

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 56 2014 – INDEXES

Key to issues

No 1	January	1-52	No 7	July	353-408
No 2	February	53-112	No 8	August	409-464
No 3	March	113-172	No 9	September	465-528
No 4	April	173-232	No 10	October	529-584
No 5	May	233-288	No 11	November	585-648
No 6	June	289-352	No 12	December	649-712

REGULAR FEATURES AND SHORT TITLES

Associate Members	52, 112, 172, 232, 288, 352, 408, 464, 528, 584, 648, 712
BINDT Awards	9, 510
Comment	2, 54, 114, 176, 234, 290, 354, 410, 466, 530, 586, 650
Conference Reports	
NDT 2014 – The 53rd Annual British Conference on NDT	629
Features	
X-ray laboratory or art studio?	121
Industry Reports	
Landscape report demonstrates importance of NDT to the UK economy	473
Institute Membership	60, 292, 358, 654
Institute News	60
Institute Notices	297
International Diary	39, 96, 157, 217, 276, 335, 395, 450, 513, 567, 633, 697
NDT Info	42, 101, 160, 221, 278, 339, 398, 453, 517, 571, 636, 700
Newsdesk	4, 56, 117, 178, 236, 292, 356, 412, 469, 533, 588, 652
Obituaries	
I M Barnes	593
K Geddes	414
I Kitto	60
M Moles	181
J Sheppard	593
Product Showcase	49, 109, 169, 228, 286, 347, 406, 460, 525, 579, 645, 709
Special Features	
Advanced Ultrasonics	465
Condition Monitoring	409
Magnetic Methods	649
NDT in Art & Cultural Heritage	113
Novel Applications	1
Pipeline Inspection	173
Ultrasonics	173, 585
Weld Inspection	289
Technical Literature	159

AUTHOR INDEX

Aoyagi M (with Takefumi Hiraguri and Takahiro Ueno)	
Detection of the boundary between oil and water in a container by dynamic heat conduction	15
Arora V (with Siddiqui J A, Mulaveesala R and Muniyappa A)	
Hilbert transform-based pulse compression approach to infrared thermal wave imaging for sub-surface defect detection in steel material	550
Artigao E (with Ferrando J L, Gan T-H, Wang B, Kappatos V, Selcuk C and Souza S)	
Development of a baseline as a novel strategy for a condition monitoring system for the assessment of wind turbine generators	417
Balasubramaniam K (see Padiyar M J)	195
Balasubramaniam K (see Puliyakote S)	22
Balasubramaniam K (see Subhash N N)	607
Bao S (with Lou H and Gong S)	
Magnetic field variation of a low-carbon steel under tensile stress	252

Barden T (see Felice M V)	492
Battat M (with Klein R and Bortman J)	
Application of advanced signal separation methods in a complex case of a bearing fault	434
Bérenguer C (see Cablea G)	443
Boller C (see Cosarinsky G)	553
Bond J (see Marvasti M)	256
Bortman J (see Battat M)	434
Boulgouris N V (see Fateri S)	499
Boulgouris N V (see Lowe P S)	505
Brierley N (with Tippetts T and Cawley P)	
The computational enhancement of automated non-destructive inspection	599
Bucklow S (see El-Youssef M)	124
Buttlar W G (see McGovern M E)	367
Cablea G (with Granjon P and Bérenguer C)	
Method for computing efficient electrical indicators for offshore wind turbine monitoring	443
Calóba L P (see Pinto C F C)	204
Cawley P (see Brierley N)	599
Changying Dang (see Weilei Mu)	10
Charlton P (see Sutcliffe M)	75
Chengguang Fan (with Mengchun Pan and Feilu Luo)	
Ultrasonic broadband time-reversal with multiple signal classification imaging using full matrix capture	487
Chunyao Zhou (see Yibo Li)	677
Cosarinsky G (with Kopp M, Rabung M, Seiler G, Petragalli A, Vega D, Sheikh-Amiri M, Ruch M and Boller C)	
Non-destructive characterisation of laser-hardened steels	553
De Corte W	
Positional footprint characterisation of truck tyres on flexible orthotropic steel bridge decks	63
Dorantes-Gonzalez D J (see Yibo Li)	677
Dunhill T (see Felice M V)	492
El-Youssef M (with Bucklow S and Maev R)	
The development of a diagnostic method for geographical and condition-based analysis of artworks using craquelure pattern recognition techniques	124

