

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 53 2011 – INDEXES

Key to issues

No 1	January	1-56
No 2	February	57-116
No 3	March	117-176
No 4	April	177-232
No 5	May	233-288
No 6	June	289-352

No 7	July	353-408
No 8	August	409-468
No 9	September	469-524
No 10	October	525-588
No 11	November	589-644
No 12	December	645-700

REGULAR FEATURES AND SHORT TITLES

Associate Members	56, 116, 176, 232, 288, 352, 408, 468, 524, 588, 644, 700
BINDT Awards.....	9, 116, 417
Comment.....	2, 58, 118, 178, 234, 290, 354, 410, 470, 526, 590, 646
Conference Reports	
CM 2011 and MFPT 2011.....	450
NDT 2011 – The 50th Annual British Conference on NDT	626
7th Hungarian NDT Conference and Exhibition	452
Institute News	182, 297, 356, 597
Institute Notices	295, 597
International Diary	38, 100, 156, 214, 270, 334, 392, 454, 509, 570, 630, 682
Membership	4, 180, 451, 597, 648
NDT Info.....	45, 105, 164, 221, 277, 341, 397, 459, 512, 576, 634, 687
Newsdesk	4, 60, 122, 180, 236, 292, 358, 412, 472, 528, 592, 648
Obituary	
T Liddell	60
E S McIlroy	297
J E Newton	356
R W E Shannon	533
M Stoneham	182
R B Thompson	356
Product Showcase	52, 113, 172, 228, 285, 348, 405, 466, 521, 585, 640, 695
Profile	
Chuck Hellier	298
Special Features	
The Aerospace Industry	289
Condition Monitoring	409
Conference Papers	57
Electromagnetics	117, 469
Novel Applications	1
Optical Methods	233
Power Generation	645
Radiography	525
The Rail Industry	353
Thermography	589
Ultrasonics	177, 589

Anand R S (see Rathod V R)	542
Armitage D W (see Dekdouk B)	90
Austin J C	
Requirements for commercial X-ray element-specific imaging technology	127
Badodkar D N (see Sarkar P S)	25
Baillie I	
How to take a laboratory piece of equipment and make it survive in the hostile environment of a steel plant	474
Balasubramaniam K (see Reddy M V)	307
Baldev Raj (see Saravanan T)	258
Baodong Liu (see Jiqiang Guo)	534
Baohua Chang (see Jiaxin Shao)	562
Basak D (with Pal S and Patranabis D C)	
Performance comparison of track ropes in contemporary ropeway installations	490
Beretta S (see Carboni M)	361
Bertovic M (with Gaal M, Müller C and Fahlbruch B)	
Investigating human factors in manual ultrasonic testing: testing the human factors model	673
Bing Han (see Dongyan Huang)	478
Blakeley B (with Lugg M)	
Recent research and development activities in electromagnetic sensor technologies	138
Booler R (see Gandossi L)	652
Borisov A (with Gelman L, Gryllias K C, Shaw B, Vaidhianathasamy M and Walters M)	
Novel comparisons of vibration and acoustic technologies for local damage detection in gearboxes	426
Bridge B (see Soua S)	321
Brown M (see Dekdouk B)	90
Bruma A (see Grimberg R)	132
Budd C J (see Soleimani M)	21
Burch S F	
The HOIS recommended practice for in-service computed radiography of pipes	66
Burger W (see Albers A)	431
Burrows S (see Almond D P)	614

AUTHOR INDEX

Addali A (see Husin S).....	677
Ahola J (see Ahonen T)	439
Ahonen T (with Tamminen J, Ahola J and Kestilä J)	
Novel method for detecting cavitation in centrifugal pump with frequency converter	439
Albers A (with Nguyen H T and Burger W)	
Energy-efficient hydrodynamic journal bearings by means of condition monitoring and lubrication flow control	431
Allen B (see Jones R)	420
Almond D P (with Weekes B, Teng Li, Pickering S G, Kostson E, Wilson J, Tian G Y, Dixon S and Burrows S)	
Thermographic techniques for the detection of cracks in metallic components.....	614

