

# **Insight, Non-Destructive Testing and Condition Monitoring**

## **incorporating the European Journal of NDT**

### **formerly the British Journal of Non-Destructive Testing**

**ISSN: 1354-2575**

## **VOLUME 58 2016 – INDEXES**

### **Key to issues**

No 1 January .....	1-64
No 2 February .....	65-120
No 3 March .....	121-172
No 4 April .....	173-232
No 5 May .....	233-284
No 6 June .....	285-344

No 7 July .....	345-400
No 8 August .....	401-460
No 9 September .....	461-524
No 10 October .....	525-576
No 11 November .....	577-640
No 12 December .....	641-696

### **REGULAR FEATURES AND SHORT TITLES**

BINDT Membership .....	530
Comment.....	2, 66, 122, 174, 234, 286, 346, 402, 462, 526, 578, 642
Conference Reports	
NDT 2016: Interesting presentations demonstrate the state-of-the-art .....	628
The 55th Annual Conference of the British Institute of NDT	
– NDT 2016.....	624
Corporate Members .....	64, 120, 172, 232, 284, 344, 400, 460, 524, 576, 640, 696
Institute Awards.....	8, 472
Institute Notices .....	295, 408
International Diary .....	53, 108, 157, 215, 271, 331, 388, 449, 511, 564, 629, 683
NDT Info.....	55, 110, 161, 219, 274, 334, 391, 451, 514, 566, 631, 686
Newsdesk .....	4, 68, 125, 177, 236, 289, 348, 404, 465, 528, 581, 645
Obituaries	
Dr E A Birt .....	7
Mr C Perry .....	470
Dr M Silk .....	469
Mr J G Young .....	292
Product Showcase .....	62, 117, 169, 227, 281, 341, 398, 458, 521, 573, 638, 693
Special Features	
Condition Monitoring .....	401, 641
Image Processing .....	233
Magnetic Methods.....	285
Novel Applications.....	1
Standards .....	9

### **AUTHOR INDEX**

Ahmazade-Beiraki E (with Mazinani M and Kashefi M)	
Examination of Barkhausen noise parameters for characterisation of strain-induced martensitic transformation in AISI 304 stainless steel .....	297
Alaa Abdulhady Jaber (with Bicker R)	
Fault diagnosis of industrial robot gears based on discrete wavelet transform and artificial neural network .....	179
Ali S M (see Sajid S H).....	152
Anyi Wang (see Weilei Mu).....	246
Bagavathiappan S (see Lahiri B B).....	70
Bai S Z (see Bao S) .....	678
Balasubramaniam K (see Ramya M) .....	264
Bao S (with Fu M L, Lou H J, Bai S Z and Hu S N)	
Evaluation of stress concentration of a low-carbon steel based on residual magnetic field measurements .....	678
Baobao Song (see Xiaojian Xu).....	649
Barbieri M (see Gelman L) .....	409

Basak D	
Performance evaluation of chairlift ropes in two man-riding systems in an incline coal mine using a non-destructive testing instrument .....	206
Bayadi A (see Terrab H).....	502
Bellander M (see Mishra M).....	210
Bicker R (see Alaa Abdulhady Jaber) .....	179
Błachowicz A (with Boczar T and Wotzka D)	
Application of a mobile system in diagnostics of power capacitors using the acoustic emission method .....	94
Boczar T (see Błachowicz A).....	94
Bose S (see Zeroug S) .....	423
Brett C (see Ward C) .....	475
Brinkerhoff R (see Miceli M) .....	351
Ceglà F (see Seher M).....	536
Challis R (see Seher M) .....	536
Chao Chen (see Changjun Li).....	601
Changying Dang (with Jianmin Gao, Zhao Wang, Yulin Xiao and Yalin Zhao)	
A novel method for detecting weld defects accurately and reliably in radiographic images .....	28
Changjun Li (with Chao Chen, Kexi Liao, Wenlong Jia and Qian Huang)	
Theoretical research on the characteristics of the self-magnetic leakage field induced by ferromagnetic pipelines .....	601
Chao Zhang (with Zhixiong Li, Shuai Chen, Jianguo Wang and Xiaogang Zhang)	
Optimised ensemble empirical mode decomposition with optimised noise parameters and its application to rolling element bearing fault diagnosis.....	494
Charlton P (see Sutcliffe M) .....	82
Che-Hua Yang (see Yu-Ju Lin) .....	142
Chen Jiang (with Chunhua Wang and Lingbao Kong)	
Estimation of the surface roughness of K9 optical glass in precision grinding using the brittle material removal fraction based on an improved image processing algorithm .....	240
Chengqing Yuan (see Xiaojian Xu) .....	649
Chenxing Sheng (see Xiaojian Xu).....	649
Chunhua Wang (with Chen Jiang) .....	240