Elasha F (with Ruiz-Carcel C, Mba D, Jaramillo V H and Ottewill J R) <u>Detection of machine soft foot with vibration analysis</u>	622	Jayakumar T (see Sharatchandra Singh W)	683
Fan Wei (see Wang Tao)	189	Jia Z Q (see Zhao Y)	360
Fangji Gan (with Zhengjun Wan, Junbi Liao and Wenqiang Li) <u>High-accuracy evaluation of pitting corrosion in field signature method</u>	613	Jianmin Gao (see Weilei Mu)	10
Fateri S (with Boulgouris N V and Wilkinson A) <u>A two-dimensional fast Fourier transform using incremented frequency measurement for guided wave analysis</u>	499	Jing-jing Hu (see Xing Zhao)	541
Fateri S (see Lowe P S)	505	Jun Zhang (with Xiao-hong Li, Ya-kun Shi and Long-shuang Liang) <u>Phased array ultrasonic inspection of embedded defects in hydropower turbine runner welds</u>	390
Fava J (see Giorgetti M)	264	Junbi Liao (see Fangji Gan)	613
Feilu Luo (see Chengguang Fan)	487	Junjie Chen (with Songling Huang and Wei Zhao) <u>Three-dimensional defect reconstruction from magnetic flux leakage signals in pipeline inspection based on a dynamic taboo search procedure</u>	535
Felice M V (with Velichko A, Wilcox P D, Barden T and Dunhill T) <u>Obtaining geometries of real cracks and using an efficient finite element method to simulate their ultrasonic array response</u>	492	Kanzler D (with Müller C and Pitkänen J) <u>Probability of detection for surface-breaking holes with low-frequency eddy current testing – a non-linear multi-parametric approach</u>	664
Ferrando J L (see Artigao E)	417	Kappatos V (see Artigao E)	417
Findeis D (see Gryzagoridis J)	35	Kim Ki-Seong (see Mohammed M S)	240
Fukunaga K (with Picollo M) <u>Terahertz time domain imaging for cultural heritage</u>	142	Klein R (see Battat M)	434
Fumin Chen (see Weilei Mu)	10	Kopp M (see Cosarinsky G)	553
Gan T-H (see Artigao E)	417	Lahdelma S (see Laurila J)	439
Gan T-H (see Rafael S)	422	Laurila J (with Lahdelma S) <u>Advanced fault diagnosis by means of complex order derivatives</u>	439
Garcia A (with Rohling H, Schmutzler H, Wittich H and Schulte K) <u>Automatic evaluation of non-destructive testing of composites</u>	319	Lehmann E (see Mannes D)	137
Gavrilov D (with Maeva E and Maev R G) <u>Thermographic inspection in the service of art science: theory, methods and considerations</u>	131	Leybovich A (with Smith A) <u>Effect of surface machine roughness on detectability of sub-millimetre reflectors in polycrystalline materials using ultrasonic immersion testing</u>	381
