CONSEC24



10th International Conference on

<u>CON</u>crete under <u>SE</u>vere <u>Conditions</u> (CONSEC) – Environment & Loading

Bridging structural and materials technologies

September 25 - 27, 2024, at Radisson BLU Hotel GRT Chennai, INDIA

https://consec24.com

CONSEC conferences focus on the advancements in the areas related to the design, construction, testing, and preservation of various construction materials and systems exposed to severe environmental and loading conditions. Earlier CONSECs were held in Japan (1995), Norway (1998), Canada (2001), South Korea (2004), France (2007), Mexico (2010), China (2013), Italy (2016), and Brazil (2019). Now, the *Centre of Excellence on Technologies for Low-Carbon and Lean Construction (TLC2)* at the Indian Institute of Technology Madras feels proud and privileged to organize the 10th CONSEC in Chennai, India (named as CONSEC24). We have also planned pre- and post-conference workshops on allied topics. **CONSEC24 will provide a single platform for exchanging ideas in both focussed and holistic manner for the design, construction and conservation of reinforced concrete structures experiencing severe conditions**. We invite students, researchers, faculty members, and practitioners working in the relevant areas of **structural engineering and construction materials** to attend CONSEC24 and make it a huge success.











Conference themes and subthemes

T1: Advanced materials for severe conditions

- Cements and binders (SCMs)
- Chemical admixtures
- Hydration and microstructure
- Metallic and non-metallic reinforcement (fibres, mesh, bars, strands)
- Alternative aggregates

T2: Lab/field testing and characterisation

- Material characterisation tests
- Accelerated tests and longterm performance
- Non-destructive testing
- Forensics and condition assessment
- Naturally deteriorated systems

T3: Repair and strengthening materials and methods

- Preventive maintenance
- Electrochemical repair
- Waterproofing & coating
- Grouts and grouting methods
- Repair mortar and concrete
- Repair mortar and contract
- Residual capacity assessment
- Strengthening techniques

T4: Damage, deterioration and transport properties

- ASR, sulphate or acid attack
- Chloride ingress
- Carbonation and leaching
- Corrosion of reinforcement
- Creep and shrinkage
- Fatigue and fracture

T5: Service life, reliability, sustainability and resilience

- Simulation of residual capacity
- · Service life and durability
- · Reliability and resilience
- Sustainability and life cycle assessment (LCA)
- · Standardization and codes

T6: Special concretes and construction techniques

- FRC, TRC, HPC, UHPC, SHC
- Precast concrete
- 3D-concrete printing
- Underwater construction
- Cold-weather construction
- High-rise concrete pumping

Plenary Speakers



Prof. Alexandra BERTRON INSA Toulouse, France Behaviour of SCM and low-CO2 binders and systems in sewer networks



Prof. Jose Ivan ESCALANTE-GARCIA CINVESTAV Saltillo, Mexico Novel alkali activated binders using precursors of limestone and recycled pulverized concrete



Prof. Paolo GARDONI University of Illinois Urbana-Champaign, US Sustainability and resilience of large-scale concrete bridge infrastructure systems



Prof. Ippei MARUYAMA The University of Tokyo, Japan Performance evaluation of concrete under specific conditions for nuclear reactor buildings



Prof. Robert MELCHERS The University of Newcastle, Australia Resilience of reinforced concrete structures in corrosive conditions



Prof. Lisbeth M. OTTOSEN Technical University of Denmark, Denmark Reuse of structural concrete components in new buildings



Prof. Stefano PAMPANIN Sapienza University of Rome, Italy Designing precast concrete structures for earthquake resistance - Past, present, and future



Prof. Giovanni PLIZZARI University of Brescia, Italy Structural repair of tunnel segments



Prof. Manu SANTHANAM Indian Institute of Technology Madras, India Sulphate Attack: After 20 years of 'whither'ing



Prof. David TREJO Oregon State University, USA Service life of concrete structures and standardization - challenges and way forward

