

FOREWORD

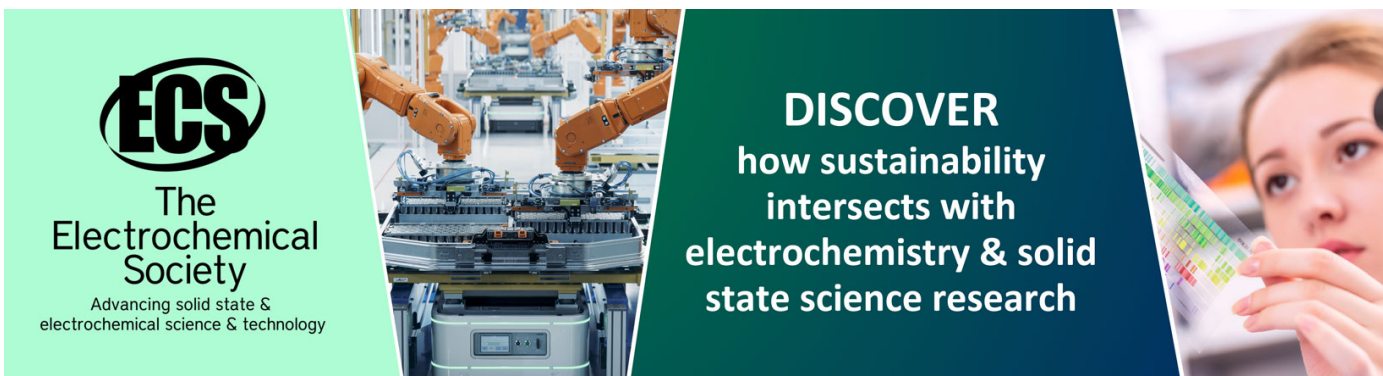
Structural Health Monitoring and Intelligent Infrastructure

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FOREWORD

Structural Health Monitoring and Intelligent Infrastructure

Guest Editors

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This special issue collects together 19 papers that were originally presented at the First International Conference on Structural Health Monitoring and Intelligent Infrastructure (SHMII-1'2003), held in Tokyo, Japan, on 13–15 November 2003. This conference was organized by the Japan Society of Civil Engineers (JSCE) with partial financial support from the Japan Society for the Promotion of Science (JSPS) and the Ministry of Education, Culture, Sport, Science and Technology, Japan. Many related organizations supported the conference. A total of 16 keynote papers including six state-of-the-art reports from different countries, six invited papers and 154 contributed papers were presented at the conference. The conference was attended by a diverse group of about 300 people from a variety of disciplines in academia, industry and government from all over the world.

Structural health monitoring (SHM) and intelligent materials, structures and systems have been the subject of intense research and development in the last two decades and, in recent years, an increasing range of applications in infrastructure have been discovered both for existing structures and for new constructions. SHMII-1'2003 addressed progress in the development of building, transportation, marine, underground and energy-generating structures, and other civilian infrastructures that are periodically, continuously and/or actively monitored where there is a need to optimize their performance. In order to focus the current needs on SHM and intelligent technologies, the conference theme was set as 'Structures/Infrastructures Sustainability'.

We are pleased to have the privilege to edit this special issue on SHM and intelligent infrastructure based on SHMII-1'2003. We invited some of the presenters to submit a revised/extended version of their paper that was included in the SHMII-1'2003 proceedings for possible publication in the special issue. Each paper included in this special issue was edited with the same quality standards as for any paper in a regular issue. The papers cover a wide spectrum of topics including smart and effective sensing technologies, reliable approaches to signal processing, rational data gathering and interpretation methods, advanced damage characterization, modeling feature selection and diagnosis methods, and system integration technologies, etc. This special issue contains the most up-to-date achievements in SHM and intelligent technologies and provides information pertaining to their current and potential applications in infrastructure. It is our hope that this special issue makes a significant contribution in advancing awareness and acceptance of SHM and intelligent technologies for the maintenance and construction of different kinds of infrastructure.

We would like to express our sincere thanks to Professor Varadan (Editor-in-Chief), Professor Matsuzaki (Regional Editor), the Editorial Assistants and the staff at Institute of Physics Publishing for their great support and advice in publishing this special issue. Special thanks are due to all the reviewers for their willingness to share their time and expertise. Final but important thanks go to Ms Suzhen Li (Doctorate Candidate at Ibaraki University) for her assistance in editing this special issue.