Ciszewski T (with Gelman L and Świderski L) <u>Current-based higher-order spectral covariance as a bearing diagnostic feature for induction motors</u> .....	431
Cross P (see Xiandong Ma) .....	663
D'Angelo R (see Zerouga S) .....	423
Davenport P (see Noroozi S) .....	101
Day R (see Hughes F) .....	596
Deqiang Zhou (with Jun Wang, Jialong Wu, Ruizhen Yang, Hong Zhang and Qiuju Zhang) <u>Investigation of rectangular differential probes for pulsed eddy current non-destructive testing</u> .....	87
Dheeraj P R (with Khaja M S and Mohsin I) <u>Advanced phased array technology application for single-sided access weld inspection</u> .....	585
Dinakaran D (see Nakandhrakumar R S).....	556
Dixon S (see Hughes F) .....	596
Dong H (see Gou J).....	373
Dupac M (see Noroozi S) .....	101
El-Hag A H (see Terrab H).....	502
Fangming Li (with Jian Feng, Jinhai Liu and Senxiang Lu) <u>Defect profile reconstruction from MFL signals based on a specially-designed genetic taboo search algorithm</u> .....	380
Frącz P <u>System for monitoring partial discharges occurring in overhead power transmission line insulators based on ultraviolet radiation registration</u> .....	360
Fu M L (see Bao S) .....	678
Gao X R (see Peng C Y) .....	145
Gelman L (with Harish Chandra N, Kurosz R, Pellicano F, Barbieri M and Zippo A) <u>Novel spectral kurtosis technology for adaptive vibration condition monitoring of multi-stage gearboxes</u> .....	409
Gelman L (see Ciszewski T) .....	431
Ghali V S (see Subhani Sk).....	42
Gongtian Shen (see Yue Yu).....	671
Gopal M (see Nakandhrakumar R S).....	556
Gou J (with Dong H) <u>CT image reconstruction of half-covered projection with fewer iterations based on SB-TVM</u> .....	373
Guojie Liu (see Weilei Mu) .....	246
Guohua Gao (with Meijuan Lian, Yonggang Xu, Ya'nan Qin and Lin Gao) <u>The effect of variable tensile stress on the MFL signal response of defective wire ropes</u> .....	135
Guoming Chen (see Jiuhan Ge) .....	313
Guoming Chen (see Xin'an Yuan) .....	435
Hall W (see Palmer S).....	318
Harish Chandra N (see Gelman L).....	409
Heyns P S (with Vinson R and Heyns T) <u>Rotating machine diagnosis using smart feature selection under non-stationary operating conditions</u> .....	417
Heyns T (see Heyns P S).....	417
Hong Zhang (see Deqiang Zhou).....	87
Hongquan Jiang (with Yalin Zhao, Jianmin Gao and Zhao Wang) <u>Weld defect classification based on texture features and principal component analysis</u> .....	194
Hongquan Jiang (with Yalin Zhao, Jianmin Gao and Zhao Wang) <u>Weld extraction of radiographic images based on Bézier curve fitting and medial axis transformation</u> .....	531
Hu S N (see Bao S) .....	678
Hughes F (with Day R, Tung N and Dixon S) <u>High-frequency eddy current measurements using sensor-mounted electronics</u> .....	596
Isla J (see Seher M).....	536
Jaenisch G-R (see Osterloh K).....	46
Jayakumar T (see Lahiri B B) .....	70
Jialong Wu (see Deqiang Zhou).....	87
Jian Feng (see Fangming Li).....	380
Jianguo Wang (see Chao Zhang).....	494
Jianmin Gao (see Changying Dang) .....	28
Jianmin Gao (see Hongquan Jiang) .....	194
Jianmin Gao (see Hongquan Jiang) .....	531
Jianwei Li (with Xiao Liangyu and Xuemei Han) <u>Influence of applied load in ferromagnetic material on magneto-mechanical phenomena</u> .....	308
Jin Yong (with Zhang Liao, Zhang Hanyuan and Li Hongying) <u>The design and implementation of an online detection system for defects in glass</u> .....	551
Jinhai Liu (see Fangming Li).....	380
Jiuhan Ge (with Wei Li, Guoming Chen, Xiaokang Yin, Yanyun Wu, Xianan Yuan and Mengyi Zhao) <u>New parameters for the ACMF inspection of different materials</u> .....	313
Jiuhan Ge (see Xin'an Yuan) .....	435
Jiunn-Yuan Huang (see Yu-Ju Lin) .....	142
Johnsson R (see Mishra M).....	210
Jue Wang (see Yongning Zou) .....	251
Jun Qian (see Yue Yu) .....	671
Jun Wang (see Deqiang Zhou) .....	87
Junjie Chen <u>Three-axial MFL inspection in pipelines for defect imaging using a hybrid inversion procedure</u> .....	302
Kashefi M (see Ahmadzade-Beiraki E).....	297
Kexi Liao (see Changjun Li).....	601
Khaja M S (see Dheeraj P R) .....	585
Khan K A (see Saqib W).....	656
Khan M A (see Saqib W) .....	656
Khan S Z (see Saqib W) .....	656
Kim J (see Oh T) .....	609
Kreutzbruck M (see Sharatchandra Singh W) .....	544
Kurosz R (see Gelman L) .....	409
Lackner G (with Tschelesnig P) <u>Requalification of LPG tanks in Europe: Verifying the structural integrity by monitoring the pressure test with acoustic emission</u> .....	443
Lahiri B B (with Sarkar A, Bagavathiappan S, Nagesha A, Saravanan T, Sandhya R, Jayakumar T and Philip John) <u>Studies on temperature evolution during fatigue cycling of Ni-Al bronze (NAB) alloy using infrared thermography</u> .....	70
Laibin Zhang (see Wenqing Lu) .....	35

