



# The Monitor

Newsletter of the International Society of Structural Health Monitoring of Intelligent Infrastructure

ISSUE  
SUMMER/ FALL 2021

## Aftab Mufti Life-Time Achievement Award honours three globally respected leaders in the field of civil structural health monitoring (SHM)

The International Society for Structural Health Monitoring of Intelligent Infrastructure (ISHMII) announces the presentation of the Aftab Mufti Life-Time Achievement Award to three globally respected leaders in the field of civil structural health monitoring (SHM). The recipients are Dr. Sreenivas Alampalli, Dr. A Emin Aktan, and Dr. Dan M. Frangopol.

Candidates for this distinguished award were nominated by members of the ISHMII Council with the support of known leaders in the field who offered recommendations. The assessments were conducted by a committee formed of previous recipients of this prestigious award and council members: Chair of the Committee Dr. Urs Meier (Switzerland), Dr. Zhishen Wu (China), Dr. Jan-Ming Ko (Hong Kong), Dr. Wolfgang Habel (Germany), Dr. Didem Ozevin (USA) and Dr. Maria Pina Limongelli (Italy). As reviewers, they ranked the nominees on four criteria: Academic and professional excellence; Contribution to the CSHM discipline; Service to ISHMII; and, discretionary considerations from the reviewers.

It was the unanimous decision of the reviewers that the nominees were equally deserving of the Aftab Mufti Life-Time Achievement Award. Thus, each will receive the Aftab Mufti Medal with the profound thanks of ISHMII for their contributions to CSHM and the Society. The Medals were awarded virtually during the Closing Ceremony of the SHMII'10 Conference held on July 2, 2021; an in-person event will take place at the later date.

*See recipient bios on next page.*



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# Aftab Mufti Life-Time Achievement Award



**A EMIN  
AKTAN**

Dr. Aktan graduated from the Middle East Technical University in Ankara with BS and MS degrees in Structural engineering, and from the University of Illinois at Urbana-Champaign with a PhD in Engineering in 1973. He was a post-doctorate at UC California, Berkeley during 1979-1984, mentored by Profs. Bertero, Popov and Clough. During the final 30 years of his career he was appointed as Roebing Professor of Infrastructure Studies at Drexel University, Philadelphia. His primary research interests cover structural and infrastructure performance, health and asset management. He has contributed to structural-identification of actual prototype structures and how to leverage this for asset management of constructed systems.



**SREENIVAS  
ALAMPALLI**

Dr. Alampalli is a graduate of Sri Venkateswara University, with a bachelor's degree in civil engineering, the Indian Institute of Technology, with a master's degree in civil engineering, and Rensselaer Polytechnic Institute with a Ph.D. in civil engineering and an M.B.A. in management and technology. He has successfully managed more than 100 research projects and authored more than 250 technical publications, including six books related to civil infrastructure monitoring, risk management, and suspension bridge inspection and maintenance.

Dr. Alampalli is a Senior Principal in the Transportation Practice at a leading global design firm Stantec, focusing on asset management in the Bridge Sector, including structural health monitoring (SHM) and nondestructive evaluation services. Prior to that Sreenivas worked for the New York State Department of Transportation (NYSDOT) for more than 30 years in the areas of inspection, evaluation, and research of bridges and other structures. While at NYSDOT, he managed one of the largest inspection, evaluation, and management programs in the US to facilitate preservation, integrity, and safety of bridge and other structural infrastructure, including approximately 17,500 state and local highway bridges. He has fostered successful strategic public-private-academic partnerships to ensure safe, reliable, and cost-effective infrastructure using sound asset and risk management procedures. Within these efforts, he implemented data driven decision-making processes and web-based software tools for structure inspection, program planning, and overweight permit reviews.

