Insight incorporating the European Journal of NDT formerly the British Journal of Non-Destructive Testing

ISSN: 1354-2575

VOLUME 45 2003 - INDEXES

Key to issues

No 1	January	1-104
No 2	February	105-160
No 3	March	161-240
No 4	April	241-312
No 5	May	313-376
No 6	June	377-456
No 7	July	457-520
No 8	August	521-584
No 9	September	585-656
No 10	October	657-712
No 11	November	713-784
No 12	December	785-864

REGULAR FEATURES AND SHORT TITLES

Aerospace Group 634
Back-to-Basics 531
Comment 2, 106, 164, 241, 314, 380, 458, 512, 588, 658, 716, 788
Company/Organisation Profiles 10, 218
Conference/Exhibition Reports 37, 139, 286, 292, 431, 636, 758
EFNDT 141, 143, 593, 843
Engineering Council/ETB 498, 722
Institute Medal Awards 97, 142, 211, 566, 766
Institute News 143, 293, 425, 436, 498, 567, 765
Letters 219, 294
Membership 143, 425, 568, 765
NDT INFO 151, 208, 301, 365, 443, 507, 575, 644, 700, 774, 853
Newsdesk 5, 108, 166, 244, 316, 382, 460, 524, 590, 660, 718, 793
Obituaries
  Amos Sherwin 424
  Bjarne Larsen 498
PCN/Certification 13, 568, 632, 764, 842
Personality Profile
  Jim Pellicer 206
  Richard Leach 634
Product Showcase 101, 158, 234, 306, 372, 450, 515, 581, 650, 686, 708. 780, 860
Special Features
  NDT in India 10
  Conference Papers 116
  NDT in the Aerospace Industry 174
  Visual, optical and thermal NDT methods 252
  Electromagnetic NDT 323
  NDT in the Rail Industry 387
  Condition Monitoring 531
  NDT in Power Generation 594
  Radiography and CT 668
  Ultrasonics 724
  NDT in Civil Engineering 796
Standards News and Technical Literature 99, 140, 150, 300, 362, 442, 506, 529, 574, 772, 850, 852

AUTHOR INDEX

Alleyne D (see Cawley P) 413

Alonso J L G and Alonso J C M (see Ares E G) 407

Antonatos A (see Vamvakoussis A) 258

Aparicio R (see Hogert E N) 263

Ares E Garcia (with Alonso J L G, Alonso J C M)
Ultrasonic inspection system for train wheels incorporating brake discs 407

Avdelidis N P (with Moropoulou A, Delgou E T)
Applications of thermography in the assessment of masonry, airport pavements and composite materials 836

Asano Minoru (see Yoshihiro Michiguchi) 831

Astley K (see Gelman L) 539

Atherton D L (see Hsu A) 323

Baborovsky V M (see Wooldridge A B) 594

Baheti G L (see Saxena N) 682

Balasubramanian T (see Sony Baby) 87

Balasubramanian T (see Sony Baby) 426

Balasubramanian T (see Sony Baby) 600

Baldev Raj (with Palanichamy P, Jayakumar T)
Science and technology of non-destructive testing, evaluation and characterisation 15

Baldev Raj (see Singh M) 73

Baldev Raj (see Kumar A) 484

Baldev Raj (see Venkataraman B) 531

Banahan B D (see Wooldridge A B) 594

Bending J M (see Smith R A) 174

Berti M A (see Mery D) 676

Bhattacharya D K
NDT for residual life assessment in Indian industry 31

Bhuyan M (see Borah S) 55

Bird C R (see Shipp R) 122

Boczar T (with Zmarzly D)
Analysis of the acoustic emission pulses generated by partial electrical discharges 488

Borah S (with Bhuyan M)
Non-destructive testing of tea fermentation using image processing 55

Brandt C (see Engl G) 202

Brotherhood C J (with Drinkwater B W, Freemantle R J)
An ultrasonic wheel-array sensor and its application to aerospace structures 729

Bungey J H
Some recent developments in civil engineering NDT in the UK 796

Bungey J H (see Shaw M R) 813

Busse G (see Zweshper Th) 178

Calôba L P (see Mery D) 475

Capineri L (see Windsor C) 817

Cawley P (with Lowe M, Wilcox P, Alleyne D, Pavlakovic B, Evans M, Vine K)
Guided wave testing of rail 413

Cerniglia D (see Kenderian S) 621

Chen Jian-zhong (see Xiang-ming Zheng) 558

Chen C H (with Xianju Wang)
Speckle removal for ultrasonic NDE images with non-linear filtering for independent component analysis 740

Choi Y H (see Song S-J) 337

Clapham L C (see Hsu A) 323

Clark R (with Singh S)
The inspection of thermite welds in railroad rail – a perennial problem 387

Cochran S (see Kirk K) 130

Crowther P (see Kenny S D) 125

Da Silva R R (see (Mery D) 475

Da Silva I C (see De Carvalho A A) 754

Day P
An automated ultrasonic inspection method for thickness checking of dryer cylinders for paper making machines 628

De Backer H (with De Corte W, Van Bogaert P)
A case study on strain gauge measurements for large post-tensioned concrete beams of a railway support system 822