Larsson J-O (see Mishra M) .....	210
Lee C (see Oh T) .....	609
Lewis J (see Sutcliffe M) .....	487
Li Hong (see Zhenjing Yao) .....	324
Li Hongying (see Jin Yong) .....	551
Lin Gao (see Guohua Gao) .....	135
Lina Cheng (see Zhenjing Yao) .....	324
Lindgren M (with Santa-aho S and Vippola M) <u>Barkhausen noise response of three different welded duplex stainless steels</u> .....	480
Lingbao Kong (see Chen Jiang) .....	240
Liu Jiantang (with Zhao Min and Xiao Hui) <u>A positron injection-based 3D imaging test method for inner cavities in complex parts</u> .....	617
Liu Y (see Zeroug S) .....	423
Lou H J (see Bao S) .....	678
Majidnia S (with Nilavalan R and Rudlin J) <u>A numerical study of the depth of penetration of eddy currents</u> .....	129
Mazinani M (see Ahmadzade-Beiraki E) .....	297
Meijuan Lian (see Guohua Gao) .....	135
Mengyi Zhao (see Jiuahao Ge) .....	313
Miceli M (with Moshier M A, Nelson L and Brinkerhoff R) <u>Innovative technology for continuous fatigue crack condition monitoring of bridges: long-term electrochemical fatigue sensor (LTEFS)</u> .....	351
Mishra M (with Odelius J, Rantatalo M, Johnsson R, Larsson J-O, Bellander M and Niemi I) <u>Simulations and measurements of the dynamic response of a paper machine roller</u> .....	210
Mohd al-Attas M B S (see Noroozi S) .....	101
Mohsin I (see Dheeraj P R) .....	585
Moshier M A (see Miceli M) .....	351
Murthy G V S (with Patel D and Sahoo K L) <u>A study of precipitation behaviour of A356 alloy using ultrasonic velocity measurements</u> .....	367
Naeem A (see Sajid S H) .....	152
Nagesha A (see Lahiri B B) .....	70
Nakandhrakumar R S (with Dinakaran D, Gopal M and Pattabiraman J) <u>A novel normalisation procedure for the sensor positioning problem in vibration monitoring of drilling using artificial neural networks</u> .....	556
Nelson L (see Miceli M) .....	351
Niemi I (see Mishra M) .....	210
Nilavalan R (see Majidnia S) .....	129
Noroozi S (with Rahman A G A, Dupac M, Ong Z C, Mohd al-Attas M B S and Davenport P) <u>Condition monitoring and diagnostics of an extruder motor and its gearbox vibration problem</u> .....	101
Novoa A B (with Vicuña C M) <u>New aspects concerning the generation of acoustic emissions in spur gears, the influence of operating conditions and gear defects in planetary gearboxes</u> .....	18
Odelius J (see Mishra M) .....	210
Oh T (with Kim J, Zhang A, Lee C and Park S) <u>Concrete strength evaluation in an early-age curing process using SVM with ultrasonic harmonic waves</u> .....	609
