luncheon for the external board members.



The annual SSN cultural event Instincts 2019 was held between 7th and 9th of March 2019. The theme of the cultural event for this edition was 'Relive the 90s'. The 14th edition of Instincts was a three-day fiesta of live music, enchanting and enriching exhibitions, workshops, theatricals, films, dance and competition.

The festival featured over 60 events in multiple genres such as English & Tamil Literary, Theatricals, Quiz, Photography, Film, Variety Entertainment, Music and Dance. Other major attractions included the Launch, the Professional Show, the Choreo Night, Bike Stunts, Martial Arts Demonstration and the Variety show.



Instincts 2K19 in Collage

GRADUATION DAY 2019

SSN College of Engineering, one of the premier and preferred institutes in Tamil Nadu for technical and management education, conducted its Nineteenth Graduation Day on 17th March, 2019. Prof P. Balaram, Former Director IISc, Bangalore was the chief guest for the occasion, awarded medals and certificates to the graduands.

There were 832 undergraduate and 210 Masters students totalling 1042, who graduated with flying colours. This batch had 112 University ranks with 4 gold medalists, 1 from undergraduate courses and 3 from Masters courses. A total of 187 top notch companies visited the campus for placements, the prominent ones included Facebook, Google, Apple, Amazon, Goldman Sachs, Bloomberg, Directi, Ashok Leyland, Hyundai, Daimler, Royal Enfield, Dow chemicals, Mu Sigma, L&T group, TVS group, CTS, Infosys TCS and HCL.

The Chief Guest presenting his Graduation Day Address

Graduands in Rapt Attention

Student of Civil Engineering Receiving his Degree

SSN Institutions celebrated its Research Day on April 5, 2019. Dr. Brij Mohan Arora, Former Director, Tata Institute of Fundamental Research was the chief guest on the occasion. Faculty, Research scholars and students were honored with awards and cash prizes under 14 categories.

Every year SSN funds over 200 innovative student projects with an average grant of Rs.25,000 per project. A total amount of over Rs. 2.00 Crore had been granted to students and around Rs. 5 Crore for faculty till date.

In the year 2018-19 SSN has published over 575 papers in International Journals and SSN students have published over 200 papers in international journals.

Release of Research Papers published by SSN Faculty Members and Students

Students of Civil Engineering Receiving Cash Incentives on Research Day 2019

The 2019 Annual SSN Alumni Meet, TRIBUTE 2019, was held on the 5th of January 2019. The meet saw a very enthusiastic participation from SSN Alumni from different batches. The meet had several events organized for the alumni to enable them to enjoy the day and bring back fond memories of their college days.

A Collage of the Day's Events at TRIBUTE 2019

SMART INDIA HACKATHON 2019

SSN College of Engineering hosted the World's largest Hackathon – The Smart India Hackathon 2019 edition on the 2nd and 3rd of March 2019. 35 top teams across the country participated in the SIH 2019, solving problem statements from the Ministry of Agriculture, ICAR and Ministry of Water Resources. The Finale was inaugurated by Mr. V. Shankar, CAMS Private Limited. The finalists were mentored by the professionals from leading Govt organizations and corporate institutions. The event was also organized across 48 centers in the country involving 1 Lakh+ technical students, 3000+ technical institutions, 200+ organizations who worked non-stop for 36 hours to build digital solutions towards national problems. 7 teams from SSN declared winners at Smart India Hackathon 2019.

Inauguration of Smart India Hackathon 2019

Participants and Guests at Smart India Hackathon 2019

36 Hours of Coding at Smart India Hackathon 2019

INNOVATION DAY 2019

SSN Celebrated its first Innovation Day on February 8, 2019. Dr. Ashok Jhunjunwala, Institute Professor at IIT Madras, Chennai was the Chief Guest of the program and addressed the gathering.

Around 32 carefully selected project teams displayed the innovative projects and Over 50 representatives from leading companies evaluated the projects and given their valuable suggestions to commercialize the same. The Top teams were felicitated with cash awards.

