

Digital transformation and intelligent infrastructure



14th Annual Workshop for Australian Network of Structural Health Monitoring (Hybrid Mode)

Date: November 24-25, 2022

Organizers: School of Civil and Environmental Engineering, University of Technology Sydney

Venue: [UTS Ariel Function Centre](#) (24th Nov.) & UTS CB07.02.025 (25th Nov.) plus Online via Zoom

Registration: [free registration due 18 Nov 2022](#)

Built infrastructure forms the cornerstone for our civilisation and modern life. Ensuring safety and serviceability of built infrastructure are of paramount importance to the livelihood and growth of our nation and our society. Digital transformation and intelligent infrastructure provide the key for better services to our growing communities, boosting economy-wide productivity and competitiveness, embedding reliability and resilience for a changing climate, and achieving an orderly and efficient transition to Net Zero. This key incorporates the latest developments in structural health monitoring (SHM) that utilises technology enablers such as IoT, data science, robotics, remote sensing, and structural engineering. These enablers will provide quality, efficient and risk-free resources to the construction industry for building new infrastructure as well as offer suitability, reliability and cost-effective, risk-transparent management for asset owners. It can also be used to extend the service life of existing infrastructure with high confidence on safety and operational efficiency.

14th Annual Workshop at Sydney

This year's workshop recognises the fast-growing field of "digital engineering" that shakes up traditional civil engineering and the construction industry, which collectively move towards making infrastructure "smart" and for which Structural Health Monitoring is an important part.

The two-day event is therefore structured into a summit that explores various aspects of smart infrastructure followed by a technical workshop:

- **Smart Infrastructure Summit**

The summit aims at providing a platform for two tiers of stakeholders to engage, inform and network, i.e. Tier 1: government agencies, asset owners, construction industry; Tier 2: service providers and researchers. This will allow information sharing, discussing challenges, and sharing future visions, strategy and policy on implementation and application of digital transformation and intelligent infrastructure.

- **Technical Workshop with presentations from Australian researchers and practitioners**

The workshop will be about sharing the latest research/technology and applications of SHM and smart (intelligent) infrastructure in Australia, and will be presented by leading Australian researchers and practitioners.

Workshop Overview

The ANSHM workshop will be held in a hybrid mode (physical and virtual) at the UTS Ariel Function Centre centrally located in downtown Sydney. Physical participations of the workshop will be by invitation only. The 2-day event is composed of two main parts:

- **Day 1: [smart infrastructure and digital transformation summit](#)** (UTS Building 10: Ariel Function Centre)
 - 8 Keynotes & invited talks from
 - government representatives
 - major asset owner and construction companies
 - major service providers
 - 4 from ANSHM
 - Panel discussions exploring various aspects of smart infrastructure
 - ANSHM Advisory Board meeting
- **Day 2: [workshop followed by ANSHM Advisory Board meeting](#)** (UTS Building 7 Lecture theatre: CB07.02.025)
 - 8-10 invited presentations from Australian researchers and **practitioners** on SHM
 - ANSHM Annual General Meeting

Background of the ANSHM workshop

The Australian Network of Structural Health Monitoring (ANSHM <https://www.anshm.org.au/>) was formed to raise the recognition of Structural Health Monitoring (SHM) in Australia. It is a non-profit organisation comprising of academics and practitioners with expertise in structural engineering and SHM areas with proven track records, which includes the use of on-structure sensing system to monitor the performance of the structure and evaluate its health state. For the last three decades, SHM has been growing rapidly around the world because it monitors structural conditions to prevent catastrophic failure, and to provide quantitative data for engineers and infrastructure owners to design reliable structures and economical asset management plans. Realising the importance of SHM, a group of researchers joined together and established the ANSHM on 30 June 2009 during the 1st ANSHM Workshop in Brisbane. The objective of our association is to bring practitioners and academics with expertise and knowledge in areas of Structural Health Monitoring including (but not limited to) sensor technology (IoT), non-destructive testing, digital transformation and damage detection techniques together and work closely with industries and universities nationally and internationally to exchange ideas and disseminate knowledge, provide better development of SHM techniques and raise general community awareness on the need for and value of SHM research and application.