Giorgetti M (with Ruch M, Fava J, Tacchia M and Olivar Godaz E N) <u>Some ideas on the inspection of aluminium mountain bicycle frames</u>	264	Li Zeng (see Wei Yu)	69
Gong S (see Bao S)	252	Lian Zhanghua (see Zhou Zhaoming)	691
Gongtian Shen (see Lifei Li)	269	Lifei Li (with Gongtian Shen, Zheng Zhang and Zhanwen Wu) <u>Investigation on acoustic emission characteristics of a paper dryer</u>	269
Goodfellow G (see Rafael S)	422	Lin L (with Peterson M L and Greenberg A R) <u>Use of the ultrasonic slow wave to identify pore closure caused by deposition of a polymeric surface layer</u>	183
Gou Rui-Bin (see Yu Min)	669	Lin Li (see Ma Yilai)	31
Granjon P (see Cablea G)	443	Liu Banteng (with Hou Dibo, Liu Baoling, Zhao Ling, Huang Pingjie and Zhang Guangxin) <u>Defect detection and identification in eddy current testing using subtractive clustering algorithm combined with RBFNN</u>	375
Greenberg A R (see Lin L)	183	Liu Baoling (see Liu Banteng)	375
Gryzagoridis J (with Findeis D) <u>Tap testing of composites benchmarked with digital shearography</u>	35	Liu S (see Zhao Y)	360
Guo Jianmin (see Wan Zhenkai)	246	Long-shuang Liang (see Jun Zhang)	390
Guo R (see Zhao Y)	360	Lou H (see Bao S)	252
Guoqian Jiang (see Qun He)	326	Lowe P S (with Fateri S, Sanderson R and Boulgouris N V) <u>Finite element modelling of the interaction of ultrasonic guided waves with coupled piezoelectric transducers</u>	505
Haijiang Zhu (see Shifeng Zhou)	385	Ma J (see Zhao Y)	360
Havale V (with Narayanan S) <u>Diagnosis of manufacturing defects in a gear pair using wavelet analysis of vibration and acoustic signals and an ANN-based inference technique</u>	426	Ma L (see Wang T)	617
Hongquan Jiang (see Weilei Mu)	10	Ma Yilai (with Lin Li) <u>Research on internal and external defect identification of drill pipe based on weak magnetic inspection</u>	31
Hou Dibo (see Liu Banteng)	375	Maev R (see El-Youssef M)	124
Hu Bo (see Zhou ZhaoMing)	211	Maev R G (see Gavrilov D)	131
Huang Pingjie (see Liu Banteng)	375	Maeva E (see Gavrilov D)	131
Hui-tao Zhang (see Xing Zhao)	541	Majidnia S (with Rudlin J and Nilavalan R) <u>Investigations on a pulsed eddy current system for flaw detection using an encircling coil on a steel pipe</u>	560
Huiyu Zhu (see Yibo Li)	677		
Hunger K (see Mannes D)	137		
Jaramillo V H (see Elasha F)	622		