Inauguration of the First SSN Innovation Day

Civil Students Presenting their Innovative Project

Company	Name of the Students
Indus Instruments, Velachery, Chennai	Ms. J. Janani, II Yr.
Eversendai Constructions Pvt. Ltd., Chennai	Ms. Raghamalavika, II Yr.
Navin Housing and Properties Pvt. Ltd., Chennai	Ms. S. Tharanya, III Yr.
	Mr. P. Sabareesshwaran, III Yr.
	Ms. S. Sweatha, III Yr.
	Mr. S. Santhosh, III Yr.
	Ms. G. Gayathri, III Yr.
Architectural Design Centre, Tirunelveli	Mr. M. Vishal
Neyveli Lignite Corporation India Ltd., Neyveli	Ms. G. Supraja, II Yr.
	Ms. Shalini Devi, II Yr.
	Ms. A. Bargavi, II Yr.
	Ms. R. Lakshmi Priya, II Yr.
	Ms. S. Nandhini, II Yr.
	Ms. G. Sujithasrini, II Yr.
Chennai Metro Rail Ltd., Chennai	Ms. A. Anne Sherin, II Yr.
	Ms. P. Monika, II Yr.
	Mr. S. K. Divakar, II Yr.
	Mr. G. Deenadayalan, II Yr.
	Mr. T. Gopi, II Yr.
	Ms. M. Ashwini, III Yr.

Company	Name of the Students
Southern Railway, Chennai	Ms. Keerthika Ramesh, II Yr.
	Mr. K. Nilesh, II Yr.
	Mr. B. David Arunraj, II Yr.
	Ms. M. Vaishnavi, II Yr.
	Mr. S. M. Arulselvan, II Yr.
	Mr. A. Modhagapriyan, II Yr.
	Mr. V. Haswanth, II Yr.
	Ms. S. N. Vinothni, II Yr.
Technip FMC	Ms. N. Anupriya, II Yr.
Dow Chemicals	Ms. B. Sruthi Reddy, III Yr.
	Ms. N. S. Thamizh Prabha, III Yr.

Dr. José Carlos Rubio Ávalos from UMSNH of Morelia, has created cement that has the ability to absorb and irradiate light. With this new light generating cement the potential uses and application of it can be huge.

Energy usage is low because the cement can be created at room temperature.

Developed by: UMSNH of Morelia

1. **Mr. M. Harish Kumar**, II year Civil, participated as a player in the 80th Senior National & Inter-State Table Tennis Championships - 2018 held at Cuttack (Odisha) from 4th to 9th January 2019

2. **Ms. Kavya L** and **Mr. Gokul Krishna J**, III year Civil, participated in the KPMG Innovation & Collaboration Challenge, 2018-19 Semi Finals during 4th & 5th January 2019, held in Bangalore.

3. **Mr. M. Harish Kumar**, II year Civil, represented SSN in ARENA 2019 Table Tennis Tournament in January 2019 at BITS Hyderabad.

4. **Mr. P. Rajkumar**, I year Civil, represented SSN in ARENA 2019 Badminton Tournament at BITS Hyderabad and won 1st Place in January 2019.

5. **Mr. V. Haswanth**, II year Civil, participated in the Riviera Football Tournament conducted by VIT, Vellore and won the Runner-up Position in February 2019

6. **Ms. R. Manjula**, III year Civil, participated in the Colosseum 2019 Chess Tournament representing SSN in SASTRA University and won 1st Position in February 2019.

7. **Mr. S. Dinesh Kumar**, I year Civil, participated in the Colosseum 2019 Basketball Tournament as a part of SSN Team in SASTRA University and won 1st Position in February 2019.

8. **Mr. P. Rajkumar**, I year Civil, participated in the Colosseum 2019 Badminton Tournament representing SSN in SASTRA University and won 1st Position in February 2019.

9. **Mr. VE. S. Naresh Ashwen**, I year Civil, participated in the PSG Interstate Tournament for Sepak Takraw and won 3rd Place at PSG College of Engineering, Coimbatore in February 2019.

10. **Ms. R. Manjula**, III year Civil, participated in the SSN Trophy Chess Tournament and was placed in the top 10 places in February 2019.

11. **Mr. S. Dinesh Kumar**, I year Civil, participated in the Basketball Tournaments as a part of SSN Team in Kumarasamy College of Engineering, Karur and Sri Venkateshwara College of Engineering, Chennai and won 2nd Position in both in the month of March 2019.