De Baets P (see De Waele W) 266

De Baets P (see De Waele W) 542

De Carvalho A A (with Veiga J L B C, Da Silva I C, Periera C M N A, Rebello J M A)
Preliminary study of classification of defects by ultrasonic pulse-echo signals using an artificial neural network 754

Declercq N F (see Degrieck J) 196

De Corte W (with Van Bogaert Ph)
Strain gauge measurement as a tool for assessment of post-tensioning in building structures below a historic brickwork vaulted arch 690

De Corte W (see De Backer H) 822

Degrieck J (with Declercq N F, Leroy O)
Ultrasonic polar scans as a possible means of non-destructive testing and characterisation of composite plates 196

Degrieck J (see De Waele W) 266

Degrieck J (see De Waele W) 542

Delegou E T (see Avdelidis N P) 836

De Waele W (with Degrieck J, Moerman W, Taerwe L, De Baets P)
Feasibility of integrated optical fibre sensors for condition monitoring of composite structures.
Part 1. Comparison of Bragg-sensors and strain gauges 266
Part 2. Combination of Bragg-sensors and acoustic emission detection 542

Dewey S (see Snowdon P C) 743

Dillenz A (see Zweschper Th) 178

Di Scalea F L (with McNamara J)
Ultrasonic NDE of railroad tracks: air-coupled cross-sectional inspection and long-range inspection 394

Dixon S (see Stratoudaki T) 186

Dixon S (see Palmer S B) 211

Djordjevic B B (see Kenderian S) 621

Drinkwater B W (see Brotherhood C J) 729

Edwards C (see Stratoudaki T) 186

Engl G (with Meier R, Brandt C)
Testing large aerospace CFRP components by ultrasonic multichannel conventional and phased array pulse-echo techniques 202

Enkvist J
A study of operator performance in a visual NDT inspection task by remote video camera 252

Evans M (see Cawley P) 413

Falorni P (see Windsor C) 817

Farahbakhsh B (see Liu Z) 608

Fleszynski J (with Ranachowski P, Ranachowski Z, Rejmund F)
Non-destructive ultrasonic measurements of ceramic post insulators used in electricity distribution systems 493

Forsyth D S (see Liu Z) 608

Freemantle R J (see Brotherhood C J) 729

Gaggioli N G (see Ruiz Gale M F) 263

Gelman L (with Petrunin I, Sanderson M, Thompson C)
Vibro-acoustic deposit detection in pipelines 466

Gelman L (with Astley K, Petrunin I)
Condition monitoring of fatigue cracks in machinery blades 539

Georgiou G A (with Schneider C R A)
Radiography of thin-section welds
Part 1. Practical approach 116
Part 2. Modelling 119

Ginzel E (see Jacques F) 724

Godbole U
Development of multi-channel eddy current testing system in India 43

Godwal B K (see Sinha A) 59

Gomez-Pedrero J A (see Quirogia J A) 280

Gonzalez P O (see Martinez V M) 402

Gregory R
Composite repair inspection by laser shearography 183

Garcia G (see Kenderian S) 621

Gupta N (see Yu F) 536

Gür C H (with Keley Y)
Ultrasonic characterisation of hot-rolled and heat-treated plain carbon steels 615

Gutermann M (with Slowik V, Steffens K)
Experimental safety evaluation of concrete and masonry bridges 805

Hall D R
Electromagnetic inspection of wire ropes and stand-supported structures 471

Halmshaw R
15th Progress report and working programme on European Standards on NDT. December 2002 140

Halmshaw R
16th Progress report and working programme on European Standards on NDT. September 2003 850

Hammond I (see Liu Z) 608

Harara W
Corrosion evaluation and wall thickness measurement on large-diameter pipes by tangential radiography using a Co-60 gamma-ray source 668

Hogert E N (with Landau M R, Aparicio R, Ruiz Gale M G, Gaggioli N G)
Light scattering analysis, an NDT optical method for studying the electroerosion phenomenon 263

Holroyd T J (with Meisuria H M, Lin D, Randall N)
Development of a practical acoustic emission-based structural monitoring system 127

Hsiao C-C (see Wu Y-H) 332

Hsu A (with Clapham L Z C, Atherton A)
Magnetic Barkhausen noise measurements on magnetised pipeline steel 323

Jacques F (with Moreau F, Ginzel E)
Ultrasonic back scatter sizing using phased array - developments in tip diffraction flaw sizing 724

Jagd M (with Nielsen K W, Rheinlander J)
Non-destructive evaluation to control new casting processes 134

James M N (see Leavey C M) 344

Jarman T R C (see Smith R A) 174

Jayakumar T (see Baldev Raj) 15

Jayakumar T (see Singh M) 73

Jayakumar T (see Kumar A) 484

Johnstone S (see Snowdon P C) 743

Jones L D (see Smith R A) 174

Jones J (with Tyrer J)
An introduction to laser speckle strain imaging as a quantitative tool for structural NDT and lifetime prediction 272