Ong Z C (see Noroozi S) .....	101
Osterloh K (with Jaenisch G-R) <u>Rare events – a probability approach or an ill-posed problem?</u> .....	46
Palmer S (with Hall W and Summerscales J) <u>Ranking of fibre-reinforced composite plate surface finish quality by wavelet texture analysis</u> .....	318
Park S (see Oh T) .....	609
Patel D (see Murthy G V S) .....	367
Pattabiraman J (see Nakandhrakumar R S) .....	556
Pellicano F (see Gelman L) .....	409
Peng C Y (with Gao X R and Wang A) <u>Novel wavelet self-optimisation threshold denoising method in axle press-fit ultrasonic defect detection</u> .....	145
Peng Liu (see Weilei Mu) .....	246
Peng Qian (see Xiandong Ma) .....	663
Philip John (see Lahiri B B) .....	70
Por G <u>Advanced acoustic detection system for monitoring nuclear power plant components</u> .....	439
Qian Huang (see Changjun Li) .....	601
Qiuju Zhang (see Deqiang Zhou) .....	.87
Rahman A G A (see Noroozi S) .....	101
Ramya M (with Balasubramaniam K and Shunmugam M S) <u>On a reliable assessment of the location and size of rebar in concrete structures from radargrams of ground-penetrating radar</u> .....	264
Rantatalo M (see Mishra M) .....	210
Rudlin J (see Majidnia S) .....	129
Ruizhen Yang (see Deqiang Zhou) .....	.87
Saeed S (see Sajid S H) .....	152
Sahoo K L (see Murthy G V S) .....	367
Sajid S H (with Ali S M, Saeed S, Ullah Sajid H and Naeem A) <u>Non-destructive testing for in-place strength estimation of concrete masonry units</u> .....	152
Sandhya R (see Lahiri B B) .....	.70
Santa-aho S (see Lindgren M) .....	480
Saqib W (with Sherazi H I, Khan M A, Khan S Z and Khan K A) <u>An intelligent system for machinery wear debris analysis using evolutionary algorithms</u> .....	656
Saravanan T (see Lahiri B B) .....	.70
Sarkar A (see Lahiri B B) .....	.70
Seher M (with Challis R, Isla J and Cegla F) <u>The effect of metal load material and impedance matching on EMAT performance</u> .....	536
Senxiang Lu (see Fangming Li) .....	380
Sharatchandra Singh W (with Stegemann R and Kreutzbruck M) <u>Three-dimensional finite element analysis of the stress-induced geometry effect on self-magnetic leakage fields during tensile deformation</u> .....	544
Sherazi H I (see Saqib W) .....	.656
Shuai Chen (see Chao Zhang) .....	.494
Shunmugam M S (see Ramya M) .....	.264
Sinha B (see Zeroug S) .....	.423
Skataric M (see Zeroug S) .....	.423
Stegemann R (see Sharatchandra Singh W) .....	.544