Carboni M (with Beretta S and Lo Conte A) Research on corrosion fatigue of railway axles	361
Carvalho A A (with Silva R R, Sagrilo L V S and Rebello J M A) Reliability of the ultrasonic inspection by numerical simulation technique	603
Cebulski L (see Soua S)	321
Changlong Wang (see Xichao Yuan)	152
Changlong Wang (see Xichao Yuan)	482
Chapman R (see Dekdouk B)	90
Charlesworth C Phased array ultrasonic inspection of low-pressure steam turbine rotors – curved axial entry fir tree roots	71
Chen Guan Tui (see Wong B S)	552
Chen Ming Koh (see Wong B S)	552
ChingSeong Tan (see Wong B S)	552
Chipanga T (see Gryzgoridis J)	245
Cioclov D D (with Dobmann G)	668
Clark D (with Sharples S D and Wright D C) Development of online inspection for additive manufacturing products	610
Clark M (see Saeed A)	382
Curnick P An investigation into the drilling of fibre-reinforced polymer composites using the optical microscopy inspection method	248
Daud A R (see Yassen Y)	658
Davis C (see Rowshandel H)	85
Davis C L (see Rowshandel H)	368
Dekdouk B (with Ktistis C, Armitage D W, Peyton A J, Chapman R and Brown M) Non-contact characterisation of conductivity gradient in isotropic polycrystalline graphite using inductance spectroscopy measurements	90
Diston D (see Phillips P)	502
Dixon S (see Almond D P)	614
Dixon S (see Hernandez-Valle F)	96
Dixon S (see Petcher P A)	185
Dobmann G (with Cioclov D D and Kurz J H) NDT and fracture mechanics. How can we improve failure assessment by NDT? Where we are – where do we go?	668
Dong Du (see Jiaxin Shao)	562
Dongyan Huang (with Bing Han, Tianli Hu, Zonggang Wang and Tao Zhang) Pulsed magnetic apparatus for <i>in situ</i> stress measurement	478
Dunhill A K (with Thayer P J and Newton K) The advantages and challenges of linking industrial needs with academic research	12
Dupond O (see Mahaut S)	664
Fahlbruch B (see Bertovic M)	673
Feilu Luo (see Xiangchao Hu)	146
Feilu Luo (see Ying Tang)	497
Fengzhu Ji (see Xichao Yuan)	482
Fernandes B (see Torres V)	82
Findeis D (see Gryzgoridis J)	245
Fouquet T (see Mahaut S)	664
Gaal M (see Bertovic M)	673
Gan T-H (see Hills A F)	434
Gan T-H (see Soua S)	321
Gandossi L (with Booler R, Martin E, Neundorf B and Walker A) Activities and future trends of the ENIQ network	652
Gaydecki P (see Torres V)	82
Ge Liling (with Zhang Yingjie) Weld defect detection in industrial radiography based on image segmentation	263
Gelman L (see Borisov A)	426
Ghali V S (see Mulaveesala R)	34
Ghali V S (with Panda S S B and Mulaveesala R) Barker coded thermal wave imaging for defect detection in carbon fibre-reinforced plastics	621
Grainger B (see Hills A F)	434
Grimberg R (with Savin A, Steigmann R, Serghiac B and Bruma A) Electromagnetic non-destructive evaluation using metamaterials	132
Gryllias K C (see Borisov A)	426
Gryzgoridis J (with Findeis D and Chipanga T) Shearography – in identifying the presence and subsequent measurement of residual stresses	245
Haglund F (with Spicer M and Troughton M) Development and validation of an automated non-destructive evaluation (NDE) approach for testing welded joints in plastic pipes	201
Haijiang Zhu (with Ping Yang and Yuwen Cao) Local optimal threshold technique for the segmentation of ultrasonic time-of-flight diffraction image	196
Han Shi (see Jiaxin Shao)	562
Haneef T K (see Mukhopadhyay C K)	29
He Cunfu (see Qiu Zhaoguo)	302
Hernandez-Valle F (with Dixon S) Pulsed electromagnet EMAT for ultrasonic measurements at elevated temperatures	96
Hills A F (with Lang Z Q, Soua S, Gan T-H, Perera A, van Lieshout P and Grainger B) A novel baseline model-based technique for condition monitoring of wind turbine components	434
Hoppins C P (see Labrosse Q)	16
Husin S (with Addali A and Mba D) Sensitivity of acoustic emission (AE) technology in monitoring oxide formation on an aluminium surface	677
Ismail M P (see Yassen Y)	658
Jayakumar T (see Mukhopadhyay C K)	29
Jayakumar T (see Saravanan T)	258
Jayakumar T (see Sharatchandra Singh W)	377
Jemain A A (see Yassen Y)	658
Jen C-K (see Liu W-L)	316
Jian Xu (see Wong B S)	552
Jiancheng Leng (see Jianwei Li)	142
Jiancheng Leng (see Jianwei Li)	487
Jianwei Li (with Minqiang Xu, Jiancheng Leng, Mingxiu Xu and Shuai Zhao) Metal magnetic memory effect caused by circle tensile-compressive stress	142
Jianwei Li (with Minqiang Xu, Mingxiu Xu and Jiancheng Leng) Investigation of the variation in magnetic field induced by cyclic tensile-compressive stress	487
Jiaxin Shao (with Dong Du, Han Shi and Baohua Chang) Automatic weld recognition and extraction from real-time X-ray images using quadratic curve fitting and multi-order differences analysis of intensity profile	562

