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## Editorial

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**Biographical notes:** Dr. Kong Fah Tee is a Senior Lecturer in Infrastructure Engineering at the University of Greenwich. He graduated with BEng (Hons) in Civil Engineering from the University Putra Malaysia and PhD from the National University of Singapore. He also completed a postgraduate certificate in Higher Education at the University of Greenwich and is a Fellow of the Higher Education Academy. His research effort has been focused on structural system identification, structural health monitoring, experimental stress analysis, fatigue, fracture mechanics, structural dynamics, control and reliability. He was an invited visiting foreign expert at the Nanjing University of Aeronautics and Astronautics.

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Welcome to the inaugural issue of the *International Journal of Forensic Engineering*. It is my pleasure and privilege to write the editorial for this issue. Forensic engineering is defined as application of engineering methods in determination and interpretation of causes of damage to, or failure of, equipment, machines or structures. The scope of this journal is wider than failure analysis alone, and includes all aspects of forensic engineering and related fields. Its content includes, but is not limited to, forensic practices, investigation methods, expert witnessing, codes and standards, geo-forensic, structural failures, material degradation, mechanical failures, product and operational failures, forensic electrical engineering, legal perspectives, ethical conduct, environmental concerns, insurance and loss adjustment. Other related fields which are also considered in this journal include post-disaster damage assessment, remediation and rehabilitation, education in forensic engineering, practices to reduce failures, disaster mitigation, intellectual property claims and so on.

Despite prevention and mitigation efforts, disasters still occur everywhere around the world. Nothing is so certain as the unexpected. Engineering failures and disasters are quite common and occur because of flaws in design, human error and certain uncontrollable situations, for instance, collapse of the I-35 West bridge in Minneapolis, crash of Air France Flight 447, catastrophic pipe failure in Weston, Fukushima nuclear disaster, just to name a few. Forensic engineering has played increasingly important roles in discovering the root cause of failure, determining whether the failure was accidental or intentional, lending engineering rationale to dispute resolution and legal processes, reducing future risk and improving next generation technology.

Nevertheless forensic engineering investigations are not widely published, partly because most of the investigations are confidential. It then denies others the opportunity

to learn from failure so as to reduce the risk of repeated failure. As forensic engineering is continuing to develop as a mature professional field, the launch of *International Journal of Forensic Engineering* is timely and its aim is to present a platform for exchange of information on the development of this area. This journal seeks to bring together and publish the works of academician and practitioners from world-wide. Therefore, it is appropriate for use to raise awareness of current forensic engineering practices both to the forensic community itself and to a wider audience.

Turning to the contents of this issue, readers will find a wide range of materials to whet their appetites. We salute our authors who have contributed to this inaugural issue. The topics of this issue are well balanced and provide a good example of the focus and coverage of the journal. We start on a paper in forensic engineering seismology. Prof. Bommer and Dr. Stafford proposed a framework to facilitate the arbitration of the dispute where the cause of a failed structure in earthquake zone may due to high ground motions or poor design and construction. This paper was motivated by Prof. Bommer's experience as an expert witness in the case of damage to the Ilo-2 coal-fired power plant in southern Peru, caused by the offshore earthquake of magnitude 8.4.

Then we move to a paper on an investigation of the head injury to a worker fallen from a mobile scaffold. This paper was written based on Prof. Krishnamurthy's experience as a prosecution expert. The employer alleged that the fall was entirely due to the unsafe actions of the worker. Bio-mechanics analyses refuting the charges of the worker's alleged actions were presented in the paper. In the third paper, Prof. Bibel discussed a forensic analysis of fuselage metal fatigue in large commercial aircraft. Different methods for determining total fatigue cycles were given and compared in the paper.

Next up we have a paper which provides a discussion on the difficulties faced in evaluation of structural performance in the immediate aftermath of an earthquake due to uncertainties in the ground motion severity. Using the 2011 Christchurch earthquake, Dr. Stafford concluded that any assertions regarding the general performance of structures must be interpreted with great caution. In the last paper, Prof. Brannigan explained proper forensic engineering in the technical regulatory environment. Two recent forensic engineering investigations of disasters at Bruncefield and Texas City were used as a case study to illustrate the keys to an effective investigation.

Many thanks go to all the people who help reviewing the submissions and to the team at Inderscience who run the journal in such a professional way. The *International Journal of Forensic Engineering* welcomes special issue proposals. You are encouraged to submit proposals for creating special issues in areas that are of interest to the journal. I welcome your feedback and thoughts on the journal and about any ideas you may have related to its role, purpose, and scope.