Dr. Alampalli is a Fellow of the American Society of Civil Engineers (ASCE), the Structures Engineering Institute (SEI), the American Society for Nondestructive Testing (ASNT), and the International Society for Structural Health Monitoring for Intelligent Infrastructure (ISHMII). He is also an active member of the Transportation Research Board (TRB) Standing Committee on Bridge and Structures Management, Chair of the ISHMII Data Enhanced Infrastructure Monitoring committee, and Founding President of the International Association for Bridge Management and Safety (IABMAS) USA National Group. He is on the editorial board of four journals related to structures and nondestructive evaluation. He is a recipient of several awards including the Bridge NDT Lifetime Service Award from ASNT, OPAL Award for Lifetime Achievement in the government sector from ASCE, Henry L. Michel Award for Industry Advancement of Research from ASCE, and Hall of Fame Award from the Make the Right Move Chess Foundation for his volunteer efforts in promoting scholastic chess in the New York State Capital District Area.



**DAN M.  
FRANGOPOL**

Frangopol has made seminal scholarly contributions to structural health monitoring (SHM) by bringing reliability and optimization methods into this field. He is internationally recognized for pioneering the integration of health monitoring in life-cycle performance assessment, prediction, and optimization of structural systems under uncertainty. His innovative methodologies have been instrumental to tremendous advances in health monitoring of structural systems.

Frangopol is the Founding President of both the International Association for Bridge Maintenance and Safety (IABMAS) and the International Association for Life-Cycle Civil Engineering (IALCCE) as well as founding vice-president of ISHMII. He is also the past vice-president of the International Association for Structural Safety and Reliability (IASSAR) and past vice-president of the Engineering Mechanics Institute (EMI) of ASCE, as well as past member of its Board of Governors.

He has authored/co-authored three books, more than 50 book chapters, and over 420 articles in archival journals (117 in ASCE journals), including 11 prize-winning papers. Frangopol is the founder and editor-in-chief of Structure and Infrastructure Engineering, an international peer-reviewed journal launched in 2005, and of the book series Structures and Infrastructures.

He is the recipient of several medals, awards, and prizes from ASCE, IABSE, IASSAR, ISHMII, and other professional organizations, including the Newmark, Freudenthal, Housner, Lin, Khan, and Croes (twice) medals; the Ang, Howard, Moisseiff, and State-of-the Art of Civil Engineering (three times) awards; the Munro, Noble, Reese, and Wellington prizes; the Lifetime Achievement Award in Education (OPAL); and the Civil Engineer of the Year Award.

Frangopol holds four honorary doctorates, 14 honorary professorships, and six guest professorships from major universities.



## HOW TO SUBMIT YOUR ARTICLE TO THE JCSHM

Articles can be submitted through Editorial Manager:

<https://www.editorialmanager.com/cshm/default.aspx>

The special issue is created as submission questionnaire in the system. When you submit your paper you will be asked if your paper belongs to a special issue. If you answer yes, a pull down menu prompts up where you can select the title of the special issue to which you are submitting your paper.

## AWARDS & RECOGNITION

### ENGINEERING ACADEMY OF JAPAN ELECTS DAN FRANGOPOL AS FOREIGN ASSOCIATE

Dan M. Frangopol, the inaugural Fazlur R. Khan Endowed Chair of Structural Engineering and Architecture at Lehigh University, has been elected to the Engineering Academy of Japan (EAJ) as a foreign associate.

EAJ comprises "leading experts from academia, industry, and government institutions who possess a wide range of knowledge and have made outstanding contributions in engineering and technological sciences, and closely related fields," according to the academy's website.

Since its establishment in 1987, the EAJ has grown to approximately 800 individual Japanese members and 14 foreign associates (nonresidents of Japan), including five from the United States.

EAJ members are elected from leading positions in Japanese engineering and technological sciences. "They are people who consider it their duty to employ their knowledge and experience in engineering and technological sciences not just to promote engineering in Japan, but also to cooperate as volunteers in the continuous development of mankind around the globe."

### ALAMPALLI HONORED WITH OPAL AWARD IN GOVERNMENT

Sreenivas Alampalli, Ph.D., P.E., F.SEI, F.ASCE, former director of the Structure Management Bureau for the New York State Department of Transportation, has been honored by ASCE as the Outstanding Projects And Leaders award winner in government.