Jiqiang Guo (with Li Zeng and Baodong Liu) <u>High-quality image reconstruction from exterior helical cone-beam CT data for NDE of industrial pipelines</u>	534
Jones R (with Mao K, and Allen B) <u>Effects of linear and angular misalignment on a spur gear pair</u>	420
Kestilä J (see Ahonen T)	439
Khan Z (see Saeed A)	382
Kishore Kumar R (see Sudha J).....	445
Kobayashi M (see Liu W-L)	316
Kohli A K (see Sarkar P S).	25
Kostson E (see Almond D P)	614
Ktistis C (see Dekdouk B)	90
Kurz J H (with Dobmann G).....	668
Labrosse Q (with Hoppins C P and Summerscales J) <u>Objective assessment of the surface quality of coated surfaces</u>	16
Lang Z Q (see Hills A F).....	434
Leymarie N (see Mahaut S)	664
Li Yi (see Ren Shangkun)	494
Li Zeng (see Jiqiang Guo).....	534
Li Zeng (see Linghui Liu).....	372
van Lieshout P (see Hills A F)	434
Linghui Liu (with Li Zeng) <u>Defect segmentation in digital radiography images of castings on a railway freight car</u>	372
Liu W-L (with Jen C-K, Wu K-T, Kobayashi M and Mrad N) <u>Flexible ultrasonic transducer arrays for health monitoring of an aircraft component</u>	316
Lo Conte A (see Carboni M)	361
Lugg M (see Blakeley B).....	138
Łukomski T (with Stepinski T) <u>Application of resonant ultrasound spectroscopy in diagnostics of rings</u>	192
Lukose S N (see Reddy M V)	307
Mahaut S (with Leymarie N, Poidevin C, Fouquet T and Dupond O) <u>Study of complex ultrasonic NDT cases using hybrid simulation method and experimental validations</u>	664
Martin E (see Gandossi L)	652
Mao K (see Jones R)	420
Mba D (see Husin S).....	677
MengChun Pan (see Ying Tang)	497
Minqiang Xu (see Jianwei Li).....	142
Minqiang Xu (see Jianwei Li).....	487
Mingxiu Xu (see Jianwei Li)	142
Mingxiu Xu (see Jianwei Li)	487
Mishra M K (see Sarkar P S)	25
Mrad N (see Liu W-L)	316
Mukhopadhyay C K (with Haneef T K, Rao B P C and Jayakumar T) <u>Condition monitoring of exchange towers of heavy water plant during hydrotesting by acoustic emission technique</u>	29
Mukhopadhyay C K (see Sharatchandra Singh W)	377
Mulaveesala R (with Ghali V S) <u>Cross-correlation-based approach for thermal non-destructive characterisation of carbon fibre reinforced plastics</u>	34
Mulaveesala R (see Ghali V S)	621
Müller C (see Bertovic M)	673
Muralidhar C (see Reddy M V)	307
Nel M (see Saeed A)	382
Nemytova O V (see Rinkevich A B)	598
Neundorf B (see Gandossi L)	652
Newton K (see Dunhill A K).....	12
Nguyen H T (see Albers A).....	431
Nicholson G L (see Rowshandel H)	368
Numata S (with Baba A) <u>Residual stress evaluation by laser shearography</u>	253
Osterloh K <u>Aims and objectives of the EFNDT Working Group: 'NDT for Public Safety and Security'</u>	331
Ou Yangchun (see Ren Shangkun).....	494
Pal S (see Basak D).....	490
Panda S S B (see Ghali V S)	621
Papaelias M (see Rowshandel H)	85
Paschuk S (see Ribeiro S)	557
Patranabis D C (see Basak D)	490
Perera A (see Hills A F).....	434
Perov D V (see Rinkevich A B)	598
Petcher P A (with Dixon S) <u>Non-contact position tracking using phase correlation of sample images for NDT applications</u>	185
Peyton A J (see Dekdouk B)	90
Phang A (see Jones R).....	420
Philip John (see Saravanan T).....	258
Phillips P (with Diston D and Starr A) <u>Towards a business enterprise strategy to support the integration of proactive aerospace maintenance technologies</u>	502
Pickering S G (see Almond D P)	614
Ping Yang (see Haijiang Zhu)	196
Poidevin C (see Mahaut S)	664
Qiu Zhaoguo (with Wu Bin and He Cunfu) <u>Research on adhesive layer depth and frequency in weak interface of bonded structures</u>	302
Quek S (see Torres V)	82
Ramesh Kumar M (see Sanjeev Kumar S)	312
Rao B P C (see Mukhopadhyay C K)	29
Rao B P C (see Sharatchandra Singh W)	377
Rathod V R (with Anand R S) <u>A comparative evaluation of different segmentation techniques to detect flaws in weldments radiographically</u>	542
Rebello J M A (see Carvalho A A)	603
Reddy M V (with Lukose S N, Subramanian M P, Siva Rao G V, Muralidhar C and Balasubramaniam K) <u>Industrial computed tomography system for aerospace applications: development and characterisation</u>	307