Joshi V M (see Singh M) 73

Kang Y (see Liu Z0 328

Kashyap Y (see Sinha A) 59

Kasiviswanathan K V (see Singh M) 73

Keles Y (see Gür C H) 615

Kenderian S (with Cerniglia D, Djordjevic B B, Garcia G, Morgan R, Sun J, Snell M)
Proof of concept of wayside railroad wheel inspection using a laser-air hybrid ultrasonic technique 621

Kennedy M (with McCarthy J)
Using high-resolution ultrasonic examination to underpin fitness-for-service analysis in the service life extension of the Unity pipeline 554

Kenny S D (with Stamps K, Crowther P)
Development of NDT techniques and inspection for detection and sizing of thermal fatigue cracking in steam-pipework bores of flexibly operated coal-fired power stations 125

Khatri P K (see Saxena N) 682

Kim Y H, Kim E-L (see Song S-J) 337

King G (see Shan Q) 190

Kirk K (with Lee C K, Cochran S, McNab A, Shepherd G)
Condition monitoring with ultrasonic arrays at elevated temperatures 130

Kirkham A (see Morgan L) 746

Kohl Ch (with Krause M, Maierhofer Ch, Mayer K, Wöstmann J, Wiggenhauser H)
3D-visualisation of NDT data using a data fusion technique 800

Krause M (see Kohl Ch) 800

Kumar A
Development characterisation and applications of ultrasonic transducers for NDT 71

Kumar A (with Jayakumar T, Baldev Raj, Ray K K)
Characterisation of the metallurgical condition of titanium alloys by ultrasonic measurements 484

Landau M R (see Hogert E N) 263

Leavey C M (with James M N, Summerscales J, Sutton R)
An introduction to wavelet transforms: a tutorial approach 344

Lee C K (see Kirk K) 130

Lei Yong-ping (see Xiang-ming Zheng) 558

Lepine B A (see Liu Z) 608

Leroy O (see Degrieck J) 196

Lin D (see Holroyd T J) 127

Lines D I A (see Smith R A) 174

Liu Z (with Kang Y, Wu X, Yang S)
Study on local magnetisation of magnetic flux leakage testing for storage tank floors 328

Liu Z (with Forsyth D S, Lepine B A, Hammad I, Farahbakhsh B)
Investigations on classifying pulsed eddy current signals with a neural network 608

Lowe M (see Cawley P) 413

Lucia E A (see Martinez E M) 402

Luo Wei (with Rose J L)
Guided wave thickness measurement with EMATS 735

Marras L (with Materazzi M, Pezzati L, Poggi P)
A new high-resolution IR-colour scanner for NDE of works of art 276

Martinez V M, Martinez B T (with Gonzalez P O, Moreno L M, Lucia E A)
Results and benefits of an oil analysis programme for railway locomotive diesel engines 402

Martinez-Anton J C (see Quiroga J A) 280

Materazzi M (see Narras L) 276

Maierhofer Ch (see Kohl Ch) 800

Mayer K (see Kohl Ch) 800

McCarthy J (see Kennedy M 554

McDonald E J (see Wooldridge A B) 594

McGrath B A (see Wooldridge A B) 594

McNab A (see Kirk K) 130

McNamara J (see di Scala F L) 394

Meena V L (see Saxena N) 682

Meghwal L R (see Saxena N) 682

Meier R (see Engl G) 202

Meisuria H M (see Holroyd T J) 127

Mery D (with Da Silva R R, Caloba L P, Rebello J M A)
Pattern recognition in the automatic inspection of aluminium castings 475

Mery D (with Berti M A)
Automatic detection of welding defects using texture features 676

Michiguchi Y (with Nukaga J, Asano M)
Radar systems for examining concrete structures by transmitting power control ...831

Millard S G (see Shaw M R) 813

Moerman W (see De Waele W) 266

Moerman W (see De Waele W) 542

Molyneaux T K C (see Shaw M R) 813

Moreau F (see Jacques F) 724

Moreno L Montero (see Martinez V M) 402

Morgan R (see Kenderian S) 621

Morgan L (with Nolan P, Kirkham A, Wilkinson R)
The use of automated ultrasonic testing (AUT) in pipeline construction 746

Moropoulou A (see Avdelidis N P) 836

Muller W
Timber girder inspection using ground penetrating radar 809

Munshi P
X-ray and ultrasonic tomography 47

Nielson K W (see Jagd M) 134

Nolan P (see Morgan L) 746

Nukaga J (see Michiguchi Y) 831

Palanichamy P (see Baldev Raj) 15

Palaniappan M (see Sony Baby) 426

Palaniappan M (see Sony Baby) 600

Palmer S B (see Stratoudaki T) 186

Palmer S B (with Dixon S)
Roy Sharpe Prize Lecture 2002. Industrially viable non-contact ultrasound 211

Pardikar R J (see Sony Baby) 87

Pardikar R J (see Sony Baby) 426

Pardikar R J (see Sony Baby) 600

Parikh R R
Status of manufacture of ultrasonic systems in India 41

Patankar V H (see Singh M) 73

Pavlakovic B (see Cawley P) 413

Periera C M N A (see De Carvalho A A) 754

Petrunin I (see Gelman L) 466

Petrunin I (see Gelman L) 539

Pezzati I (see Marras L) 276

Poggi P (see Marras L) 276

Prassianakis J (see Vamvakoussis A) 258

Prassianakis I N (with Sideridis E, Vamvakousis A)
The characteristics of old concrete using destructive and the ultrasonic non-destructive testing methods 827