Majidnia S (with Schneider C, Rudlin J and Nilavalan R) <u>A method of determining the eddy current instrument response from models</u>	82	Rabung M (see Cosarinsky G)	553
Mannes D (with Lehmann E, Masalles A, Schmidt-Ott K, Przychowski A v, Schaeppi K, Schmid F, Peetermans S and Hunger K) <u>The study of cultural heritage relevant objects by means of neutron imaging techniques</u>	137	Rafael S (with Romero A, Souza S, Gan T-H, Neasham J and Goodfellow G) <u>Detection of gearbox failures by combined acoustic emission and vibration sensing in rotating machinery</u>	422
Mao H (see Wang T)	617	Reis H (see McGovern M E)	367
Marvasti M (with Bond J, Matheson M and Sinclair A N) <u>Phased array inspection at elevated temperatures: effects of ultrasonic beam skew</u>	256	Rohling H (see Garcia A).....	319
Masalles A (see Mannes D).....	137	Romero A (see Rafael S).....	422
Matheson M (see Marvasti M).....	256	Ruch M (see Cosarinsky G).....	553
Mba D (see Elasha F).....	622	Ruch M (see Giorgetti M).....	264
McGovern M E (with Buttlar W G and Reis H) <u>Characterisation of oxidative ageing in asphalt concrete using a non-collinear ultrasonic wave mixing approach</u>	367	Rudlin J (see Majidnia S).....	82
Mengchun Pan (see Chengguang Fan)	487	Rudlin J (see Majidnia S).....	560
Mery D <u>Computer vision technology for X-ray testing</u>	147	Ruubin Gou (with Min Yu, Yiliang Zhang and Xuedong Xu) <u>Residual stress measurement of 1500 m³ spherical tanks by X-ray diffraction method</u>	26
Min Yu (see Ruubin Gou)	26	Ruiz-Carcel C (see Elasha F)	622
Mohammed M S (with Kim Ki-Seong) <u>Improving an adaptive filtering system for ultrasonic testing</u>	240	Sanderson R (see Lowe P S)	505
Mukhopadhyay C K (see Sharatchandra Singh W)	683	Santa-aho S (with Sorsa A, Nurmikolu A and Vippola M) <u>Review of railway track applications of Barkhausen noise and other magnetic testing methods</u>	657
Müller C (see Kanzler D).....	664	Schaeppi K (see Mannes D).....	137
Narayanan S (see Havale V)	426	Schmid F (see Mannes D).....	137
Neasham J (see Rafael S).....	422	Schmidt-Ott K (see Mannes D).....	137
Nilavalan R (see Majidnia S).....	82	Schmutzler H (see Garcia A)	319
Nilavalan R (see Majidnia S).....	560	Schneider C (see Majidnia S)	82
Nurmikolu A (see Santa-aho S).....	657	Schulte K (see Garcia A).....	319
Olivar Godaz E N (see Giorgetti M)	264	Seiler G (see Cosarinsky G).....	553
Ottewill J R (see Elasha F).....	622	Selcuk C (see Artigao E).....	417
Padiyar M J (with Balasubramaniam K) <u>Lamb wave-based air-coupled ultrasonic inspection technique for filament-wound composite pipes</u>	195	Seldis T <u>Longitudinal wave attenuation measurements by means of a diffraction-insensitive large-aperture PVDF hydrophone</u>	595
Peetermans S (see Mannes D).....	137	Sharatchandra Singh W (with Purna Chandra Rao B, Mukhopadhyay C K and Jayakumar T) <u>Finite element model-based approach for magnetic flux leakage testing of steel plates using 2D tandem GMR array sensors</u>	683
Pei Yu (see Wang Tao)	189	Sheikh-Amiri M (see Cosarinsky G)	553
Peterson M L (see Lin L)	183	Shi TaiHe (see Zhou ZhaoMing)	211
Petragalli A (see Cosarinsky G)	553	Shi Taihe (see Zhou Zhaoming).....	691
Piccolo M (see Fukunaga K)	142	Shifeng Zhou (with Haijiang Zhu and Yong Zhu) <u>Fine ultrasonic elasticity imaging based on the Kalman filter in a simulation model</u>	385
Ping Xie (see Qun He)	326	Shuangsai Liu (see Yibo Li).....	677
Pinto C F C (with Silva R R, Calôba L P and Soares S D) <u>Probability of defect propagation in pipelines (POP curves)</u>	204	Si Zhiyuan (see Yu Min)	669
Pitkänen J (see Kanzler D).....	664	Silva R R (see Pinto C F C)	204
Przychowski A v (see Mannes D)	137	Sinclair A N (see Marvasti M)	256
Puliyakote S (with Singanamalli A V and Balasubramaniam K) <u>Use of acoustic emission in lubrication monitoring in internal combustion engines</u>	22	Singanamalli A V (see Puliyakote S)	22
Purna Chandra Rao B (see Sharatchandra Singh W).....	683	Smith A (see Leybovich A)	381
Qiao Yinhu (see Yu Min)	669	Soares S D (see Pinto C F C)	204
Qun He (with Xiaoru Ren, Guoqian Jiang and Ping Xie) <u>A hybrid feature extraction methodology for gear pitting fault detection using motor stator current signal</u>	326	Song J F (see Zhao Y).....	360
		Songling Huang (see Junjie Chen).....	535
		Sorsa A (see Santa-aho S)	657