Ren Shangkun (with Ou Yangchun and Li Yi) <u>Fatigue damage assessment for ferromagnetic items based on the metal magnetic memory technique</u>	494
Ribeiro S (with Paschuk S, Swinka-Filho V and Schelin H) <u>Analysis of dielectric breakdown in power cables using 2D and 3D tomography</u> ...557	
Rinkevich A B (with Stepanova N N, Rodionov D P, Perov D V and Nemtsova O V) <u>Ultrasonic testing of objects made of heat-resistant nickel-based alloys, single and polycrystalline components</u>	598
Roberts C (see Rowshandel H)	85
Roberts C (see Rowshandel H)	368
Rodionov D P (see Rinkevich A B)	598
Rowshandel H (with Nicholson G L, Davis C L and Roberts C) <u>A robotic approach for NDT of RCF cracks in rails using an ACFM sensor</u>	368
Rowshandel H (with Papaelias M, Roberts C and Davis C) <u>Development of autonomous ACFM rail inspection techniques</u>	85
Saeed A (with Khan Z, Clark M, Nel M and Smith R) <u>Non-destructive material characterisation and material loss evaluation in large historic military vehicles</u>	382
Sagribo L V S (see Carvalho A A)	603
Sampathkumar S (see Sudha J)	445
Sanjeev Kumar S (with Ramesh Kumar M, Sudheendra H N and Sathish R) <u>Pulse phase thermographic non-destructive evaluation of composite aircraft structures</u>	312
Saravanan T (with Philip John, Jayakumar T and Baldev Raj) <u>Improved estimation of density of boron carbide control rods using digital X-ray radiography</u>	258
Sarkar P S (with Sinha A, Mishra M K, Badodkar D N, Singh M, Sastry K V S and Kohli A K) <u>X-ray micro-tomography-based non-destructive evaluation of microwelds in an HDR source assembly used for brachytherapy</u>	25
Sastry K V S (see Sarkar P S)	25
Sathish R (see Sanjeev Kumar S)	312
Savin A (see Grimberg R)	132
Schelin H (see Ribeiro S).....	557
Sergiac B (see Grimberg R)	132
Sharatchandra Singh W (with Rao B P C, Mukhopadhyay C K and Jayakumar T) <u>GMR-based magnetic flux leakage technique for condition monitoring of steel track rope</u>	377
Sharples S D (see Clark D)	610
Shaw B (see Borisov A).....	426
Shuai Zhao (see Jianwei Li).....	142
Silva R R (see Carvalho A A)	603
Singh M (see Sarkar P S)	25
Sinha A (see Sarkar P S)	25
Siva Rao G V (see Reddy M V).....	307
Smith R (see Saeed A)	382
Soleimani M (with Stewart V J and Budd C J) <u>Crack detection in dielectric objects using electrical capacitance tomography imaging</u>	21
Songshan Hou (see Xichao Yuan).....	152