Quiroga J A (with Martinez-Anton J C, Gomez-Pedero J A)
Structured light-based NDT techniques of interest to the aerospace industry 280

Rajagopalan C (see Singh M) 73

Ranachowski P, Ranachowski Z (see Flesznski J) 493

Randall N (see Holroyd T J) 127

Rao P C (see Singh M) 73

Ray K K (see Kumar A) 484

Rebello J M A (see Mery D) 475

Rebello J M A (see De Carvalho A A) 754

Rejmund F (see Flesznski J) 493

Rheinlander J (see Jagd M) 134

Riegert G (see Zweschper Th) 178

Roe S
Condition monitoring certification of personnel in the UK 764

Rose J L (see Liu W) 735

Ruiz-Gale M F (with Gagglioli N G)
Light scattering analysis, an NDT optical method for studying the electroerosion phenomenon 263

Sahoo K C (see Singh H N) 686

Sanderson M (see Gelman L) 466

Sarkar P S (see Sinha A) 59

Saxena N (with Baheti G L, Khatri P K, Songara K C, Meghwal L R, Meena V L)
Computer tomography reconstructions using multiple discrete detectors 682

Scherling D (see Zweschper Th) 178

Schneider C R A (see Georgiou G) 116, 119

Schneider C R A (see Shipp R) 122

Shan Q (with King G)
Fuzzy techniques for impact locating and magnitude estimating 190

Shaw M R (with Molyneaux T C K, Millard S G, Taylor M J, Bungey J H)
Assessing bar size of steel reinforcement in concrete using ground penetrating radar and neural networks 813

Shepherd G (see Kirk K) 130

Shi Yao-wu (see Xiang-ming Zheng) 558

Shipp R (with Schneider C R A, Bird C R, Wood D A)
Independent qualification of phased array inspection of fillet welds 122

Siakavellas M (see Vamvakoussis A) 258

Sideridis E (see Prassianakis I N) 827

Sinclair C (with Thompson J)
Qualification of NDT of shell-type boilers 605

Singh M
Developments in instrumentation and automation for NDE applications: in-house experience in the Department of Atomic Energy 73

Singh S (see Clark R) 387

Singh H N (with Sahoo K C)
Condition monitoring of carbon steel piping using Barkhausen noise measurement 686

Sinha A (with Sarkar P S, Kashyap Y, Godwal B K)
Developments in radiation imaging techniques 59

Slowik V (see Gutermann M) 805

Smith R A (with Bending J M, Jones L D, Jarman T R C, Lines D I A)
Rapid ultrasonic inspection of ageing aircraft 174

Snell M (see Kenderian S) 621

Snowdon P C (with Johnstone S, Dewey S)
Improving the probability of detection for a 2D ultrasonic array using digital signal processing techniques 743

Song S-J (with Kim Y H, Kim E-L, Choi Y H)
Model-based interpretation of experimental eddy current signals obtained from steam generator tubes by bobbin probe 337

Songara K C (see Saxena N) 682

Sony Baby (with Balasubramanian T, Pardikar R J)
Ultrasonic study for flaw detectability in ferritic butt welds at high temperatures 87

Sony Baby (with Balsubramanian T, Pardikar R J, Palaniappan M, Subbaratnam R)
Time-of-flight diffraction (TOFD) technique for accurate sizing of surface-breaking cracks 426

Sony Baby (with Balsubramanian T, Pardikar R J, Palaniappan M, Subbaratnam R)
Time-of-flight diffraction (TOFD) technique for accurate sizing of cracks embedded in sub-cladding 600

Srivastava G P (see Singh M) 73

Steffens K (see Gutermann M) 805

Stamps K (see Kenny S D) 125

Stratoudaki T (with Edwards C, Dixon S, Palmer S B)
The effect of laser wavelength on the efficiency of laser-generated ultrasound for the inspection of CFRCs 186

Subbaratnam R (see Sony Baby) 426

Subbaratnam R (see Sony Baby) 600

Summerscales J (see Leavey C M) 344

Sun J (see Kenderian S) 621

Sutton R (see Leavey C M) 344

Taerwe L (see De Waele W) 266

Taerwe L (see De Waele W) 542

Taylor M J (see Shaw M R) 813

Tchaban S V
Status and prospects of NDT for rail quality at Kuznetsk Steel Works Russia 421

Thompson C (see Gelman L) 466

Thompson J (see Sinclair C) 605

Tian-peng Q (see Yan L) 672

Tsananas G (see Vamvakoussis A) 258

Tyrer J (see Jones J) 272

Vaidyanathan S (see Singh M) 73

Vamvakoussis A (with Tsananas G, Antonatos A, Siakavellas M, Prassianakis J)
Micro-Raman scattering as a non-destructive tool in the investigation of solids and stress 258

Vamvakoussis A (see Prassianakis I N) 827

Van Bogaert Ph (see De Corte W) 690

Van Bogaert P (see De Backer H) 822

Veiga J L B C (see De Carvalho A A) 754

Venkataraman B (with Baldev Raj)
Performance parameters for thermal imaging systems 531