Subhani Sk (with Suresh B and Ghali V S)	
<u>Orthonormal projection approach for depth-resolvable subsurface analysis in non-stationary thermal wave imaging</u>	42
Summerscales J (see Palmer S)	318
Suresh B (see Subhani Sk)	42
Sutcliffe M (with Charlton P and Weston M)	
<u>Virtual source aperture image processing methods for non-destructive testing</u>	82
Sutcliffe M (with Lewis J)	
<u>Automatic defect recognition of single-v welds using full matrix capture data, computer vision and multi-layer perceptron artificial neural networks</u>	487
Swędrowski L (see Ciszewski T)	431
Terrab H (with El-Hag A H and Bayadi A)	
<u>Surface condition assessment of ceramic outdoor insulators under simulated pollution conditions</u>	502
Tscheliesnig P (see Lackner G)	443
Tung N (see Hughes F)	596
Ullah Sajid H (see Sajid S H)	152
Vicuña C M (see Novoa A B)	18
Vinson R (see Heyns P S)	417
Vippola M (see Lindgren M)	480
Wang A (see Peng C Y)	145
Wang E H	
<u>Scouring evaluation of river-crossing bridges using resistivity image profiling techniques</u>	187
Ward C (with Brett C)	
<u>Acceptance for phased array inspection of small bore butt welds in power generation</u>	475
Wei Li (see Juhao Ge)	313
Wei Li (see Xin'an Yuan)	435
Wei Liang (see Wenqing Lu)	35
Weilei Mu (with Guijie Liu, Xobao Wang, Peng Liu and Anyi Wang)	
<u>Research on stochastic resonance enhancement of X-ray images based on a genetic algorithm</u>	246
Wenbin Zhou (with Yongyong He and Xinchun Lu)	
<u>Scratch deformation mechanism of copper based on acoustic emission</u>	256
Wenlong Jia (see Changjun Li)	601
Wenqing Lu (with Laibin Zhang, Wei Liang and Xuchao Yu)	
<u>A novel feature extraction and optimisation method for fault diagnosis by combining WPT with FCM</u>	35
Weston M (see Sutcliffe M)	82
Wotzka D (see Błachowicz A)	94
Xiandong Ma (with Cross P and Peng Qian)	
<u>A condition monitoring system for an early warning of developing faults in wind turbine electrical systems</u>	663
Xiao Hui (see Liu Jiantang)	617
Xiao Liangyu (see Jianwei Li)	308
Xiaogang Zhang (see Chao Zhang)	494
Xiaojian Xu (with Xinping Yan, Chenxing Sheng, Chengqing Yuan and Baobao Song)	
<u>Non-destructive online condition monitoring and trend prediction of lubricating oil in a steam turbine</u>	649
Xiaokang Yin (see Juhao Ge)	313
Xiaokang Yin (see Xin'an Yuan)	435
Xinan Yuan (see Juhao Ge)	313
Xin'an Yuan (with Wei Li, Xiaokang Yin, Guoming Chen and Juhao Ge)	
<u>In-service detection of longitudinal cracks on drill pipes using induced circumferential current</u>	435
Xinbao Wang (see Weilei Mu)	246
Xinchun Lu (see Wenbin Zhou)	256
Xinping Yan (see Xiaoqian Xu)	649
Xuchao Yu (see Wenqing Lu)	35
Xuemei Han (see Jianwei Li)	308
Ya'nan Qin (see Guohua Gao)	135
Yahaghi E	
<u>Using total variation denoising for detecting defects in industrial radiography</u>	201
Yalin Zhao (see Changying Dang)	28
Yalin Zhao (see Hongquan Jiang)	194
Yalin Zhao (see Hongquan Jiang)	531
Yanyun Wu (see Juhao Ge)	313
Yonggang Xu (see Guohua Gao)	135
Yongning Zou (with Jue Wang)	
<u>3D crack segmentation in CT volume data using morphology and non-linear total variation</u>	251
Yongyong He (see Wenbin Zhou)	256
Yu-Ju Lin (with Che-Hua Yang and Jiunn-Yuan Huang)	
<u>Effect of degradation on non-linear ultrasonic behaviour of aged centrifugally-cast stainless steel</u>	142
Yue Yu (with Gongtian Shen and Jun Qian)	
<u>Damage inspection for a composite cylinder using a thermography test during air injection</u>	671
Yulin Xiao (see Changying Dang)	28
Zerouq S (with Bose S, Sinha B, Skataric M, Liu Y and D'Angelo R)	
<u>Sonic and ultrasonic measurement applications for cased oil wells</u>	423
Zhang A (see Oh T)	609
Zhang Hanyuan (see Jin Yong)	551
Zhang Liao (see Jin Yong)	551
Zhao Min (see Liu Jiantang)	617
Zhao Wang (see Changying Dang)	28
Zhao Wang (see Hongquan Jiang)	194
Zhao Wang (see Hongquan Jiang)	531
Zhenjing Yao (with Li Hong and Lina Cheng)	
<u>Improvement of measurement distance in multi-channel ultrasonic ranging systems through adaptive chaotic pulse position width modulation excitation sequences</u>	324
Zhixiong Li (see Chao Zhang)	494
Zippo A (see Gelman L)	409