Soua S (with Cebulski L, Gan T-H and Bridge B) <u>Online monitoring of a power slip-ring on the shaft of a wind power generator</u>321	
Soua S (see Hills A F)	434
Spicer M (see Hagglund F)	201
Starr A (see Phillips P)	502
Stepanova N N (see Rinkevich A B).....	598
Stepinski T (see Łukomski T)	192
Steigmann R (see Grimberg R)	132
Stewart V J (see Soleimani M)	21
Stone M <u>Statistical analysis methods for corrosion mapping inspection data</u>	76
Subramanian M P (see Reddy M V)	307
Sudha J (with Sampathkumar S and Kishore Kumar R) <u>Condition monitoring of delamination during drilling of GFRP composites using the acoustic emission technique – a neural network model</u>	445
Sudheendra H N (see Sanjeev Kumar S)	312
Summerscales J (see Labrosse Q)	16
Swinka-Filho V (see Ribeiro S)	557
Tamminen J (see Ahonen T)	439
Tao Zhang (see Dongyan Huang)	478
Teng Li (see Almond D P)	614
Thayer P J (see Dunhill A K)	12
Tian G Y (see Almond D P)	614
Tianli Hu (see Dongyan Huang)	478
Torres V (with Quck S, Fernandes B and Gaydecki P) <u>Development of a scanning system to detect corrosion in wire bundles and pipes using magnetoresistive sensors</u>	82
Troughton M (see Hagglund F)	201
Vaidhianathasamy M (see Borisov A).....	426
Walker A (see Gandossi L).....	652
Walters M (see Borisov A).....	426
Weekes B (see Almond D P).....	614
Williams K F <u>Early memories of the Non-Destructive Testing Society of Great Britain and The British Institute of Non-Destructive Testing</u>	476
Wilson J (see Almond D P).....	614
Wong B S (with Xin Wang, Chen Ming Koh, Chen Guan Tui, ChingSeong Tan and Jian Xu) <u>Crack detection using image processing techniques for radiographic inspection of aircraft wing spar</u>	552
Wright D C (see Clark D)	610
Wu Bin (see Qiu Zhaoguo)	302
Wu K-T (see Liu W-L).....	316
Xiangchao Hu (with Yunze He and Feili Luo) <u>Defect classification in two-layer complex structures based on spectrum analysis of pulsed eddy current</u>	146
XiangLin Tan (see Ying Tang)	497
Xianzhang Zuo (see Xichao Yuan)	152
Xianzhang Zuo (see Xichao Yuan)	482
Xichao Yuan (with Changlong Wang, Fengzhu Ji and Xianzhang Zuo) <u>A magnetic flux leakage analysis model based on finite element neural network</u>482	
Xichao Yuan (with Changlong Wang, Xianzhang Zuo and Songshan Hou) <u>A method of 2D defect profile reconstruction from magnetic flux leakage signals based on improved particle filter.</u>	152