Keynote Speakers



Prof. Shashank BISHNOI IIT Delhi, India Carbonation of low clinker concretes: when it is a concern and when it is not



Prof. Pedro Castro Borges Avanzados del IPN Unidad Mérida, Mexico Social appropriation of knowledge about concrete durability in vulnerable coastal communities. The role of the participatory action research (PAR)



Prof. Gino Ebell BAM - Berlin, Germany Stress corrosion cracking in prestressed concrete bridge - A case study



Prof. Yang EN-HUA NTU, Singapore Characterization & tailoring of mechanical properties of engineered cementitious composites under dynamic loading condition



Prof. Liberato FERRARA Politecnico di Milano, Italy Material and process design in 3D Concrete Printing via AI driven experiments and modelling



Prof. Burkan ISGOR Oregon State University, USA Innovative approaches to mitigate reinforcement corrosion in concrete



Dr. Fragkoulis KANAVARIS ARUP, UK New perspectives for sustainable and durable concrete materials and structures



Prof. Laurie LACARRIÈRE INSA Toulouse, France Modeling the durability of structures under multiphysical loads



Prof. Sriramya D. NAIR Cornell University, USA Viability of Utilizing Supplementary Cementitious Materials for Subsurface Infrastructure



Prof. Sreejith Nanukuttan Queen's University of Belfast, UK Calcium focused design for longevity of concrete structures in silage environment



Prof. Suriya Prakash S. IIT Hyderabad, India Use of GFRP Rebars in Construction: Recent Research on Short Term and Long Term Performance



Prof. Enrico Sassoni University of Bologna, Italy Phosphate treatments to enhance the durability of cementitious materials



Dr. Lok Pratap SINGH CBRI, India Enhancing the performance and durability of cementitious materials through nanotechnology



Prof. Marijana SERDAR University of Zagreb, Croatia Does carbon footprint reduction impair mechanical properties and service life of concrete?



Dr. Ali Akbar SOHANGHPURWALA CONCORR, Inc., USA Application of service life modeling and selecting appropriate technologies for extending service life of RC structures



Prof. Pang SZE DAI **NUS Singapore**



Achieving ease of assembly and robustness in structural systems made with Prefabricated Prefinished Volumetric Construction (PPVC) **Mr. David TEPKE**



SKA Consulting Engineers, USA At the intersection of structural performance, durability and sustainability of concrete in severe environments for a safe, responsible future



Prof. Anya VOLLPRACHT RWTH Aachen University, Germany Carbonation in concretes with SCMs

Important Dates

Submission of 250-word Abstract (CLOSED)	April 15, 2024		
Acceptance of Abstract	April 30, 2024		
Submission of 4-page Extended Abstract (preferred) or 8-page Full Paper (optional)	May 31, 2024		
Early-Bird Registration	May 31, 2024		
Submit application for Indian Conference Visa, if needed	May 31, 2024		
Acceptance of 4-page Extended Abstract / 8-page Full Paper	June 15, 2024		

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Registration Fee

	Conference Registration fee (including tax)			
Registration Category	On or before May 31st, 2024		After May 31st, 2024	
	Indian (INR)	Foreign (USD)	Indian (INR)	Foreign (USD)
Student Author	8,000*	450	18,000	550
Student Author (subsidized**)	-	250	-	350
Individual	25,000	800	30,000	900
Individual (Discounted) (RILEM/ACI/ICI members)	22,000	700	27,000	800
Individual (Subsidized**)	-	450	-	550
Accompanying family members***	8000	150	8000	150
Pre-conference workshop	2000	25	4000	50

Registration Fee entitles the delegates to attend all technical sessions of the conference, exhibition, lunch, welcome reception, banquet and receive the proceedings, except that banquet is not included for Indian student authors who have paid reduced fees of INR 8000.