Vine K (see Cawley P) 413

Wiggenhauser H (see Kohl Ch) 800

Wilcox P (see Cawley P) 413

Wilkinson R (see Morgan L) 746

Windsor C (with Capineri L, Falorni P)
The classification of buried pipes from radar scans 817

Wood D A (see Shipp R) 122

Wooldridge A B (with Baborovsky V M, McDonald E J, Banahan B D, McGrath B A)
Ultrasonic detection and sizing of complex defects and implications for structural assessment procedures 594

Wöstmann J (see Kohl Ch) 800

Wu X (see Liu Z) 328

Wu Y-H (with Hsaio C-C)
Reliability assessment of automated eddy current system for turbine blades 332

Wang X (see Chen C H) 740

Yan L (with Tian-peng Q)
Sensitivity evaluation in double-wall or multi-layer radiographic inspection 672

Yang S (see Liu Z) 328

Yang Y X
Vibration-based diagnosis of engine valve faults 547

Yu F (with Gupta N)
A novel method for computer-controlled condition monitoring of hydraulic systems 536

Zheng Xiang-ming (with Shi Y, Lei Y, Chen H)
Non-destructive characterisation of adhesive bond strength by Lamb waves 558

Zmarzly D (see Boczar T) 488

Zweschper Th (with Dillenz A, Riegert G, Scherling D, Busse G)
Ultrasound-excited thermography using frequency modulated elastic waves 178

SUBJECT INDEX

ACOUSTIC EMISSION METHODS
Development of a practical acoustic emission-based structural monitoring system
T J Holroyd, H M Meisuria, D Lin, N Randall 127
Analysis of the acoustic emission pulses generated by partial electrical discharges
T Boczar, D Zmarzly 488

ACOUSTIC EMISSION METHODS
Condition monitoring: development of AE Level I
T Holroyd 842

ACOUSTIC METHODS
Vibro-acoustic deposit detection in pipelines
L Gelman, I Petrunin, M Sanderson, C Thompson 466
Vibration-based diagnosis of engine valve faults
W X Yang 547

ADHESIVE BONDING
Non-destructive characterisation of adhesive bond strength by Lamb waves
Xiang-ming Zheng, You-wu Shi, Yong-ping Lei, Jian-zhong Chen 558

AEROSPACE INSPECTION
Rapid ultrasonic inspection of ageing aircraft
R A Smith, J M Bending, L D Jones, T R C Jarman, D I A Lines 174
Structured light-based NDT techniques of interest in the aerospace industry
J A Quiroga, J C Martinez-Anton, J A Gomez-Pedrero 280
An ultrasonic wheel-array sensor and its application to aerospace structures
C J Brotherhood, B W Drinkwater, R J Freemantle 729

BARKHAUSEN NOISE METHODS
Magnetic Barkhausen noise measurements on magnetised pipeline steel
A Hsu, L C Clapham, D L Atherton 323
Condition monitoring of carbon steel piping using Barkhausen noise measurement
H N Singh, K C Sahoo 686

CASTINGS INSPECTION
Non-destructive evaluation to control new casting processes
M Jagd, K W Nielsen, J Rheinlander 134
Pattern recognition in the automatic inspection of aluminium castings
D Mery, R R da Silva, L P Caloba, J M A Rebello 475

COMPOSITES
Composite repair inspection by laser shearography
R Gregory 183
The effect of laser wavelength on the efficiency of laser-generated ultrasound for the inspection of CFRCs
T Stratoudaki, C Edwards, S Dixon, S B Palmer 186
Fuzzy techniques for impact locating and magnitude estimating
Q Shan, G King 190
Ultrasonic polar scans as a possible means of NDT and characterisation of composite plates
J Degrieck, N F Declercq, O Leroy 1 196
Testing large aerospace CFRP components by ultrasonic multichannel and phased array pulse-echo techniques
G Engl, R Meier, C Brandt 202
Feasibility of integrated optical fibre sensors for condition monitoring of composite structures:
Part 1. Comparison of Bragg-sensors and strain gauges 266
Part 2. Combination of Bragg-sensors and AE detection 542
W De Waele, J Degrieck, P De Baets, W Moerman, L Taerwe
Non-destructive ultrasonic measurements of ceramic post insulators used in electricity distribution systems
J Fleszynski, P Ranachowski, Z Ranachowski, F Rejmund 493

CONCRETE, MASONRY TESTING
Experimental safety evaluation of concrete and masonry bridges
M Gutermann, V Slowik, K Steffens 805
Assessing bar size of steel reinforcement in concrete using ground penetrating radar and neural networks
M R Shaw, T K C Molyneaux, S G Millard, M J Taylor, J H Bungey 813
A case study on strain gauge measurements on large post-tensioned concrete beams of a railway support structure
H De Backer, W De Corte, P Van Bogaert 822
The characterisation of old concrete using destructive and the ultrasonic NDT methods
I N Prassianakis, E Sideridis, A Vamvakousis 827
Radar systems for examining concrete structures by transmitting power control
Yoshihiro Michiguchi, Jun Nukaga, Minoru Asano 831