Soua S (see Artigao E)	417	Xiaoru Ren (see Qun He).....	326
Soua S (see Rafael S).....	422	Xiangdong Gao (with Yan Sun) <u>Monitoring of high-power disk laser welding of type 304 austenitic stainless steel based on keyhole dynamic characteristics</u>	312
Subhash N N (with Balasubramaniam K) <u>Fluid level sensing using ultrasonic waveguides</u>	607	Xie Zhanshan (see Yu Min)	669
Sun J H (see Zhao Y)	360	Xing Zhao (with Jing-jing Hu, Yun-song Zhao and Hui-tao Zhang) <u>A novel iterative reconstruction method for dual-energy computed tomography based on polychromatic forward-projection calibration</u>	541
Sutcliffe M (with Charlton P and Weston M) <u>Multiple virtual source aperture imaging for non-destructive testing</u>	75	Xu G (see Wang T)	617
Tacchia M (see Giorgetti M)	264	Xuedong Xu (see Ruibin Gou)	26
Takahiro Ueno (see Aoyagi M).....	15	Ya-kun Shi (see Jun Zhang)	390
Takefumi Hiraguri (see Aoyagi M).....	15	Yahaghi E <u>The detection of weld defect images using shape-from-shading and wavelet denoising methods</u>	308
Tippetts T (see Brierley N).....	599	Yan Sun (see Xiangdong Gao).....	312
Vega D (see Cosarinsky G)	553	Yibo Li (with Shuang sai Liu, Dorantes-Gonzalez D J, Chunyao Zhou and Huiyu Zhu) <u>A novel above-ground marking approach based on the girth weld impact sound for pipeline defect inspection</u>	677
Velichko A (see Felice M V).....	492	Yiliang Zhang (see Ruibin Gou)	26
Vippola M (see Santa-aho S)	657	Yong Zhu (see Shifeng Zhou).....	385
Wan Fu (see Zhou Zhaoming)	691	Yu Hen Hu (see Weixin Gao).....	299
Wan Zhenkai (with Wang Zhangang and Guo Jianmin) <u>Analysis of non-destructive testing of three-dimensional braided composites using scanning SQUID NDT</u>	246	Yu Min (with Gou Rui-Bin, Zhang Chunyu, Qiao Yinhu, Si Zhiyuan and Xie Zhanshan) <u>Research on the relationship between metal magnetic memory signal distortion and yield strain under static tension test</u>	669
Wang B (see Artigao E)	417	Yu Runqiao (see Zhou Zhaoming).....	691
Wang C (see Wang T)	617	Yun-song Zhao (see Xing Zhao)	541
Wang T (with Wang C, Xu G, Mao H and Ma L) <u>Ultrasonic scanning inspection of resistance spot welding joints</u>	617	Zappavigna G <u>Quality control of cladding in hydrocracking reactors: applicable procedures and acceptance criteria</u>	87
Wang Tao (with Pei Yu, Xiao Huiheng and Fan Wei) <u>Detection of small gas leaks based on neural networks and D-S evidential theory using ultrasonics</u>	189	Zhang Chunyu (see Yu Min)	669
Wang Zhangang (see Wan Zhenkai)	246	Zhang Guangxin (see Liu Banteng).....	375
Wei Yu (with Li Zeng and Xiangyu Yang) <u>A study of metal artefact reduction for industrial X-ray CT system with limited radiation energy</u>	69	Zhanwen Wu (see Lifei Li)	269
Wei Zhao (see Junjie Chen)	535	Zhao Ling (see Liu Banteng)	375
Weilei Mu (with Jianmin Gao, Hongquan Jiang, Fumin Chen, Zhao Wang and Changying Dang) <u>A radiographic image quality assessment algorithm based on network topology analysis</u>	10	Zhao Wang (see Weilei Mu).....	10
Weixin Gao (with Yu Hen Hu) <u>Real-time X-ray radiography for defect detection in submerged arc welding and segmentation using sparse signal representation</u>	299	Zhao Y (with Sun J H, Ma J, Liu S, Guo R, Song J F and Jia Z Q) <u>Application of the hybrid laser ultrasonic method in rail inspection</u>	360
Wenqiang Li (see Fangji Gan)	613	Zheng Zhang (see Lifei Li)	269
Weston M (see Sutcliffe M)	75	Zhengjun Wan (see Fangji Gan)	613
Wilcox P D (see Felice M V)	492	Zhou ZhaoMing (with Shi TaiHe and Hu Bo) <u>Study of apparent resistivity imaging testing of the corrosion of buried metal pipelines</u>	211
Wilkinson A (see Fateri S)	499	Zhou Zhaoming (with Shi Taihe, Yu Runqiao, Lian Zhanghua and Wan Fu) <u>Metal magnetic memory-based fluxgate sensor for imaging detection of coiled tubing</u>	691
Wittich H (see Garcia A).....	319		
Xiangyu Yang (see Wei Yu)	69		
Xiao Huiheng (see Wang Tao)	189		
Xiao-hong Li (see Jun Zhang)	390		

