Contents

Part I  Keynote Lecture
Progress of Acoustic Emission Technology on Pressure Equipment in China ........................................ 3
Gongtian Shen

Part II  Instrumentation
Advanced Usage of the Software-Controlled Sensor Coupling Test ....................................................... 19
H. Vallen

A New Generation of AE System Based on PCI Express Bus .. 29
E. Lowenhar, M. Carlos, and J. Dong

Part III  Signal Processing and Analysis
Localization of Acoustic Emissions in a Numerical T-Shaped Concrete Beam Using Multi-segment Path Analysis .................. 39
Stephan Gollob, Georg K. Kocur, and Thomas Vogel

Pattern Recognition for Acoustic Emission Signals of Offshore Platform T-Tube Damage Based on K-means Clustering .................................................. 53
Peng Jiang, Luying Zhang, Wei Li, and Xiao Wang

Fault Analysis for Low-Speed Heavy-Duty Crane Slewing Bearing Based on Wavelet Energy Spectrum Coefficient .................. 63
Yang Jiao, Guanghai Li, Zhanwen Wu, Huipo Geng, Jian Zhang, and Li Cheng
Analysis of the Fractional S Transform ........................................ 75
Yang Yu, Tiepeng Xu, and Ping Yang

Research of Tank Bottom Corrosion Acoustic Emission Simulation . . 85
Yang Yu, Xinyuan Qian, and Ping Yang

Extracting the Fault Features of an Acoustic Emission Signal
Based on Kurtosis and Envelope Demodulation
of Wavelet Packets ........................................................... 101
Li Lin, Qiang Xu, and Yong Zhou

Research on the Diagnosis Method Based on the Waveform
Streaming Signal of Rolling Bearing ........................................ 113
Ying Zhang, Ruixiao Fan, Rui Cong, and Wei Li

Part IV Material Characteristics

Acoustic Emission Behavior of 12MnNiVR under Corrosion .......... 125
Guanghai Li and Xinjian Wang

B-Value Characteristics of Rock Acoustic Emission
Under Impact Loading .......................................................... 135
Xiling Liu, Mengcheng Pan, Xibing Li, and Jinpeng Wang

Evaluation of Acoustic Emission from Damaged CFRP
Sheets for Air Industry Applications ....................................... 145
M. Bardadyn, R. Karczewski, P. Sobczak, L. Golebiowski,
L. Sarniak, K. Paradowski, and A. Zagorski

Acoustic Emission Study of Ti–Ni Shape-Memory Alloy
in Loading–Unloading .......................................................... 155
Hongyan Xing, Cheng Zhu, Yasunari Tamari,
Gang Qi, and Shuichi Miyazaki

Glass Fiber-Reinforced Plastic Composite Acoustic Emission
Signal Detection and Source Localization ............................... 163
Qiang Wang, Xiaohong Gu, Xinwei Fan, and Rongyao Ye

Evaluating Freeze-Thaw Damage in Concrete with Acoustic
Emissions and Ultrasonics ....................................................... 175
Heather N. Todak, Marisol Tsui, M. Tyler Ley, and W. Jason Weiss

Evaluation of Tensile Failure Progress in FRP Using
AE Tomography and Digital Image Correlation ........................ 191
Takahiro Nishida, Tomoki Shiotani, Yoshikazu Kobayashi,
Hisafumi Asaue, Hiroshi Nakayama, and Kai-Chun Chang
Acoustic Emission Testing Research of Blowout Preventer ........................................ 335
Junru Zhao and Wei Li

Part VI Condition Monitoring and Diagnosis

Acoustic Emission Testing of Cryogenic Pipelines in Operating Conditions ........................................ 347
T. Lusa, J. Plowiec, M. Szwed, Ł. Sarniak, and A. Zagórski

Hit-Based Acoustic Emission Monitoring of Rock Fractures: Challenges and Solutions ........................................ 357
Zabihallah Moradian and Bing Qiuyi Li

Acoustic Emission Monitoring of Brittle Fatigue Crack Growth in Railway Steel ........................................ 371
Zhiyuan Han, Guoshan Xie, Hongyun Luo, Mayorkinos Papaelias, and Claire Davis

Experimental Research on Acoustic Emission Monitoring of Dynamic Corrosion on a Simulated Tank Floor ........................................ 383
Ying Zhang, Chengzhi Li, Wei Li, Feng Qiu, and Yongtao Zhao

Part VII Miscellaneous

Study on the Influence Rule of Residual Stress on Ultrasonic Wave Propagation ........................................ 403
Chenguang Xu, Wentao Song, Jianfeng Song, Hongyu Qian, and Hanming Zhang

Author Index ........................................ 419

Subject Index ........................................ 423
Advances in Acoustic Emission Technology
Shen, G.; Wu, Z.; Zhang, J. (Eds.)
2017, XIV, 428 p. 309 illus., 267 illus. in color., Hardcover
ISBN: 978-3-319-29050-8