

CONSEC24

Organized by



10th International Conference on

CONcrete under **SE**vere **C**onditions (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 long-term 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
- 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**

Nanyang Technological University, 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 and long term performance

**Prof. Enrico SASSONI**

University of Bologna, Italy
Phosphate treatments to enhance the durability of cementitious materials

**Dr. Lok Pratap SINGH**

Central Building Research Institute, India
Enhancing the performance and durability of cementitious materials through nanotechnology

**Prof. Marijana SERDAR**

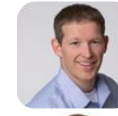
University of Zagreb, Croatia
Does carbon footprint reduction impair mechanical properties and service life of concrete?

**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**

National Univ. of Singapore, 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. Bernardo TUTIKIAN**

Univ. of Vale do Rio dos Sinos Campus São Leopoldo, Brazil
Accidents of concrete structures under fire (or elevated temperatures)

**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 Category	Conference Registration fee (including tax)			
	On or before May 31 st , 2024		After May 31 st , 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.

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*** 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 1) 7th Workshop on Corrosion Control of Concrete Structures (C3S) 2) Construction Technologies for Sustainable Concrete Infrastructure Venue: Royal Ball Room (Halls A and B)	Session 1 - Plenary (Inaugural & 3 Ps)	Session 5 - Plenary (4 Ps)	Session 9 - Plenary (3 Ps)
11:00 – 11:30		Tea/coffee break	Tea/coffee break	Tea/coffee break
11:30 – 13:00		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		Lunch	Lunch	Lunch
14:00 – 15:30		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		Tea/coffee break	Tea/coffee break	Tea/coffee break
16:00 – 17:00	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 presenter, please consider booking your return flight after 6 pm.
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)	

Bridging structural and materials technologies

Sponsorship Categories and Benefits

Benefits	Conference Partner	Platinum Sponsor	Gold Sponsor	Silver Sponsor	Bronze Sponsor
	INR 20 Lakhs	INR 10 Lakhs	INR 5 Lakhs	INR 2.5 Lakhs	INR 1 Lakh
Brief talk during...	Inaugural	Dinner	No	No	No
Proposal of one technical speaker	Yes	No	No	No	No
Exhibition stall	Yes	Yes	Yes	No	No
Number of free delegates	20	10	5	2	1
Distribution of publicity material	Yes	Yes	Yes	Yes	Yes
Mention in banners & all conference literature	Yes	Yes	Yes	Yes	Yes

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