SUBJECT INDEX

ACOUSTIC EMISSION METHODS

- Use of acoustic emission in lubrication monitoring in internal combustion engines,
by S Puliakote, A V Singanamalli and K Balasubramaniam.....22
- Investigation on acoustic emission characteristics of a paper dryer,
by Lifei Li, Gongtian Shen, Zheng Zhang and Zhanwen Wu269

COMPUTED TOMOGRAPHY

- A study of metal artefact reduction for industrial X-ray CT system with limited radiation energy,
by Wei Yu, Li Zeng and Xiangyu Yang69
- A novel iterative reconstruction method for dual-energy computed tomography based on polychromatic forward-projection calibration,
by Xing Zhao, Jing-jing Hu, Yun-song Zhao and Hui-tao Zhang541

CONDITION MONITORING

- Positional footprint characterisation of truck tyres on flexible orthotropic steel bridge decks,
by W De Corte63
- Monitoring of high-power disk laser welding of type 304 austenitic stainless steel based on keyhole dynamic characteristics,
by Xiangdong Gao and Yan Sun312
- A hybrid feature extraction methodology for gear pitting fault detection using motor stator current signal,
by Qun He, Xiaoru Ren, Guoqian Jiang and Ping Xie326
- Development of a baseline as a novel strategy for a condition monitoring system for the assessment of wind turbine generators,
by E Artigao, J L Ferrando, T-H Gan, B Wang, V Kappatos, C Selcuk and S Sousa417
- Detection of gearbox failures by combined acoustic emission and vibration sensing in rotating machinery,
by S Rafael, A Romero, S Souza, T-H Gan, J Neasham and G Goodfellow422
- Diagnosis of manufacturing defects in a gear pair using wavelet analysis of vibration and acoustic signals and an ANN-based inference technique,
by V Havale and S Narayanan426
- Application of advanced signal separation methods in a complex case of a bearing fault,
by M Battat, R Klein and J Bortman434
- Advanced fault diagnosis by means of complex order derivatives,
by J Laurila and S Lahdelma439
- Method for computing efficient electrical indicators for offshore wind turbine monitoring,
by G Cablea, P Granjon and C Bérenguer443
- Detection of machine soft foot with vibration analysis,
by F Elasha, C Ruiz-Carcel, D Mba, V H Jaramillo and J R Ottewill622

ELECTROMAGNETIC METHODS

- Research on internal and external defect identification of drill pipe based on weak magnetic inspection,
by Ma Yilai and Lin Li31
- A method of determining the eddy current instrument response from models,
by S Majidnia, C Schneider, J Rudlin and R Nilavalan82
- Analysis of non-destructive testing of three-dimensional braided composites using scanning SQUID NDT,
by Wan Zhenkai, Wang Zhangang and Guo Jianmin246
- Magnetic field variation of a low-carbon steel under tensile stress,
by S Bao, H Lou and S Gong252
- Defect detection and identification in eddy current testing using subtractive clustering algorithm combined with RBFNN,
by Liu Banteng, Hou Dibo, Liu Baoling, Zhao Ling, Huang Pingjie and Zhang Guangxin375

