## **CONTENTS**

Foreword	I
Contents	III
The Research in Support of the Eurocodes at JRC-ELSA Michel Géradin and Artur Pinto	1
The U.S. George E. Brown, Jr. Network for Earthquake Engineering Simulation (NEES)  Joy M. Pauschke	11
On Collaboration in Geology, Seismology and Earthquake Engineering for Disaster Mitigation in Pan-Pacific Area - In Relation to Seismic Design Code <i>Heki Shibata</i>	23
Pseudo Dynamic Experimental Responses of a Full Scale CFT/BRB Composite Frame <i>K.C. Tsai, B.C. Hsiao, J.W. Lai, C.H. Chen, M.L. Lin and Y.T. Weng</i>	31
Structural Health Monitoring and Control Research in NCREE Chin-Hsiung Loh	45
E-MOI European Monitoring Initiative  Helmut Wenzel	51
International Collaborative Activities in Structural Control and Monitoring Sami F. Masri	63
Seismic Vulnerability and Protection of Nonstructural Components T.T Soong and D. Lopez Garcia	73
Development of Earthquake Assessment Methodology in NCREE Chin-Hsun Yeh, Chin-Hsiung Loh and Keh-Chyuan Tsai	83
The JRC-ELSA Contribution to the Structural Assessment, Monitoring and Control of the European Built Environment <i>Vito Renda and Georges Magonette</i>	93
Earthquake Engineering in Australia – International Collaborations and Future Directions  Michael C. Griffith	101
Seismic Assessment and Its Verification of Damaged Low-rise RC Buildings in Taiwan Chi-Chi Earthquake  Maw-Shyong Sheu, Yi-Hsuan Tu, Hsin-Yi Kuo and Yi-Pei Liu	111
Development of Hazard Damaged Buildings Model by Chi-Chi Earthquake Data Bing-Jean Lee, Tine-Yin Chou and Tsu-Chiang Lei	123

Implications on the Use of Continuous Dynamic Monitoring Data for Structural Evaluation  Serge L. Desjardins, Nicolas A. Londoño and David T. Lau	139
Structural Control Versus Long-Span Bridges Fabio Casciati	153
Seismic Control Applications in Taiwan  Jenn-Shin Hwang	159
The Contribution of Control to Earthquake Mitigation Emília Juhásová	167
Test Requirements and Its Execution for the Velocity Dependent Energy Dissipation Devices  Deh-Shiu Hsu, Yung-Feng Lee, Chien-Yuan Hou and Juan-The Lee	177
Seismic Risks of Typical Double Fabs in Taiwan's Hi-tech Industry Yen-Po Wang, Wei-Hsin Liao and Chien-Liang Lee	187
Advanced Testing Techniques at the ELSA-JRC Reaction Wall Georges Magonette, Pierre Pegon and Phillippe Buchet	203
The New UB-NEES Versatile Earthquake Engineering Hybrid Testing Facility M. Bruneau, A.M. Reinhorn, A.S. Whittaker, M.C. Constantinou, S. Thevanayagam, M. Sivaselvan, X. Shao, J. Hanley, M.C. Pitman and T. Albrechcinski	211
Project "E-Defense" (3-D Full-scale Earthquake Testing Facility) Keiichi Ohtani, Nobuyuki Ogawa, Tsuneo Katayama and Heki Shibata	223
ISEE: Internet-based Simulations for Earthquake Engineering Part I: The Database Approach Yuan-Sen Yang, Shiang-Jung Wang, Kung-Juin Wang, Keh-Chyuan Tsai and Shang-Hsien Hsieh	235
ISEE: Internet-based Simulations for Earthquake Engineering Part II: The Application Protocol Approach Kung-Juin Wang, Shiang-Jung Wang, Wei-Choung Cheng, Yuan-Sen Yang and Keh-Chyuan Tsai	247
Seismic Testing Capabilities of CEA Saclay Laboratory: Description-evolution-development of International Collaboration P. Sollogoub, J. C. Quéval and Th Chaudat	257
Earthquake Resistance of Structures and Dynamic Response Using Large Facilities Experiments  Miloš Drdácký and Stanislav Pospíšil	265

BLADE – Bristol Laboratory for Advanced Dynamic Engineering, Development of a New Integrated Research Facility in The UK <i>Adam Crewe</i>	275
Seismic Retrofit Study of Bridges in NCREE  Kuo-Chun Chang	285
Recent Advances in Seismic Retrofit of RC Structures in Taiwan Shyh-Jiann Hwang and Wu-Wei Kuo	291
Cable Force Analysis of Gi-Lu Cable-stayed Bridge after Gi-Gi Earthquake Z.K. Lee, K.C. Chang, C.H. Loh, C.C. Chen and C.C. Chou	301
Seismic Retrofit of Hollow Bridge Piers  Yeong-Kae Yeh	313
The Axial and Flexural Load Behavior of Concrete-filled Steel Thin-walled Tubes with Stiffened Square Sections	323
Gee-Yu Liu, Yeoug-Kae Yeh, Keh-Chyuan Tsai and Chiung-Shiann Huang	
Monte Carlo Simulation for the Seismic Response Analysis of Electric Power System in Taiwan	333
Gee-Yu Liu, CW. Liu and YJ. Wang	
Surface Deformation for Constant Stress Drop Slip Zone in an Elastic Half-space-anti-plane Case Tsung-Jen Teng and Juin Fu Chai	341
Numerical Simulation of Pulse-like Near-fault Ground Motions <i>Juin Fu Chai and Tsung-Jen Teng</i>	349
Hybrid Controlled Base-isolation System with Semi-active Magnetorheological Damper and Rolling Pendulum System  P.Y. Lin, P.N. Roschke, C.H. Loh and C.P. Cheng	359
Bolted Beam-column Connections for Concrete-filled Tube Structures L.L. Chung, L.Y. Wu, T.J. Shen, G.L. Huang and S.F. Tsai	373
Analytical Modeling of Hysteretic SDOF Systems Considering Post-peak Behavior and Engineering Implications  Chiun-Lin Wu, Chin-Hsiung Loh and Chia-Hung Lin	381
Networked Hybrid Testing of a Full Scale RCS Composite Frame Chui-Hsin Chen, Wen-Chi Lai, Keh-Chyuan Tsai, Paul Cordova and Greg G. Deierlein	391
The Engineering Geological Database for Strong Motion Stations in Taiwan Ming-Hung Chen and Bing-Ru Wu	403
Application of Neural Networks in Structural Health Monitoring  Ching-Yun Kao	409

Mechanical Behavior of Double-skinned Composite Steel Tubular Columns  Min-Lang Lin and Keh-Chyuan Tsai	419
Control	
Yi-Lun Chu, Tzu-Kang Lin and Kuo-Chun Chang	
Early Estimation Procedure of Seismic Hazard for Major Earthquake	435
Wen-Yu Jean, Yu-Wen Chang and Chin-Hsiung Loh	