ANSHM invites relevant Australian industries and universities to join this network. So far, we have members from 57 institutions, namely, Deakin University, Griffith University, Queensland Department of Transport and Main Roads, Queensland University of Technology, Transport for New South Wales, University of Adelaide, University of Melbourne, Monash University, University of Newcastle, University of Technology Sydney, Curtin University, University of New South Wales, Major Transport Infrastructure Authority (MTIA), Department of Transport, Victoria, University of Western Sydney, Australian Road Research Board (ARRB), University of Wollongong, University of Southern Queensland, University of Western Australia, Rockfield Technologies Australia, IDS

Australia, NPO SODIS, Victoria University, Main Roads Western Australia, Australian Rail Track Cooperation, NZ Transport Agency, Southern Cross University, Transurban, University of Surrey (UK), RMIT University, The University of Sydney, AECOM, Site Geotechnical, Data61, Swinburne University, Heywood Engineering Solutions, Monitor Optics Systems, Aspec Engineering Pty Ltd, Bentley Systems, Meriton, NVMS, Dywidag-Systems Australia, EngAnalysis, James Cook University, Sterling Group, Australia-wide Consulting Services, Mincka Engineering Pty Ltd, Engineering Advice Pty Ltd, Bestech Australia Pty Ltd, Sci-Meas, CJC Rail & Program Services, Pitt & Sherry, Natirar Consulting Services, University of South Australia, Arup, Dywidag-Systems Australia, SMEC, Eloque.

Travel and accommodation information:

Venue

The workshop will be held at UTS in the [Aerial Function Centre](#) located in Building 10 (entrance via 235 Jones Street). The function centre is on level 7 (the building is fully accessible).

The closest station is Central Station (it takes about 15 minutes to walk to Building 10 from the Central Station platforms). There are also bus stops located close to Building 10 on both sides of Broadway.

An OPAL card is needed to travel on all Sydney trains, buses and light rail. OPAL cards can be purchased and topped up from train stations and at convenience [stores](#) in the city.

- Access [UTS campus maps](#).
- Use [trip planner](#) to get around Sydney using public transport.
- Information on the public transport [OPAL system](#).
- Information on Accessible travel around Sydney can be found at [TransportNSW](#).

Travel from the airport

Sydney Airport is located 8km from the Sydney CBD (approx. 20 mins by road or 10 mins by train). Travel on the [Airport Link train to Central Station](#) from the Domestic or International terminals (one way) will cost \$18.70.

Parking

There is limited, metered on-street parking in Thomas Street (adjacent to Building 10). A number of parking stations operate in the area, including Interpark which is located in the basement of Building 10 (entrance via Thomas St). Parking station rates vary but average at about \$30 for a whole day. Download [information on parking](#).

Accommodation

[The Metro Aspire Hotel Sydney](#).

[Four Points by Sheraton Sydney, Central Park](#) (across the road from UTS)

[The Mercure](#)

There are plenty of other hotels close to the venue and a variety of options in terms of price.

High-range

The Old Clare Hotel (across the road from UTS).

Dulcis Domus Serviced Apartments (across the road from UTS).

Mid-range

Rendezvous Hotel Sydney Central (about a 7 minute walk to the venue).

Novotel Sydney Central (about a 7 minute walk to the venue).

Adina Apartment Hotel Sydney (close to Central Station).

Vulcan Hotel (about a 7 minute walk to the venue).

Budget options

Wake Up! Sydney (hostel, about a 10 minute walk to the venue).

Sydney Railway Square YHA (at Central Station).

Many other options are available in Sydney depending on whether you wish to stay close to the venue. There are hotels in the city centre (near Town Hall Station), at Circular Quay or The Rocks (close to the Harbour) or in Newtown or Glebe (areas with a lot of character). Most are easily accessible via public transport.

If you need further information, please contact me by email: Xinqun.zhu@uts.edu.au