12. **Mr. P. Rajkumar**, I year Civil, participated in the SSN Intra College Sports Meet and won 2nd Place in the Badminton Tournament in March 2019.

13. **Mr. VE. S. Naresh Ashwen**, I year Civil, participated in the SSN Intra College Sports Meet and won 3rd Place in the 4 x 100m Relay in March 2019.

14. **Mr. V. Krishna Kumar**, II year Civil, participated and won Silver medal in the National level Taekwondo tournament representing Anna University, held in Haryana during 9th – 17th March 2019.

தேசிய டேக்வாண்டோ சாம்பியன்
அண்ணா பல்கலை அசத்தல்

தேசிய டேக்வாண்டோ போட்டியில், வெள்ளி மற்றும் வெண்கலப் பதக்கம் வென்ற, அண்ணா பல்கலை மாணவ – மாணவியர்.

சென்னை, மார்ச் 20–
ஹரியானா மாநிலத்தில் உள்ள, மகரிஷி தயானந்தா பல்கலைக்கழகம் சார்பில், தேசிய பல்கலைகளுக்கு இடையிலான, டேக் வாண்டோ போட்டி, சமீபத்தில் நடந்தது.
இதில், தமிழகத்தைச் சேர்ந்த அண்ணா பல்கலை உட்பட, பல்வேறு மாநிலங்களில் இருந்து, 50க்கும் மேற்பட்ட பல்கலை மாணவ – மாணவியர் பங்கேற்றனர்.
அதில், அண்ணா பல்கலையைச் சேர்ந்த, தலா 8 மாணவ – மாணவியர் பங்கேற்றனர். அவர்களில், மாணவர் பிரிவில், பாலாஜி, முரளி மற்றும் கிருஷ்ணா ஆகிய மூவரும், தனி நபர் மற்றும் அணி பிரிவில், வெள்ளிப் பதக்கங்களை வென்றனர்.
மாணவியர் பிரிவில், சிவசங்கரி, சத்தியபிரியா, சிவசக்தி ஆகியோர், வெண்கலப் பதக்கங்களைக் கைப்பற்றினர்.

V Krishna Kumar (first from right in Photo 1) of II Year B.E., Civil Engineering (Batch 2017-2021) with his Runner-up medal.

15. **Mr. P. G. Vikram**, I year Civil, participated in the Rubik's Cube Event of the WCA Official Competition and was placed in the top 20.

16. **Ms. Abinaya Sakthi**, I year Civil, participated in the Ball Badminton Tournaments at ACT Campus, S.A. Engineering College and SSN College of Engineering and won 3rd, 4th and 1st Places respectively.

17. **Ms. Abinaya Sakthi**, I year Civil, participated in the SSN Intra College Sports Meet and won 2nd Place in Squash, 2nd Place in Tennis and 1st place in Throwball in March 2019.

18. **Mr. M. Ragesh Raj**, I year Civil, participated in the SSN Intra College Sports Meet and won 2nd Place in Chess Competition in March 2019.

19. **Mr. A. Narenthiran**, and **Mr. M. S. Dharshan**, I year Civil participated in the SSN Intra College Sports Meet and won 3rd Place in Handball in March 2019.

20. **Mr. B. Mohan Kumar**, I year Civil, participated in the SSN Intra College Sports Meet and won 3rd Place in Cricket in March 2019.

21. **Ms. S. N. Vinothni,** II year Civil, participated in a titled Research Expo at IIT Madras conducted on 9th & 10th March, 2019 organized by CEAFEST ' 19.

22. **Ms. S. N. Vinothni,** II year Civil, participated in a technical event 'Civil Bridge Design' at IIT Madras conducted on 9th & 10th March, 2019 organized by CEAFEST ' 19.

23. **Mr. P. Bharath,** II year Civil, participated in the SSN Intra College Sports Meet and won 3rd Place in the Discus Throw Event in March 2019.

24. **Mr. P. Amaresh,** II year Civil, participated in the SSN Intra College Sports Meet and won 1st Place in 100m Dash and 200m Sprint and 2nd Place in Triple Jump and Long Jump, leading to the Individual Championship Award for the Year 2018-19 in March 2019.