## SUBJECT INDEX

### ACOUSTIC EMISSION METHODS

- New aspects concerning the generation of acoustic emissions in spur gears, the influence of operating conditions and gear defects in planetary gearboxes, by A B Novoa and C M Vicuña ..... 18
- Application of a mobile system in diagnostics of power capacitors using the acoustic emission method, by A Błachowicz, T Boczar and D Wotzka ..... 94
- Scratch deformation mechanism of copper based on acoustic emission, by Wenbin Zhou, Yongyong He and Xinchun Lu ..... 256
- Requalification of LPG tanks in Europe: Verifying the structural integrity by monitoring the pressure test with acoustic emission, by G Lackner and P Tscheliesnig ..... 443

### COMPUTED TOMOGRAPHY

- 3D crack segmentation in CT volume data using morphology and non-linear total variation, by Yongning Zou and Jue Wang ..... 251
- CT image reconstruction of half-covered projection with fewer iterations based on SB-TVM, by J Gou and H Dong ..... 373

### CONDITION MONITORING AND SHM

- Condition monitoring and diagnostics of an extruder motor and its gearbox vibration problem, by S Noroozi, A G A Rahman, M Dupac, Z C Ong, M B S Mohd al-Attas and P Davenport ..... 101
- Fault diagnosis of industrial robot gears based on discrete wavelet transform and artificial neural network, by Alaa Abdulhady Jaber and R Bicker ..... 179
- Simulations and measurements of the dynamic response of a paper machine roller, by M Mishra, J Odellius, M Rantatalo, R Johnsson, J-O Larsson, M Bellander and I Niemi ..... 210
- Innovative technology for continuous fatigue crack condition monitoring of bridges: long-term electrochemical fatigue sensor (LTEFS), by M Miceli, M A Moshier, L Nelson and R Brinkerhoff ..... 351
- Novel spectral kurtosis technology for adaptive vibration condition monitoring of multi-stage gearboxes, by L Gelman, N Harish Chandra, R Kurosz, F Pellicano, M Barbieri and A Zippo ..... 409
- Rotating machine diagnosis using smart feature selection under non-stationary operating conditions, by P S Heyns, R Vinson and T Heyns ..... 417
- Current-based higher-order spectral covariance as a bearing diagnostic feature for induction motors, by T Ciszewski, L Gelman and L Swędrowski ..... 431
- Optimised ensemble empirical mode decomposition with optimised noise parameters and its application to rolling element bearing fault diagnosis, by Chao Zhang, Zhixiong Li, Shuai Chen, Jianguo Wang and Xiaogang Zhang ..... 494
- Surface condition assessment of ceramic outdoor insulators under simulated pollution conditions, by H Terrab, A H El-Hag and A Bayadi ..... 502
- A novel normalisation procedure for the sensor positioning problem in vibration monitoring of drilling using artificial neural networks, by R S Nakandhrakumar, D Dinakaran, M Gopal and J Pattabiraman ..... 556

- Non-destructive online condition monitoring and trend prediction of lubricating oil in a steam turbine, by Xiaojian Xu, Xinpeng Yan, Chenxing Sheng, Chengqing Yuan and Baobao Song ..... 649
- An intelligent system for machinery wear debris analysis using evolutionary algorithms, by W Saqib, H I Sherazi, M A Khan, S Z Khan and K A Khan ..... 656

