

# Preface

To meet the challenges of extreme working conditions, failure mechanisms of the plant components or devices should be studied, existing theories in structural integrity should be reexamined, and new testing techniques and theories should be developed. Innovation in materials development and applications and structural design are the basis to ensure the structural safety. Structural integrity prognosis or structural health monitoring provides an important solution to plant safety which needs more efforts. For this purpose, it brought us to ISSI2016. The 2016 International Symposium on Structural Integrity (ISSI2016) is thus held in Tianjin University, China, during May 26-30, 2016, with the theme *Testing and Evaluation of Structural Integrity*.

This book presents the proceedings of ISSI2016. As the successor of Fracture Mechanics symposium series (from 2003 to 2009) and Structural Integrity Symposium series (from 2010 to 2015), ISSI2016 attracts more than 200 participants from seven countries. In total, 109 papers were collected in the proceedings.

The symposium (ISSI2016) was co-organized by member organizations of China Structural Integrity Consortium, including East China University of Science and Technology, Hefei General Machinery Research Institute, China Special Equipment Inspection and Research Institute, Nanjing Tech University, Zhejiang University, Zhejiang University of Technology, Zhengzhou University, Changsha University of Science and Technology, Southwest Jiaotong University, Shandong University, Beihang University, Special Equipment Safety Supervision Inspection Institute of Jiangsu Province and Tianjin University, and co-sponsored by National Natural Science Foundation of China, Chinese Materials Institution, Chinese Pressure Vessel Institution and Chinese Failure Analysis Institution.

On behalf of the organizing committee, we would like to thank the above co-organizers and co-sponsors who made ISSI2016 possible. Special thanks are due to local organizers, Tianjin University, Tianjin Association of Science and Technology, Tianjin Society of Theoretical and Applied Mechanics and Special Equipment Safety Supervision Inspection Institute of Jiangsu Province. Thanks are also due to the speakers and all participants who make ISSI2016 unique.

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**Shan-Tung Tu**  
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May 30, 2016

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