25. **Ms. R. Manjula**, III year Civil, participated in the SSN Intra College Sports Meet and won 1st Place in Cricket, 2nd Place in Table Tennis, 2nd Place in Volley Ball and 3rd place in Carrom in March 2019.

26. **Ms. S. N. Vinothni,** II year Civil, participated in Summer School at Atal Bihari Vajpayee Centre for Leadership, Policy and Governance Programme from May 25, 2019 to May 29, 2019 at the Indian Institute of Management, Ranchi.

27. **Ms. S. N. Vinothni,** II year Civil, successfully completed the NPTL online certification course on "Electronics Waste Management Issues and Challenges" with a consolidated score of 91%.

28. **Mr. P. Bharath,** II year Civil, won the 1st Place in the Anna University Interzone Squash Tournament and participated in the All India University Squash Tournament.

29. **Mr. M. Harish Kumar**, II year Civil, participated in the Chief Minister's Trophy for Table Tennis and won Third Place in May 2019.

30. **Mr. M. Harish Kumar**, II year Civil, participated in the North Zone Ranking Table Tennis Tournament in Sonepat, Haryana in June 2019.

31. **Mr. S. Sabarish**, III year Civil and **Ms. C. M. Elakiya**, **Ms. R. Chitra Lekha** and **Ms. P. Shobana**, IV year Civil, from the Team of "Enthusiastic Environmentalists" have successfully completed Level - 1 of Carbon Zero Challenge 2019 during the month of June 2019.

Ramya Thulasi *(standing first from right) of B.E., Civil Engineering (Batch 2013-2017) has been selected to Represent Kovai Knockers in Premiere Badminton League*

Arun Alagappan *(standing fourth from left) of B.E., Civil Engineering (Batch 2011-2015) has been appointed as Analyst of the Under – 19 Indian Men's Hockey Team*

MY EXPERIENCE AT DOW

I pursued my internship at DOW chemicals from 6th May 2019 onwards at DOW CEC, Tamarai Tech Park, Guindy, Chennai. The period of internship was for 8 weeks. Er. D. Prasad was my Integrated Coach and Ms. Jamshia my Integrated Buddy. For the initial two weeks, I was given access to literature in EMETL (Electronic Most Effective Technical Library), which is the standard generally followed at DOW. Later, I designed a footing and base plate for Tee Support.

In the 3rd week, I learned STAAD Pro, a basic analysis software tool using which I worked for the remaining weeks. I analyzed Pipe Rack and checked for adequacy and strength for introduction of a new pipeline. With this task I got familiar with STAAD and also the lessons as to where, why and how to apply different loads on a structure.

As a project, I did design and analysis of a Stair Tower which is touted to be attached to an existing building. It is an SEP (Site Executive Project). Both Pipe Rack and Stair Tower was designed using American Codes, so I got familiar with American codes as well.

As a part of the internship, I was fortunate to visit Emulsion Plant Located at Sriperumbudur where I came to observe various types of foundations, pipe supports, trusses, bracing systems etc. We had safety orientation program that threw light on being cautious in a site and I attended a Mentorship Program too.

It was a very good learning experience at DOW that will help me to excel in my professional life. Because of this chance I learned a lot and came to understand how to deal with real time problems on site as a Civil Engineer.

Bijivemula Sruthi Reddy,

IV year, B.E., Civil Engineering

The impact on the environment is tremendous. Elements such as arsenic, chromium, nickel and cadmium enter the soil and harm nature.

In order to reduce the impact of cigarette butts on the environment, researchers at RMIT developed lighter and more energy efficient bricks made of cigarette butts. In short, innovatively utilizing waste in a much more eco-friendly manner.

On a yearly basis, 6 million cigarettes are manufactured and they produce 1.2 million tonnes of cigarette butt waste.

Developed by: RMIT

CIGARETTE BUTTS FOR BRICKS

BUILDER OF THE NATION – S.N. SUBRAHMANYAN

S. N. Subrahmanyan, MD and CEO of L & T started with the infrastructure behemoth in 1984 as a project planning engineer and joined the company's board in 2011. He took over his present position on 1 July, 2017.