### A condition monitoring system for an early warning of developing faults in wind turbine electrical systems,

by Xiantong Ma, P Cross and Peng Qian ..... 663

### ELECTROMAGNETIC AND MAGNETIC METHODS

- Investigation of rectangular differential probes for pulsed eddy current non-destructive testing, by Deqiang Zhou, Jun Wang, Jialong Wu, Ruizhen Yang, Hong Zhang and Qiuju Zhang ..... 87
- A numerical study of the depth of penetration of eddy currents, by S Majidnia, R Nilavalan and J Rudlin ..... 129
- The effect of variable tensile stress on the MFL signal response of defective wire ropes, by Guohua Gao, Meijuan Lian, Yonggang Xu, Ya'nan Qin and Lin Gao ..... 135
- Performance evaluation of chairlift ropes in two man-riding systems in an incline coal mine using a non-destructive testing instrument, by D Basak ..... 206
- Examination of Barkhausen noise parameters for characterisation of strain-induced martensitic transformation in AISI 304 stainless steel, by E Ahmadzade-Beiraki, M Mazinani and M Kashefi ..... 297
- Three-axial MFL inspection in pipelines for defect imaging using a hybrid inversion procedure, by Junjie Chen ..... 302
- Influence of applied load in ferromagnetic material on magneto-mechanical phenomena, by Jianwei Li, Xiao Liangyu and Xuemei Han ..... 308
- New parameters for the ACFM inspection of different materials, by Jihuao Ge, Wei Li, Guoming Chen, Xiaokang Yin, Yanyun Wu, Xinan Yuan and Mengyi Zhao ..... 313
- Defect profile reconstruction from MFL signals based on a specially-designed genetic taboo search algorithm, by Fangming Li, Jian Feng, Jinhai Liu and Senxiang Lu ..... 380
- In-service detection of longitudinal cracks on drill pipes using induced circumferential current, by Xin'an Yuan, Wei Li, Xiaokang Yin, Guoming Chen and Jihuao Ge ..... 435
- Barkhausen noise response of three different welded duplex stainless steels, by M Lindgren, S Santa-aho and M Vippola ..... 480
- The effect of metal load material and impedance matching on EMAT performance, by M Seher, R Challis, J Isla and F Cegla ..... 536
- Three-dimensional finite element analysis of the stress-induced geometry effect on self-magnetic leakage fields during tensile deformation, by W Sharatchandra Singh, R Stegemann and M Kreutzbruck ..... 544
- High-frequency eddy current measurements using sensor-mounted electronics, by F Hughes, R Day, N Tung and S Dixon ..... 596
- Theoretical research on the characteristics of the self-magnetic leakage field induced by ferromagnetic pipelines, by Changjun Li, Chao Chen, Kexi Liao, Wenlong Jia and Qian Huang ..... 601
- Evaluation of stress concentration of a low-carbon steel based on residual magnetic field measurements, by S Bao, M L Fu, H J Lou, S Z Bai and S N Hu ..... 678
- ### GENERAL & REVIEWS
- Rare events – a probability approach or an ill-posed problem?, by K Osterloh and G-R Jaenisch ..... 46
- Non-destructive testing for in-place strength estimation of concrete masonry units, by S H Sajid, S M Ali, S Saeed, H Ullah Sajid and A Naeem ..... 152
- On a reliable assessment of the location and size of rebar in concrete structures from radargrams of ground-penetrating radar, by M Ramya, K Balasubramaniam and M S Shunmugam ..... 264