CONDITION MONITORING
Condition monitoring with ultrasonic arrays at elevated temperatures
K Kirk, C K Lee, S Cochran, A McNab, G Shepherd 130
Feasibility of integrated optical fibre sensors for condition monitoring of composite structures
Part 1. 266
Part 2. 542
W De Waele, J Degrieck, P De Baets, W Moerman, L Taerwe
An introduction to wavelet transforms: a tutorial approach
C M Leavey, M N James, J Summerscales, R Sutton 344
Results and benefits of an oil analysis programme for railway locomotive diesel engines
V M Martinez, B T Martinez, P O Gonzalez, L M Moreno, E A Lucia 402

CONDITION MONITORING
A novel method for computer-controlled condition monitoring of hydraulic systems
F Wu, N Gupta 536
Condition monitoring of fatigue cracks in machinery blades
L Gelman, K Astley, I Petrunin 539
Vibration-based diagnosis of engine valve faults
W X Yang 547
Condition monitoring of carbon steel piping using Barkhausen noise measurement
H N Singh, K C Sahoo 686
Strain gauge measurement as a tool for assessment of post-tensioning in building structures below a historic brickwork vaulted arch
W De Corte, Ph Van Bogaert 690
Condition monitoring certification of personnel in the UK
S Roe 764
Condition monitoring: development of AE Level I
T Holroyd 842

CORROSION TESTING
Light scattering analysis, an NDT optical method for studying the electroerosion phenomenon
E N Hogert, M R Landau, R Aparicio, M F Ruiz Gale, N G Gaggioli 263
Corrosion evaluation and wall thickness measurement on large-diameter pipes by tangential radiography using a Co-60 gamma-ray source
W Harara 668

EDDY CURRENT AND ELECTROMAGNETIC METHODS
Development of multichannel eddy current testing system in India
U Godbole 43
Reliability assessment of automated eddy current system for turbine blades
Y-H Wu, C-C Hsiao 332
Model-based interpretation of experimental eddy current signals obtained from steam generator tubes by bobbin probe
S-J Song, Y H Kim, E-L Kim, Y H Choi 337
Electromagnetic inspection of wire ropes and stand-supported structures
D R Hall 471
Investigations on classifying pulsed eddy current signals with a neural network
Z Liu, D S Forsyth, B A Lepine, I Hammad, B Farahbakhsh 608

GUIDED WAVES
Guided wave testing of rails
P Cawley, M Lowe, P Wilcox, D Alleyne, B Pavlakovic, M Evans, K Vine 413
Guided wave thickness measurement with EMATS
Wei Luo, J L Rose 735

LIFE ASSESSMENT
NDT for residual life assessment in Indian industry
D K Bhattacharya 31
An introduction to laser speckle strain imaging as a quantitative tool for structural NDT and lifetime prediction
J Jones, J Tyrer 272
Using high-resolution ultrasonic examination to underpin fitness-for-service analysis in the service life extension of the Unity pipeline
M Kennedy, J McCarthy 554

MAGNETIC METHODS
Magnetic Barkhausen noise measurements on magnetised pipeline steel
A Hsu, L C Clapham, D L Atherton 323
Study on local magnetisation of magnetic flux leakage testing for storage tank floors
Z Liu, Y Kang, X Wu, S Yang 328

MATERIAL CHARACTERISATION
Characterisation of the metallurgical condition of titanium alloys by ultrasonic measurements
A Kumar, T Jayakumar, Baldev Raj, K K Ray 484
Ultrasonic characterisation of hot-rolled and heat-treated plain carbon steels
C H Gür, Y Keley 615

OPERATOR PERFORMANCE: HUMAN FACTORS
A study of operator performance in a visual NDT inspection task by remote video camera
J Enkvist 252

OPTICAL METHODS
Non-destructive testing of tea fermentation using image processing
S Borah, M Bhuyan 55
Light scattering analysis, an NDT optical method for studying the electroerosion phenomenon
E N Hogert, M R Landau, R Aparicio, M F Ruiz Gale, N G Gaggioli 263
Feasibility of integrated optical fibre sensors for condition monitoring of composite structures
Part 1. 266
Part 2. 542
W De Waele, J Degrieck, W Moerman, L Taerwe, P De Baets

OPTICAL METHODS
A new high-resolution IR-colour scanner for the non-destructive evaluation of works of art
L Marras, M Matterazzi, L Pezzati, P Poggi 276
Structured light-based NDT techniques of interest to the aerospace industry
Quiroga J A, J C Martinez-Anton, J A Gomez-Pedero 280