- Three-dimensional defect reconstruction from magnetic flux leakage signals in pipeline inspection based on a dynamic taboo search procedure,
by Junjie Chen, Songling Huang and Wei Zhao535

- Non-destructive characterisation of laser-hardened steels,
by G Cosarinsky, M Kopp, M Rabung, G Seiler, A Petragalli, D Vega, M Sheikh-Amiri, M Ruch and C Boller553

- Investigations on a pulsed eddy current system for flaw detection using an encircling coil on a steel pipe,
by S Majidnia, J Rudlin and R Nilavalan560

- Review of railway track applications of Barkhausen noise and other magnetic testing methods,
by S Santa-aho, A Sorsa, A Nurmikolu and M Vippola657

- Probability of detection for surface-breaking holes with low-frequency eddy current testing – a non-linear multi-parametric approach,
by D Kanzler, C Müller and J Pitkänen664

- Research on the relationship between metal magnetic memory signal distortion and yield strain under static tension test,
by Yu Min, Gou Rui-Bin, Zhang Chunyu, Qiao Yinhu, Si Zhiyuan and Xie Zhanshan669

- A novel above-ground marking approach based on the girth weld impact sound for pipeline defect inspection,
by Yibo Li, Shuang sai Liu, D J Dorantes-Gonzalez, Chunyao Zhou and Huiyu Zhu677

- Finite element model-based approach for magnetic flux leakage testing of steel plates using 2D tandem GMR array sensors,
by W Sharatchandra Singh, B Purna Chandra Rao, C K Mukhopadhyay and T Jayakumar683

- Metal magnetic memory-based fluxgate sensor for imaging detection of coiled tubing,
by Zhou Zhaoming, Shi Taihe, Yu Runqiao, Lian Zhanghua and Wan Fu691

GENERAL & REVIEWS

- Quality control of cladding in hydrocracking reactors: applicable procedures and acceptance criteria,
by G Zappavigna87
- Some ideas on the inspection of aluminium mountain bicycle frames,
by M Giorgetti, M Ruch, J Fava, M Tacchia and E N Olivar Godaz264
- Automatic evaluation of non-destructive testing of composites,
by A Garcia, H Rohling, H Schmutzler, H Wittich and K Schulte319
- The computational enhancement of automated non-destructive inspection,
by N Brierley, T Tippetts and P Cawley599

IMAGE PROCESSING

- Multiple virtual source aperture imaging for non-destructive testing,
by M Sutcliffe, P Charlton and M Weston75
- The development of a diagnostic method for geographical and condition-based analysis of artworks using craquelure pattern recognition techniques,
by M El-Youssef, S Bucklow and R Maev124
- The study of cultural heritage relevant objects by means of neutron imaging techniques,
by D Mannes, E Lehmann, A Masalles, K Schmidt-Ott, A v Przychowski, K Schaeppi, F Schmid, S Peetermans and K Hunger137
- Terahertz time domain imaging for cultural heritage,
by K Fukunaga and M Picollo142
- Study of apparent resistivity imaging testing of the corrosion of buried metal pipelines,
by Zhou ZhaoMing, Shi TaiHe and Hu Bo211
- The detection of weld defect images using shape-from-shading and wavelet denoising methods,
by E Yahaghi308

INSPECTION QUALIFICATION AND RELIABILITY

- Probability of defect propagation in pipelines (POP curves),
by C F C Pinto, R R Silva, L P Calôba and S D Soares204

OPTICAL METHODS

- Tap testing of composites benchmarked with digital shearography,
by *J Gryzagoridis and D Findeis*35

RADIOGRAPHY including DIGITAL RADIOGRAPHY

- A radiographic image quality assessment algorithm based on network topology analysis,
by *Weilei Mu, Jianmin Gao, Hongquan Jiang, Fumin Chen, Zhao Wang and Changying Dang*10
- Computer vision technology for X-ray testing,
by *D Mery*.....147
- Real-time X-ray radiography for defect detection in submerged arc welding and segmentation using sparse signal representation,
by *Weixin Gao and Yu Hen Hu*299