<u>The design and implementation of an online detection system for defects in glass,</u> by Jin Yong, Zhang Liao, Zhang Hanyuan and Li Hongying .....	551	<u>Weld extraction of radiographic images based on Bézier curve fitting and medial axis transformation,</u> by Hongquan Jiang, Yalin Zhao, Jianmin Gao and Zhao Wang .....	531
<b>IMAGE AND SIGNAL PROCESSING</b>			
<u>A novel feature extraction and optimisation method for fault diagnosis by combining WPT with FCM,</u> by Wenqing Lu, Laibin Zhang, Wei Liang and Xuchao Yu .....	35	<u>Orthonormal projection approach for depth-resolvable subsurface analysis in non-stationary thermal wave imaging,</u> by Sk Subhani, B Suresh and V S Ghali .....	42
<u>Virtual source aperture image processing methods for non-destructive testing,</u> by M Sutcliffe, P Charlton and M Weston .....	82	<u>Studies on temperature evolution during fatigue cycling of Ni-Al bronze (NAB) alloy using infrared thermography,</u> by B B Lahiri, A Sarkar, S Bagavathiappan, A Nagesha, T Saravanan, R Sandhya, T Jayakumar and John Philip .....	70
<u>Scouring evaluation of river-crossing bridges using resistivity image profiling techniques,</u> by E H Wang .....	187	<u>Damage inspection for a composite cylinder using a thermography test during air injection,</u> by Yue Yu, Gongtian Shen and Jun Qian .....	671
<u>Estimation of the surface roughness of K9 optical glass in precision grinding using the brittle material removal fraction based on an improved image processing algorithm,</u> by Chen Jiang, Chunhua Wang and Lingbao Kong .....	240	<b>ULTRASONIC TESTING</b>	
<u>Ranking of fibre-reinforced composite plate surface finish quality by wavelet texture analysis,</u> by S Palmer, W Hall and J Summerscales .....	318	<u>Effect of degradation on non-linear ultrasonic behaviour of aged centrifugally-cast stainless steel,</u> by Yu-Ju Lin, Che-Hua Yang and Jiunn-Yuan Huang .....	142
<u>Automatic defect recognition of single-v welds using full matrix capture data, computer vision and multi-layer perceptron artificial neural networks,</u> by M Sutcliffe and J Lewis .....	487	<u>Novel wavelet self-optimisation threshold denoising method in axle press-fit ultrasonic defect detection,</u> by C Y Peng, X R Gao and A Wang .....	145
<u>A positron injection-based 3D imaging test method for inner cavities in complex parts,</u> by Liu Jiantang, Zhao Min and Xiao Hui .....	617	<u>Improvement of measurement distance in multi-channel ultrasonic ranging systems through adaptive chaotic pulse position width modulation excitation sequences,</u> by Zhenjing Yao, Li Hong and Lina Cheng .....	324
<b>OPTICAL METHODS</b>			
<u>System for monitoring partial discharges occurring in overhead power transmission line insulators based on ultraviolet radiation registration,</u> by P Fracz .....	360	<u>A study of precipitation behaviour of A356 alloy using ultrasonic velocity measurements,</u> by G V S Murthy, D Patel and K L Sahoo .....	367
<b>RADIOGRAPHY including DIGITAL RADIOGRAPHY</b>			
<u>A novel method for detecting weld defects accurately and reliably in radiographic images,</u> by Changying Dang, Jianmin Gao, Zhao Wang, Yulin Xiao and Yalin Zhao .....	28	<u>Sonic and ultrasonic measurement applications for cased oil wells,</u> by S Zeroug, S Bose, B Sinha, M Skataric, Y Liu and R D'Angelo .....	423
<u>Weld defect classification based on texture features and principal component analysis,</u> by Hongquan Jiang, Yalin Zhao, Jianmin Gao and Zhao Wang .....	194	<u>Advanced acoustic detection system for monitoring nuclear power plant components,</u> by G Por .....	439
<u>Using total variation denoising for detecting defects in industrial radiography,</u> by E Yahaghi .....	201	<u>Acceptance for phased array inspection of small bore butt welds in power generation,</u> by C Ward and C Brett .....	475
<u>Research on stochastic resonance enhancement of X-ray images based on a genetic algorithm,</u> by Weilei Mu, Guijie Liu, Xinbao Wang, Peng Liu and Anyi Wang .....	246	<u>Advanced phased array technology application for single-sided access weld inspection,</u> by P R Dheeraj, S Khaja M and I Mohsin .....	585
<u>Concrete strength evaluation in an early-age curing process using SVM with ultrasonic harmonic waves,</u> by T Oh, J Kim, A Zhang, C Lee and S Park .....			
609			