PIPEWORK INSPECTION
Development of NDT techniques and inspection for detection and sizing of thermal fatigue cracking in steam-pipework bores of flexibly operated coal-fired power stations
S D Kenny, K Stamps, P Crowther 125
Magnetic Barkhausen noise measurements on magnetised pipeline steel
A Hsu, L C Clapham, D L Atherton 323
Vibro-acoustic deposit detection in pipelines
L Gelman, I Petrunin, M Sanderson, C Thompson 466
The use of automated ultrasonic testing (AUT) in pipeline construction
L Morgan, P Nolan, A Kirkham, R Wilkinson 746
Timber girder inspection using ground penetrating radar
W Muller 809
Assessing bar size of steel reinforcement in concrete using ground penetrating radar and neural networks
M R Shaw, T C K Molyneaux, S G Millard, M J Taylor, J H Bungey 813
The classification of buried pipes from radar scans
C Windsor, L Capineri, P Falorni 817
Radar systems for examining concrete structures by transmitting power control
Yoshihiro Michiguchi, Jun Nukaga, Minoru Asano 831

RADIOGRAPHIC METHODS
Developments in radiation imaging techniques
A Sinha, P S Sankar, Y Kashyap, B K Godwal 59
Radiography of thin-section welds
Part 1. 116
Part 2. 119
G A Georgiou, C R A Schneider
Corrosion evaluation and wall thickness measurement on large-diameter pipes by tangential radiography using a Co-60 gamma-ray source
W Harara 668
Sensitivity evaluation in double-wall or multilayer radiographic inspection of welds in pressure vessels
L Yan, Q Tian-peng 672
Automatic detection of welding defects using texture features
D Mery, M A Berti 676

RADIOSCOPY
Pattern recognition in the automatic inspection of aluminium castings
D Mery, R R Da Silva, L P Caloba, J M A Rebello 475

ROPE INSPECTION
Electromagnetic inspection of wire ropes and stand-supported structures
D R Hall 471

REFLECTOGRAPHY
A new high-resolution IR-colour scanner for NDE of works of art
L Marras, M Materazzi, L Pezzati, P Poggi 276

REVIEW ARTICLES
Science and technology of non-destructive testing, evaluation and characterisation
Baldev Raj, P Palanichamy, T Jayakumar 15
Developments in radiation imaging techniques
A Sinha, P S Sarkar, Y Kashyap, B K Godwal 59
Developments in instrumentation and automation for NDE applications: in-house experience in the Department of Atomic Energy
M Singh and others 73
Status and prospects of NDT for rail quality at Kuznetsk Steel Works, Russia
S V Tchaban 421
Some recent developments in civil engineering NDT in the UK
J H Bungey 796
Applications of thermography in the assessment of masonry, airport pavements and composite materials
P Avdelidis, a Moropoulou, E T Delegou 836

SHEAROGRAPHY
Composite repair inspection by laser shearography
R Gregory 183

SIGNAL, IMAGE ANALYSIS
An introduction to wavelet transforms: a tutorial approach
C M Leavey, M N James, J Summerscales, R Sutton 344
Pattern recognition in the automatic inspection of aluminium castings
D Mery, R R da Silva, L P Caloba, J M A Rebello 475
Preliminary study of classification of defects by ultrasonic pulse-echo signals using an artificial neural network
A A De Carvalho, J L B C Veiga, I C da Silva, C M N A Periera, J M A Rebello 754

SIGNAL, IMAGE ANALYSIS
3D visualisation of NDT data using a data fusion technique
Ch Kohl, M Krause, Ch Maierhofer, K Mayer, J Wöstmann, H Wiggenhauser 800

SPECKLE
An introduction to laser speckle strain imaging as a quantitative tool for structural NDT and lifetime prediction
J Jones and J Tyrer 272

STRAIN GAUGES
Strain gauge measurement as a tool for assessment of post-tensioning in building structures below a historic brickwork vaulted arch
W De Corte, Ph Van Bogaert 690
A case study on strain gauge measurements on large post-tensioned concrete beams of a railway support structure
H De Backer, W De Corte, P Van Bogaert 822

STRESS ANALYSIS
Micro-Raman scattering as a non-destructive tool in the investigation of solids and stress
A Vamvakoussis, G Tsananas, A Antonatos, M Siakavellas, J Prassianakis 258

THERMOGRAPHY
Ultrasound excited thermography using frequency modulated elastic waves
Th Zweschper, A Dillenz, G Riegert, D Scherling, G Busse 178
Performance parameters for thermal imaging systems
B Ventakaraman, Baldev Raj 531
Application of thermography in the assessment of masonry, airport pavements and composite materials
N P Avdelidis, a Moropoulou, E T Delegou 836

TIME-OF-FLIGHT DIFFRACTION (TOFD)
Time-of-flight diffraction (TOFD) technique for accurate sizing of surface-breaking cracks
Sony Baby, T Balsubramanian, R J Pardikar, M Palaniappan, R Subbaratnam 426
Time-of-flight diffraction (TOFD) technique for accurate sizing of cracks embedded in sub-cladding
Sony Baby, T Balsubramanian, R J Pardikar, M Palaniaappan, R Subbaratnam 600