Subrahmanyan, 56, has a civil engineering degree and is a postgraduate in business management. S .N. Subrahmanyan, or SNS as he is called within the company, has long been the front runner to succeed A.M. Naik, executive chairman of Larsen and Toubro Ltd (L&T). Along the way, he has overseen many of L&T's large projects such as securing and managing EPC contracts for the construction of four major international airports in India at Bengaluru, Hyderabad, Delhi and Mumbai.

Among his list of accomplishments are the mandates to build the tallest statue in the world – the Statue of Unity – and the development of dedicated freight corridors that will realign the dynamics of freight movement in the country. Mr. Subrahmanyan has spearheaded and won several large projects in Oman, Qatar, Abu Dhabi and Saudi Arabia like the Salalah Airport in Oman and a big interchange and road project in UAE. The Riyadh Metro project is one of the largest international orders bagged by L&T thus far; while the Doha Metro, the AL-Wakrah Road Project both in Qatar and the Abu Dhabi Airport airside works have been won in the face of stiff international competition. He has also led the spread into Africa and L&T Construction is already making its presence felt especially in North and East Africa. He has held and continues to play vital roles on various industry bodies, construction institutions and councils. Much awarded and recognized for his significant contributions, Mr. Subrahmanyan has been Construction Week magazine's 'Infrastructure Person of the Year – 2012', 'Contractor CEO of the Year' at the Qatar Contractors Forum & Awards function in 2014 in Doha, ranked 36th in '2014 Construction Week Power 100' and accorded the Leading Engineering Personality award in the event 'Glimpses of Engineering Personalities' by the Institution of Engineers (India). He has also been voted the 'Construction World – Man of the Year 2015' by Construction World magazine.

S.N. Vinothni

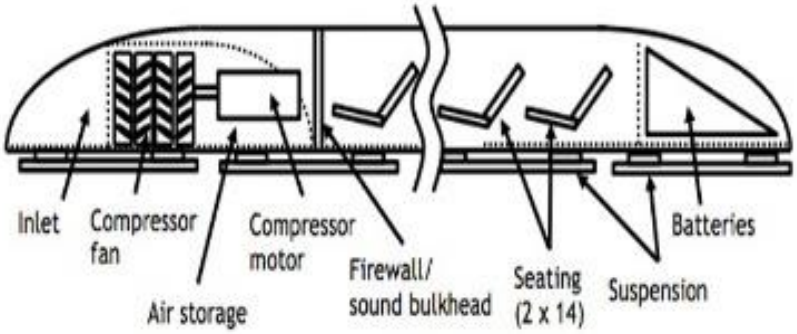
III Year, B. E., Civil Engineering

3D Printing Is Expected to Have the Most Significant Impact in Civil Engineering

The year 2017 witnessed a surge in the demand for 3D Printing across various domains. In 2018, this revolution has reached construction and civil engineering industry in a big way. 3D printing can turn engineering designs into scale models or even real components required for building construction. This technology, currently in the advanced stage is ready to take on more complex civil engineering challenges involving full-sized homes and bridges. Scientists are contemplating the use of 3D printing for assisting humanity's efforts to colonize Mars. Without doubt, this is one of the most exciting upcoming trends in civil engineering.

Transportation is the movement of humans, animals and goods from one location to another. A dominant factor that determines the efficiency of the transportation is **speed.** Hyperloop, the 5th mode of transportation is a high-speed system in which specialized pods are accelerated through a low-pressure tube to achieve speed nearly equal to the speed of the sound. Difficulties faced by high speed trains are in managing friction and air resistance. This is eliminated in hyperloop by introducing vacuum train concept which employs magnetically levitating trains in evacuated tubes.