A maximum of one oral presentation is allowed for one registrant. Remaining accepted abstracts, if any, will be considered for poster presentation. Students without an abstract for oral/poster presentations will be considered under 'Individual' category.

- * Does not include banquet; banquet ticket of INR 4000 can be availed.
- **Countries eligible for subsidized fee: Albania; Algeria; Angola; Argentina; Bangladesh; Bosnia and Herzegovina; Botswana; Brazil; Bulgaria; Burkina Faso; Cambodia; Cameroon; Chile; Colombia; Congo; Costa Rica; Croatia; Cuba; Dominican Republic; Ecuador; Egypt; Estonia; Ethiopia; Federal Republic of Nigeria; Georgia; Ghana; Guatemala; Hungary; Indonesia; Iran; Iraq; Ivory Coast; Jordan; Kazakhstan; Kenya; Latvia; Lebanon; Lesotho; Libya; Lithuania; Macedonia; Malawi; Malaysia; Mauritius; Mexico; Montenegro; Morocco; Mozambique; Myanmar; Nepal; Pakistan; Paraguay; Peru; Poland; Philippines; Republic of Moldova; Romania; Russian Federation; Senegal; Serbia; South Africa; Sri Lanka; Syrian Arab Republic; Tanzania; Thailand; Togo; Tunisia; Turkey; Ukraine; United Republic of Tanzania; Uruguay; Venezuela; Vietnam; Yemen; Zimbabwe, and other countries with similar or lower GDP.
- *** Fee includes lunches, banquet and local sightseeing trips on conference days.

Tentative Programme Schedule

Organized by IIT Madras; to be held at Radisson BLU Hotel GRT Chennai (near airport)								
10 Plenary (P), 18 Keynote (K), and 128 Contributory (C) oral presentations and 150+ poster presentations								
Time	Day 0 (Tuesday)	Day 1 (Wednesday)	Day 2 (Thursday)	Day 3 (Friday)				
	Sep 24, 2024	Sep 25, 2024	Sep 26, 2024	Sep 27, 2024				
8:00 - 9:00	C3S Registration	CONSEC Registration in Hall E	CONSEC Registration in Hall E	CONSEC Registration in Hall E				
9:00 – 11:00	Pre-conference workshops	Session 1 - Plenary (Inaugural & 3 Ps)	Session 5 - Plenary (4 Ps)	Session 9 - Plenary (3 Ps)				
11:00 – 11:30	1) 7th Workshop on Corrosion	Tea/coffee break	Tea/coffee break	Tea/coffee break				
11:30 – 13:00	Control of Concrete Structures (C3S)	Sessions 2A, 2B, 2C, 2D (each with 1 K and 4 Cs)	Sessions 6A, 6B, 6C, 6D (each with 1 K and 4 Cs)	Sessions 10A, 10B, 10C, 10D (each with 6 Cs)				
13:00 - 14:00	2) Construction Technologies for	Lunch	Lunch	Lunch				
14:00 – 15:30	Sustainable Concrete Infrastructure Venue:	Sessions 3A, 3B, 3C, 3D (each with 1 K and 4 Cs)	Sessions 7A, 7B, 7C, 7D (each with 1 K and 4 Cs)	Sessions 11A, 11B, 11C, 11D (each with 1 K and 4 Cs)				
15:30 – 16:00	Two parallel workshops in	Tea/coffee break	Tea/coffee break	Tea/coffee break				
16:00 – 17:00	Royal Ball Room (Halls A and B)	Session 4E - Posters (1-75 posters)	Session 8E - Posters (75 onwards)	Closing				
17:00 – 18:00	CONSEC Registration in Hall E	Shuttle buses will leave to IIT Madras campus by 5 pm onwards	Relax	To respect even the last				
18:00 – 20:30		Welcome Reception & Dinner at Open Air Theatre, IIT Madras (shuttle buses will be provided)	Banquet and Gala Dinner at the Royal Ball Room, Radisson BLU Hotel (Conference Venue)	presenter, please consider				

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