Xin Wang (see Wong B S)	552
Yassen Y (with Ismail M P, Jemain A A and Daud A R) <u>Reliability of ultrasonic measurement of thickness loss caused by corrosion</u>	658
Ying-Jie Zhang <u>Extraction of ROI by using improved Mumford-Shah algorithm and its application to defect detection</u>	387
Ying Tang (with MengChun Pan, FeiLu Luo and XiangLin Tan) <u>Experimental and finite element analysis study of 3D magnetic field sensing for pulsed magnetic flux leakage defect characterisation</u>	497
Yongyong He (with Yue Wu) <u>Combining whitening filter and wavelet transform to de-noise cavitation noise for cavitation state monitoring</u>	205
Yue Wu (see Yongyong He)	205
Yunze He (see Xiangchao Hu)	146
Yuwen Cao (see Haijiang Zhu)	196
Zhang Yingjie (see Ge Liling)	263
Zonggang Wang (see Dongyan Huang)	478

SUBJECT INDEX

ACOUSTIC EMISSION METHODS

<u>Sensitivity of acoustic emission (AE) technology in monitoring oxide formation on an aluminium surface,</u> by S Husin, A Addali and D Mba	677
--	-----

COMPUTED TOMOGRAPHY

<u>Crack detection in dielectric objects using electrical capacitance tomography imaging,</u> by M Soleimani, V J Stewart and C J Budd	21
<u>Industrial computed tomography system for aerospace applications: development and characterisation,</u> by M V Reddy, S N Lukose, M P Subramanian, G V Siva Rao, C Muralidhar and K Balasubramaniam	307
<u>High-quality image reconstruction from exterior helical cone-beam CT data for NDE of industrial pipelines,</u> by Jiqliang Guo, Li Zeng and Baodong Liu	534
<u>Analysis of dielectric breakdown in power cables using 2D and 3D tomography,</u> by S Ribeiro, S Paschuk, V Swinka-Filho and H Schelin	557

CONDITION MONITORING

<u>Condition monitoring of exchange towers of heavy water plant during hydrotesting by acoustic emission technique,</u> by C K Mukhopadhyay, T K Haneef, B P C Rao and T Jayakumar	29
<u>Statistical analysis methods for corrosion mapping inspection data,</u> by M Stone	76
<u>Combining whitening filter and wavelet transform to de-noise cavitation noise for cavitation state monitoring,</u> by Yongyong He and Yue Wu	205
<u>Online monitoring of a power slip-ring on the shaft of a wind power generator,</u> by S Soua, L Cebulski, T-H Gan and B Bridge	321
<u>Effects of linear and angular misalignment on a spur gear pair,</u> by R Jones, K Mao, A Phang and B Allen	420
<u>Novel comparisons of vibration and acoustic technologies for local damage detection in gearboxes,</u> by A Borisov, L Gelman, K C Gryllias, B Shaw, M Vaidhianathasamy and M Walters	426
<u>Energy-efficient hydrodynamic journal bearings by means of condition monitoring and lubrication flow control,</u> by A Albers, H T Nguyen and W Burger	431

<u>A novel baseline model-based technique for condition monitoring of wind turbine components,</u> by A F Hills, Z Q Lang, S Soua, T-H Gan, A Perera, P van Lieshout and B Grainger	434
<u>Novel method for detecting cavitation in centrifugal pump with frequency converter,</u> by T Ahonen, J Tamminen, J Ahola and J Kestilä	439
<u>Condition monitoring of delamination during drilling of GFRP composites using the acoustic emission technique – a neural network model,</u> by J Sudha, S Sampathkumar and R Kishore Kumar	445