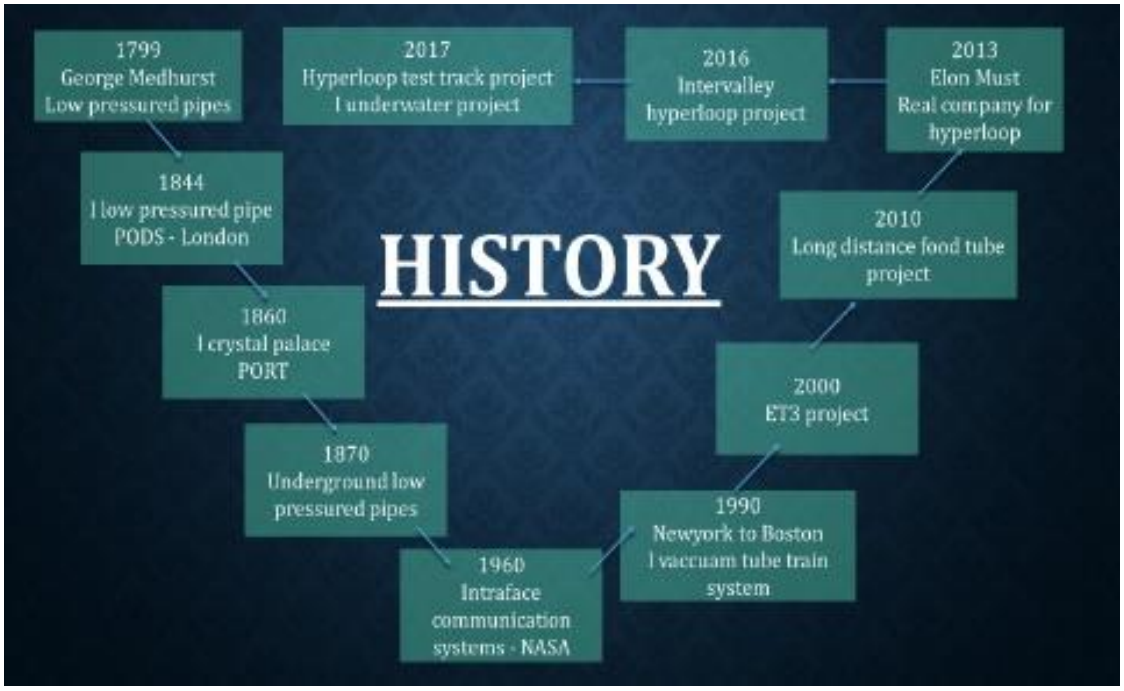
It has four parts namely pylon, tube, tracks and capsule. Capsules consists of air compartments at the front, passenger compartment at the middle and battery compartment at the back. Its capacity is about 28 passengers per capsule. Tube has an inner diameter of 7' 4" and a cross sectional area of about 42.2 sq. ft. Pylon is a concrete structure which holds the structural steel tubes. Solar panels are also attached to the top of the tubes as a power source. Linear induction motors along the tube accelerates the capsule. It also has stators to transfer momentum to capsule via the linear accelerator.



Hyperloop passenger capsule subsystem notional locations (not to scale).

Tube tracks are not completely free from air and the low-pressure air inside the capsule, in turn, building air pressure at the front of the vessel slows the speed of the object. This is resolved by using compressor fans that redirects air to back to the capsule providing additional propulsion. The redirected air through the air bearings levitate the metal capsuled in the tube. An electrically driven inlet fan and axial compressor are placed at the nose of the capsule to transfer high pressure air from the front to the rear sides of the vessel. Rather than having large batteries in the capsule, electric pulse generators are placed at every 70 miles as an external power supply. The concept of transportation through evacuated tubes was proposed in late 18th century. The real concept of Hyperloop was proposed in the year 2013 by Elon Musk, who is the CEO of SpaceX. The evolution of the hyperloop system is shown in the flowchart.

HYPERLOOP TRANSPORTATION



Looking at the advantages, it is the fastest mode of transportation with lower power consumption. It is immune to bad weather conditions and is earthquake resistant. It is a low-cost transportation system reducing the traffic congestion. On the other hand, the high speed of capsule causes dizziness to the passengers. It also involves high cost of investment and maintenance which requires high technical skills. It can accommodate only limited number of passengers. The steel tracks expand and deforms with increase in the outside temperature.