ULTRASONIC TESTING
X-ray and ultrasonic tomography
P Munshi 47
Development, characterisation and applications of ultrasonic transducers for NDT
A Kumar 71
Ultrasonic study for flaw detectability in ferritic butt welds at high temperature
Sony Baby, T Balsubramanian, R J Pardikar 87
Independent qualification of phased array inspection of fillet welds
R Shipp, C R A Schneider, C J Bird, D A Wood 122
Condition monitoring with ultrasonic arrays at elevated temperatures
K Kirk, C K Lee, S Cochran, A McNab, G Shepherd 130
Rapid ultrasonic inspection of ageing aircraft
R A Smith, J M Bending, L D Jones, T R C Jarman, D I A Lines 174
The effect of laser wavelength on the efficiency of laser-generated ultrasound for the inspection of CFRCs
T Stratoudaki, C Edwards, S Dixon, S B Palmer 186
Ultrasonic polar scans as a possible means of non-destructive testing and characterisation of composite plates
J Degreick, N F Declercq, O Leroy 196
Testing large aerospace CFRP components by ultrasonic multichannel conventional and phased array pulse-echo techniques
G Engl, R Meier, C Brandt 202
Industrially viable non-contact ultrasound
S B Palmer, S Dixon 211
Application of ultrasonic phased arrays; Seminar Report 292
The inspection of thermite welds in railroad rail – a perennial problem
R Clark, S Singh 387
Ultrasonic NDE of railroad tracks: air-coupled cross-sectional inspection and long-range inspection
F Lanci di Scalea, J McNamara 394
Ultrasonic inspection system for train wheels incorporating brake discs
E Garcia Ares, J L Garcia Alonso, J C C Martin Alonso 407
Guided wave testing of rail
P Cawley, M Lowe, P Wilcox, D Alleyne, B Pavlakovic, M Evans, K Vine 413

ULTRASONIC TESTING
Time-of-flight diffraction (TOFD) technique for accurate sizing of surface breaking cracks
Sony Baby, T Balsubramanian, R J Pardikar, M Palaniaappan, R Subbaratnam 426
Characterisation of the metallurgical condition of titanium alloys by ultrasonic measurements
A Kumar, T Jayakumar, Baldev Raj, K K Ray 484
Non-destructive ultrasonic measurements of ceramic post insulators used in electricity distribution systems
J Fleszynski, P Ranachowski, Z Ranachowski, F Rejmund 493
Using high resolution ultrasonic examination to underpin fitness-for-service analysis in the service life extension of the Unity pipeline
M Kennedy, J McCarthy 554
Non-destructive characterisation of adhesive bond strength by Lamb waves
Xiang-ming Zheng, Yao-wu Shi, Yong-ping Lei, Jian-zhong Chen 558
Ultrasonic detection and sizing of complex defects and implications for structural assessments procedures
A B Wooldridge, V M Baborovsky, E J McDonald, B D Banahan, B A McGrath 594
Time-of-flight diffraction (TOFD) technique for accurate sizing of cracks embedded in sub-cladding
Sony Baby, T Balsubramanian, R J Pardikar, M Palaniaappan, R Subbaratnam 600
Ultrasonic characterisation of hot-rolled and heat-treated plain carbon steels
C H Gür, Y Keley 615
Proof of concept of wayside railroad wheel inspection using a laser-air hybrid ultrasonic technique
S Kenderian, D Cerniglia, B B Djordjevic, G Garcia, R Morgan, J Sun, M Snell 621
An automated ultrasonic inspection method for thickness checking of dryer cylinders for paper making machines
P Day 628
Ultrasonic backscatter sizing using phased array - developments in tip diffraction flaw sizing
F Jacques, F Moreau, E Ginzel 724
An ultrasonic wheel-array sensor and its application to aerospace structures
C J Brotherhood, B W Drinkwater, R J Freemantle 729
Guided wave thickness measurement with EMATS
Wei Luo, J L Rose 735
Speckle removal for ultrasonic NDE images with nonlinear filtering for independent component analysis
C H Chen, Xianju Wang 740
Improving the probability of detection for a 2D ultrasonic array using digital signal processing techniques
P C Snowdon, S Johnstone, S Dewey 743
The use of automated ultrasonic testing (AUT) in pipeline construction
L Morgan, P Nolan, A Kirkham, R Wilkinson 746
Preliminary study of classification of defects by ultrasonic pulse-echo signals using an artificial neural network
A A Carvalho, J L B C Veiga, J C da Silva, C M N A Pereira, J M A Rebello ..754
The characterisation of old concrete using destructive and the ultrasonic non-destructive testing methods
I N Prassianakis, E Sideridis, A Vamvakousis 827

WELD INSPECTION
Ultrasonic study for flaw detectability in ferritic butt welds at high temperatures
Sony Baby, T Balsubramanian, R J Pardikar 87
Radiography of thin section welds
Part 1. 116
Part 2. 119
G A Georgiou, C R A Schneider
Independent qualification of phased array inspection of fillet welds
R Shipp, C R A Schneider, C R Bird, D A Wood 122
The inspection of thermite welds in railroad rail – a perennial problem
R Clark, S Singh 387
Sensitivity evaluation in double wall or multilayer radiographic inspection of welds in pressure vessels
L Yan, Q Tian-peng 672
Automatic detection of welding defects using texture features
D Mery, M A Berti 676

X-RAY TOMOGRAPHY
X-ray and ultrasonic tomography
P Munshi 47
Computed tomography reconstructions using multiple discrete detectors
N Saxena, G L Baheti, P K Khatri, K C Songara, L R Meghwal, V L Meena ..682