STRESS AND STRAIN

- Residual stress measurement of 1500 m³ spherical tanks by X-ray diffraction method,
by *Ruibin Gou, Min Yu, Yiliang Zhang and Xuedong Xu*26

THERMOGRAPHY AND THERMAL METHODS

- Detection of the boundary between oil and water in a container by dynamic heat conduction,
by *Minoru Aoyagi, Takefumi Hiraguri and Takahiro Ueno*15
- Thermographic inspection in the service of art science: theory, methods and considerations,
by *D Gavrilov, E Maeva and R G Maev*131
- Hilbert transform-based pulse compression approach to infrared thermal wave imaging for sub-surface defect detection in steel material,
by *V Arora, J A Siddiqui, R Mulaveesala and A Muniyappa*50

ULTRASONIC TESTING

- Use of the ultrasonic slow wave to identify pore closure caused by deposition of a polymeric surface layer,
by *L Lin, M L Peterson and A R Greenberg*183
- Detection of small gas leaks based on neural networks and D-S evidential theory using ultrasonics,
by *Wang Tao, Pei Yu, Xiao Huiheng and Fan Wei*189
- Lamb wave-based air-coupled ultrasonic inspection technique for filament-wound composite pipes,
by *M J Padiyar and K Balasubramaniam*.....195
- Improving an adaptive filtering system for ultrasonic testing,
by *M S Mohammed and Kim Ki-Seong*240

- Phased array inspection at elevated temperatures: effects of ultrasonic beam skew,
by *M Marvasti, J Bond, M Matheson and A N Sinclair*256

- Application of the hybrid laser ultrasonic method in rail inspection,
by *Y Zhao, J H Sun, J Ma, S Liu, R Guo, J F Song and Z Q Jia*360

- Characterisation of oxidative ageing in asphalt concrete using a non-collinear ultrasonic wave mixing approach,
by *M E McGovern, W G Buttlar and H Reis*367

- Effect of surface machine roughness on detectability of sub-millimetre reflectors in polycrystalline materials using ultrasonic immersion testing,
by *A Leybovich and A Smith*381

- Fine ultrasonic elasticity imaging based on the Kalman filter in a simulation model,
by *Shifeng Zhou, Haijiang Zhu and Yong Zhu*385

- Phased array ultrasonic inspection of embedded defects in hydropower turbine runner welds,
by *Jun Zhang, Xiao-hong Li, Ya-kun Shi and Long-shuang Liang*390

- Non-stationary phase shift migration for flaw detection in objects with lateral velocity variations,
by *T Lukomski*477

- Ultrasonic broadband time-reversal with multiple signal classification imaging using full matrix capture,
by *Chengguang Fan, Mengchun Pan and Feilu Luo*487

- Obtaining geometries of real cracks and using an efficient finite element method to simulate their ultrasonic array response,
by *M V Felice, A Velichko, P D Wilcox, T Barden and T Dunhill*492

- A two-dimensional fast Fourier transform using incremented frequency measurement for guided wave analysis,
by *S Fateri, N V Boulgouris and A Wilkinson*499

- Finite element modelling of the interaction of ultrasonic guided waves with coupled piezoelectric transducers,
by *P S Lowe, S Fateri, R Sanderson and N V Boulgouris*505

- Longitudinal wave attenuation measurements by means of a diffraction-insensitive large-aperture PVDF hydrophone,
by *T Seldis*595

- Fluid level sensing using ultrasonic waveguides,
by *Subhash N N and K Balasubramaniam*607

- High-accuracy evaluation of pitting corrosion in field signature method,
by *Fangji Gan, Zhengjun Wan, Junbi Liao and Wenqiang Li*613

- Ultrasonic scanning inspection of resistance spot welding joints,
by *T Wang, C Wang, G Xu, H Mao and L Ma*617