ELECTROMAGNETIC METHODS

<u>Development of a scanning system to detect corrosion in wire bundles and pipes using magnetoresistive sensors,</u> by V Torres, S Quek, B Fernandes and P Gaydecki	82
<u>Pulsed electromagnet EMAT for ultrasonic measurements at elevated temperatures,</u> by F Hernandez-Valle and S Dixon	96
<u>Electromagnetic non-destructive evaluation using metamaterials,</u> by R Grimberg, A Savin, R Steigmann, B Serghiuc and A Bruma	132
<u>Recent research and development activities in electromagnetic sensor technologies,</u> by B Blakeley and M Lugg	138
<u>Metal magnetic memory effect caused by circle tensile-compressive stress,</u> by Jianwei Li, Minqiang Xu, Jiancheng Leng, Mingxiu Xu and Shuai Zhao	142
<u>Defect classification in two-layer complex structures based on spectrum analysis of pulsed eddy current,</u> by Xiangchao Hu, Yunze He and Feilu Luo	146
<u>A method of 2D defect profile reconstruction from magnetic flux leakage signals based on improved particle filter,</u> by Xichao Yuan, Changlong Wang, Xianzhang Zuo and Songshan Hou	152
<u>GMR-based magnetic flux leakage technique for condition monitoring of steel track rope,</u> by W Sharatchandra Singh, B P C Rao, C K Mukhopadhyay and T Jayakumar	377
<u>Pulsed magnetic apparatus for <i>in situ</i> stress measurement,</u> by Dongyan Huang, Bing Han, Tianli Hu, Zonggang Wang and Tao Zhang	478
<u>A magnetic flux leakage analysis model based on finite element neural network,</u> by Xichao Yuan, Changlong Wang, Fengzhu Ji and Xianzhang Zuo	482
<u>Investigation of the variation in magnetic field induced by cyclic tensile-compressive stress,</u> by Jianwei Li, Minqiang Xu, Mingxiu Xu and Jiancheng Leng	487
<u>Performance comparison of track ropes in contemporary ropeway installations,</u> by D Basak, S Pal and D C Patranabis	490
<u>Fatigue damage assessment for ferromagnetic items based on the metal magnetic memory technique,</u> by Ren Shangkun, Ou Yangchun and Li Yi	494
<u>Experimental and finite element analysis study of 3D magnetic field sensing for pulsed magnetic flux leakage defect characterisation,</u> by Ying Tang, MengChun Pan, FeiLu Luo and XiangLin Tan	497
<u>The advantages and challenges of linking industrial needs with academic research,</u> by A K Dunhill, P J Thayer and K Newton	512
<u>Aims and objectives of the EFNDT Working Group: 'NDT for Public Safety and Security',</u> by K Osterloh	531
<u>Non-destructive material characterisation and material loss evaluation in large historic military vehicles,</u> by A Saeed, Z Khan, M Clark, M Nel and R Smith	582
<u>How to take a laboratory piece of equipment and make it survive in the hostile environment of a steel plant,</u> by I Baillie	574

GENERAL & REVIEWS continued

- Early memories of the Non-Destructive Testing Society of Great Britain and The British Institute of Non-Destructive Testing,
by K F Williams 476
- Towards a business enterprise strategy to support the integration of proactive aerospace maintenance technologies,
by P Phillips, D Diston and A Starr 502
- Development of online inspection for additive manufacturing products,
by D Clark, S D Sharples and D C Wright 610

IMAGE PROCESSING

- Objective assessment of the surface quality of coated surfaces,
by Q Labrosse, C P Hoppins and J Summerscales 16
- Non-contact position tracking using phase correlation of sample images for NDT applications,
by P A Pitcher and S Dixon 185

INSPECTION QUALIFICATION AND RELIABILITY

- Activities and future trends of the ENIQ network,
by L Gandossi, R Booler, E Martin, B Neundorf and A Walker 652
- Reliability of ultrasonic measurement of thickness loss caused by corrosion,
by Y Yassen, M P Ismail, A A Jemain and A R Daud 658
- NDT and fracture mechanics. How can we improve failure assessment by NDT? Where we are – where do we go?,
by G Dobmann, D D Cioclov and J H Kurz 668
- Investigating human factors in manual ultrasonic testing: testing the human factors model,
by M Bertovic, M Gaal, C Müller and B Fahlbruch 673

LASER TECHNIQUES

- Residual stress evaluation by laser shearography,
by S Numata and A Baba 253

OPTICAL METHODS

- Non-contact characterisation of conductivity gradient in isotropic polycrystalline graphite using inductance spectroscopy measurements,
by B Dekdouk, C Ktistis, D W Armitage, A J Peyton, R Chapman and M Brown 90
- Application of resonant ultrasound spectroscopy in diagnostics of rings,
by T Łukomski and T Stepiński 192
- Shearography – in identifying the presence and subsequent measurement of residual stresses,
by J Gryzgoridis, D Findeis and T Chipanga 245
- An investigation into the drilling of fibre-reinforced polymer composites using the optical microscopy inspection method,
by P Curnick 248