Due to its efficiency, many middle eastern developing countries are also focusing on hyperloop transportation system which reduces the travel time up to 85% when compared with other means of transport. One of the successful projects of hyperloop is the one that connects Dubai and Abu Dhabi along the Arabian coast with a speed of 1200km/h reducing the travel time of 1hr 20mins to just 12mins i.e., over 10,000 passengers can travel for every hour. This project undertaken by Hyperloop One which is an American transportation technology company that focuses on high speed transportation system, the Hyperloop. It was established on June 1, 2014 by Sherwin Pishevar and Brogan Bambrogan Josh Giegel. India has also been working on the project of Hyperloop that connects Mumbai and Pune which is expected to be completed by 2023. "WE DON'T SELL CARS, TRAINS, PLANES... WE SELL TIME..."

-Hyperloop One

S. Harapriya

II Year, B.E., Civil Engineering

Academic publication is the subfield of the publication industry which deals with the dissemination of academic research and literature. The most common form of academic work dissemination is through journals, books or theses. The quality of academic work is sustained by what is called as 'peer review' wherein the academic work submitted for publication to a publisher, is verified for its quality and soundness of principles by peers who have expertise in the subject area covered by the work. Once the work is cleared for publication, the editorial team sets out to work, to type set the text and related content in a standard format adopted by the publisher for their journals or books. The finished article/set of articles can be released for use by the readers, either in print form or electronic form. In recent years, the academic publication industry has been undergoing major changes with a majority of the academic publishers shifting from the print outlet to the electronic outlet owing to reduced costs and increased reach through the world wide web.

The consumption of the published literature by the readers is based on the publication models adopted by the publisher. The most conventional model of academic publication is the **'Subscription'** model. In this model, the publisher locks the published content behind a 'Pay Wall', i.e., the readers have to pay to get access to the article or the journal. Generally, the publisher takes over the copyright of the article from the authors through a copyright transfer agreement and hence, gains income by levying subscription charges while the authors, on the other hand, gain the advantage of publishing their research/academic work without having to pay for getting their work published. As the publishing industry grew, big publishers started to acquire top quality journals which were earlier published by non-profit academic societies. The two basic inputs of academic publication, the article as well as the peer review are free. Authors selected the most prestigious journals as a medium to publish their research, whereas the peer review of the article was and still is carried by voluntary services offered by expert peers in a particular field. Despite this, increasing subscription costs soon led to a 'serials crisis' in the publication industry with the universities and libraries unable to bear the cost of subscription of top journals published by big publishers. This can be seen from the fact that five for-profit publishers viz. Reed Elsevier, Springer Nature, Wiley-Blackwell, Taylor and Francis and Sage publishers accounted for more than 50% of the articles published by 2013, with 40% profit margins, despite over 2000 academic publishers being in the field.

This led to the development of an alternative model to the subscription model in the publishing industry called the **'Open Access'** model. In the open access model of publishing, the publisher allows for the complete and open access of the article after peer review at the time of publication. The model is sustained by levying a cost to the authors or their research funders known as 'Article Processing Charges (APC)', for making their article freely accessible at all times in the world wide web.

Today, Hindawi Publishing Corporation is one of the largest open access publishers having more than 200 journals in all areas of science and engineering. This particular model wherein the author/researcher pays to get their articles/research published is termed as **'Gold Open Access'** model of publishing. This model of academic publication was seen as the ultimate solution to the high subscription costs levied by the big publishers and locking down of research under pay walls which was and is still seen by the academic community as a blockade to advancement of knowledge and furtherance of research in all areas of literature and science. However, this publication model created an all new trouble in the publication industry, which according to the renowned Librarian, Prof. Jeffrey Beall, was the spawning of what he called as 'Predatory Publishers'. These are publishers who levied APC to publish anything and everything submitted to them for publication with little or no peer review. However, it is outside the purview of the focus of this article, which is limited to publication models. The Gold Open Access Model also seemed to be flawed due to its use by unscrupulous publishers to gain profits and conning innocent researchers with the enticement of quick and easy publication.