The ASCE OPAL awards honor outstanding civil engineering leaders for their lifetime accomplishments. This year's OPAL leadership award winners will be honored at the OPAL Awards Gala, a virtual event held Oct. 8 as part of the ASCE 2021 Convention.

Alampalli is recognized for demonstrated leadership of public sector projects and programs. He has provided progressive leadership, both as a researcher and a director, in a very broad area of bridge asset management, including nondestructive evaluation, nondestructive testing, structural health monitoring, and the pioneering use of FRP for improving bridge safety.

Read the full announcement here: <https://www.asce.org/publications-and-news/civil-engineering-source/article/2021/08/31/alampalli-honored-with-opal-award-in-government>

### CONGRATUATIONS TO CORPORATE MEMBER – ELOQUE

*Submitted by: Campbell A. Rose*

Xerox and the Victorian Government announced today they have partnered to launch **Eloque**, a joint venture to commercialize new technology that will remotely monitor the structural health of bridges.

The Eloque solution is an Industrial Internet of Things (IIoT) technology, using tiny fiber optic sensors attached to the bridge to accurately measure and estimate structural strain, thermal response, bending, loads, vibration, and corrosion, which are all measures of structural health. Advanced analytics are then used to evaluate the sensors' data and deliver insights directly to the bridge owners and operators in real time, to monitor whether a bridge is being over or underutilized, has structural problems or damage that needs repair.

According to the American Society of Civil Engineers 2021 Report Card for America's Infrastructure, in the United States alone, 42 percent of all bridges are at least 50 years old, and nearly 231,000 bridges need repair and preservation work. This problem extends across the globe. An estimated 70 percent of Australia's bridges are more than 50 years old, around 11,000 of Germany's 25,000 rail bridges are over 100 years old, and seven percent of bridges in France are already at risk of collapse.

"Aging and deteriorating public infrastructure is a global problem. We are pioneering technology that maintains the safety of bridges, extends their useful life and positively impacts planning," said Xerox Vice Chairman and CEO John Visentin. "Our partnership with the Victorian Government not only allows us to solve this problem for Victoria, but also rapidly expand to customers around the world facing these challenges."

The technology was developed at Xerox's Palo Alto Research Center (PARC) and trialed through a partnership between Xerox and VicTrack, the Victorian Government state-owned enterprise that owns all railway and tram lines in the state. PARC's solution uses sensors and advanced analytics to monitor structural health in bridges to optimize asset life. "This will help to detect problems earlier, reduce delays caused by road closures for manual inspections and repairs, and help to find problems more quickly and accurately in the case of bridge strikes or other unexpected events," said Victorian Minister for Transport Infrastructure Jacinta Allan. The Victorian Government committed \$50 million to introduce the Eloque technology on priority bridges across Victoria, Australia.

This technology enables early detection and prediction of problems, allowing issues to be found before they potentially become more costly to repair and helps customers efficiently manage maintenance budgets. "The technology has already been deployed on 7 bridges in Victoria and will be progressively deployed on priority bridges, particularly those that regularly deal with heavy loads and are at the most risk of deterioration. This is solving a major pain point for customers and allowing them to better manage their assets," said VicTrack Chief Executive Campbell A. Rose AM, who has taken the role of CEO of Eloque to support the company through its early establishment.

"While our initial focus will be rail and road bridges, Eloque's technology is versatile and we plan to adapt it for use on other critical structures in the future," said Ersin Uzun, general manager of IoT for Xerox and Board Member at Eloque. "We are already looking to expand the technology to tunnels, ports, multi-story parking garages and other critical infrastructure assets."

Xerox is the majority owner of Eloque, and this is part of its strategy for broad entry into the IoT market with new industrial offerings. Last year Xerox also announced that PARC is working with the United States' Defense Advanced Research Projects Agency (DARPA) for the development of a technology that can enable large scale monitoring of seas under the Ocean of Things program.