RADIOGRAPHY including DIGITAL RADIOGRAPHY

- X-ray micro-tomography-based non-destructive evaluation of microwelds in an HDR source assembly used for brachytherapy,
by P S Sarkar, A Sinha, M K Mishra, D N Badodkar, M Singh, K V S Sastry and A K Kohli 25
- The HOIS recommended practice for in-service computed radiography of pipes,
by S F Burch 66
- Requirements for commercial X-ray element-specific imaging technology,
by J C Austin 127
- Improved estimation of density of boron carbide control rods using digital X-ray radiography,
by T Saravanan, John Philip, T Jayakumar and Baldev Raj 258
- Weld defect detection in industrial radiography based on image segmentation,
by Ge Liling and Zhang Yingjie 263
- A comparative evaluation of different segmentation techniques to detect flaws in weldments radiographically,
by V R Rathod and R S Anand 542

Crack detection using image processing techniques for radiographic inspection of aircraft wing spar,

- by B Stephen Wong, Xin Wang, Chen Ming Koh, Chen Guan Tui, ChingSeong Tan and Jian Xu 552

Automatic weld recognition and extraction from real-time X-ray images using quadratic curve fitting and multi-order differences analysis of intensity profile,

- by Jiaxin Shao, Dong Du, Han Shi and Baohua Chang 562

RAIL INSPECTION

- Development of autonomous ACFM rail inspection techniques,
by H Rowshandel, M Papaelias, C Roberts and C Davis 85

- Research on corrosion fatigue of railway axles,
by M Carboni, S Beretta and A Lo Conte 361

- A robotic approach for NDT of RCF cracks in rails using an ACFM sensor,
by H Rowshandel, G L Nicholson, C L Davis and C Roberts 368

Defect segmentation in digital radiography images of castings on a railway freight car,

- by Linghui Liu and Li Zeng 372

SIGNAL PROCESSING

- Extraction of ROI by using improved Mumford-Shah algorithm and its application to defect detection,
by Ying-Jie Zhang 387

THERMOGRAPHY AND THERMAL METHODS

- Cross-correlation-based approach for thermal non-destructive characterisation of carbon fibre reinforced plastics,
by R Mulaveesala and V S Ghali 34

- Pulse phase thermographic non-destructive evaluation of composite aircraft structures,
by S Sanjeev Kumar, M Ramesh Kumar, H N Sudheendra and R Sathish 312

- Thermographic techniques for the detection of cracks in metallic components,
by D P Almond, B Weekes, Teng Li, S G Pickering, E Kostson, J Wilson, G Y Tian, S Dixon and S Burrows 614

- Barker coded thermal wave imaging for defect detection in carbon fibre-reinforced plastics,
by V S Ghali, S S B Panda and R Mulaveesala 621

ULTRASONIC TESTING

- Phased array ultrasonic inspection of low-pressure steam turbine rotors – curved axial entry fir tree roots,
by C Charlesworth 71

- Local optimal threshold technique for the segmentation of ultrasonic time-of-flight diffraction image,
by Haijiang Zhu, Ping Yang and Yuwen Cao 196

- Development and validation of an automated non-destructive evaluation (NDE) approach for testing welded joints in plastic pipes,
by F Hagglund, M Spicer and M Troughton 201

- Research on adhesive layer depth and frequency in weak interface of bonded structures,
by Qiu Zhaoguo, Wu Bin and He Cunfu 302

- Flexible ultrasonic transducer arrays for health monitoring of an aircraft component,
by W-L Liu, C-K Jen, K-T Wu, M Kobayashi and N Mrad 316

- Ultrasonic testing of objects made of heat-resistant nickel-based alloys, single and polycrystalline components,
by A B Rinkevich, N N Stepanova, D P Rodionov, D V Perov and O V Nemytova 598

- Reliability of the ultrasonic inspection by numerical simulation technique,
by A A Carvalho, R R Silva, L V S Sagrilo and J M A Rebello 603

- Study of complex ultrasonic NDT cases using hybrid simulation method and experimental validations,
by S Mahaut, N Leymarie, C Poidevin, T Fouquet and O Dupond 664