In the meanwhile, academic societies as well as Universities which were able to withstand the churning in the publication industry, still published research with a different model. A model, wherein the quality of article is maintained by peer review and the societies/Universities ran the publication of their journals through voluntary support of academics and allocated funds/donations. The Societies/Universities neither charged the reader for access nor the author for publication, but the article still remained open and freely accessible at all times to all readers. This model is now known as **'Platinum Open Access'** model of publishing. The open access movement also spawned other means of providing access to the readers like sharing of research papers in pre-print servers and researchers' networking sites like Research Gate and Academia. Elsevier also had to face illegal access of its pay walled articles through the open access advocacy website Sci-hub. With the growth of the open access movement, the big publishers started to feel the shift in momentum towards open access.

This led to the development of a model of publishing called as the **'Green Open Access'**. This model allowed for the opening of access to an article by the publisher after an embargo period during which the paper will be under a pay wall for access. Following the end of the embargo period, the publisher opens the access to the article and makes it completely open access. During the embargo period, the publisher gains profit through the subscription model. The model enabled the publisher to gain profit while not levying any APC on the authors for the publication of the article. The author also gets the benefit of open access of the article after the embargo period, (generally 24 months).

With changing times, the publishers also tried to adopt practices that enabled them not to lose their profits while trying to be a part of the open access movement, which was gaining more momentum with each passing day. This led to publishers adopting a flexible model of publication called the **'Hybrid Model'**. This model enables the publisher to be flexible with the model of publication within a particular journal. Authors who are unwilling or unable to fund for open access, publish their papers in a closed model (subscription based) wherein the readers have to pay to access the articles, whereas, the authors who are supported by funding agencies willing to make their research outputs open, pay APC to enable the articles to be open access as soon as they are published. Thus, the hybrid model of publication enables both subscription access as well as open access articles to be present in the same volume/issue of a journal. Some hybrid journals also provide the option to convert a subscription-based article to open access article after an embargo period (green open access) while others remain behind a pay wall.

There are also options of discount on the APC levied by the publisher for a particular journal based on the geo-location of the authors and their research significance. While some journals offer discounts for authors from Low Income Group Countries others provide discounts for articles that report top-notch or cutting-edge-research in emerging areas. The discounts usually vary from 30% to 100%. However, such journals still follow the Gold Open Access Model for the articles with few authors benefitting from the discount programmes. Moreover, for such journals to be considered as hybrid journals, they need to offer a complete discount or waiver to at least few of the articles in each issue which is not always the case. But such sub-models are also prevalent but more among the lesser known and emerging publishers. There is also a sub model followed by Hindawi, wherein the journal remains a Gold Open Access Journal but the publisher provides specific durations of article submissions wherein Platinum Open Access model is followed.

During particular months in a year, the publisher completely waives APC for the article, making it Platinum Open Access only for those months. If the article submitted during the waiver period, clears peer review, it gets published without an APC but still remains instantly open access. However, this model is not widely publicized by the publisher and is not a regular feature of the publisher's model of academic publication, in the sense that there are few months during the year wherein several journals have this waiver option where as there are months wherein all are Gold Open Access journals. There is no periodicity or trend as to how many journals get these waivers or when a journal's APC will be waived off.

Summing up, academic publication models can be either Subscription Based, Open Access or Hybrid Models, with Gold Open Access being the most common type in the Open Access Model. However, the Gold Open Access Model is plagued by issues of profiteering and poor quality-control. The big publishers following the Gold Open Access Model, however, do maintain article quality by peer review. The Platinum Open Access Model is the ideal model for the reader and the author, but the model cannot be sustained in the long run without donations or funding. In the present scenario, Green Open Access seems to be the best solution available for quick and efficient dissemination of quality research, until a better alternative is found.

(The content of the article is the outcome of the author's exposure to the work of Prof. Jeffrey Beall, Retired Librarian, Auraria Library, University of Colorado, Denver and the author is greatly indebted to his contributions to Open Access Scholarly Publishing.)

Dr. Jijo James
Associate Professor, Civil Engineering

Prof. Jeffrey Beall
Retired Librarian, Auraria Library
University of Colorado, Denver

Jeffrey Beall is an American librarian, best known for drawing attention to "predatory open access publishing", a term he coined, and for creating what is now widely known as Beall's list, a list of potentially predatory open-access publishers.
Citations : 2,624
h-index : 24
Known for : criticism of predatory open access publishing
Alma maters : California State University, Northridge, Oklahoma State University, University of North Carolina System