

SPRING 2021

**Friday, April 2, 12:00****Agathoklis Giaralis*****Smart Sustainable and Resilient  
Building Structures***

*The ever-increasing global urbanization trends pose pressing demands for economically and environmentally sustainable buildings towards carbon neutral urban communities. Concurrently, modern buildings are required to be resilient (i.e. observe low lifetime risk of loss of operation) to operational and to extreme external loads.*

*This seminar will first outline current needs and challenges in achieving sustainable and resilient slender buildings, being adaptive to environmental stressors in response to climate change. Attention will be focused on cost-effective wireless sensing, on reduction of embodied carbon emissions, and on high structural performance to wind and earthquake loads. It will then present recent advances on compressive data acquisition and interrogation for sustainable wireless long-term structural health monitoring and post-earthquake structural damage detection. Finally, it will highlight latest developments in inerter-based motion control for the seismic protection of buildings as well as for occupant comfort, energy harvesting, and structural weight minimization in wind-excited buildings.*

**Watch live: <https://youtu.be/rHo3B7LYRpg>**



Dr Agathoklis Giaralis is the Director of the Research Centre for Engineering Structures and leader of the Smart Structures and Structural Health Monitoring Research Unit in the School of Computer Science, Mathematics and Engineering at City, University of London. He holds a 5-yr MEng degree in Structural Engineering and an MSc in Earthquake Resistant Design of Structures from the Department of Civil Engineering of Aristotle University of Thessaloniki, Greece, and received his PhD from Rice University, Houston, USA partly funded by a Fulbright Exchange Scholarship. Dr Giaralis' research interests cuts through the fields of nonlinear stochastic dynamics, structural vibrations control & health monitoring, and earthquake engineering. Dr Giaralis has co-authored more than 100 papers in peer-reviewed international journals and conference proceedings, along with a book on earthquake resistant design of reinforced concrete building structures for practising engineers. He is a chartered civil engineer, member of the American Society of Civil Engineers, member of the honorary "Chi-Epsilon" society in Civil Engineering, and Fellow of the Higher Educational Academy in UK.