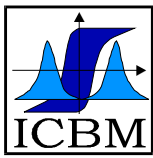


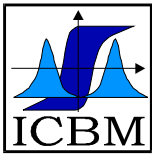
Table of Contents

I Papers

Use of Barkhausen Noise for Crack Closure Measurements <i>G. Donzella, L. Solazzi</i> – University of Brescia, Department of Mechanical Engineering	11
About Possibilities of Use Artificial Neural Networks in Barkhausen Measurement Method <i>T. Garstka, K. Jagiela</i> – Częstochowa University of Technology, Poland	19
Non-Destructive Characterisation of Quenched / Tempered Aisi/Sae 1040 Steel by Magnetic Barkhausen Noise and Sound Velocity Measurements <i>C. H. Gür</i> – Middle East Technical University, Metallurgical and Materials Engineering Dept., Ankara, Turkey <i>İ. ÇAM</i> – Middle East Technical University, Central Lab., Ankara, Turkey	29
Use of Magnetic Barkhausen Noise Measurements for Multi-phase Steels Characterization <i>A. Hug^{1,2}, X. Kleber², J. Merlin², H. Petitgand¹</i> ¹ ARCELOR Research, Grande Voie romaine, Maizières les Metz, France ² Groupe d'Etudes de Métallurgie Physique et de Physique des Matériaux – Institut National des Sciences Appliquées, Villeurbanne Cedex, France	37
Determination of Residual Stresses in Steel Weldments by Micromagnetic Measurements <i>Bruns, M., Nitschke-Pagel, Th., Eslami-Chalander, H., Dilger, K.</i> – Institute for Welding and Joining, TU Braunschweig, Germany	47
Application of Barkhausen Noise Techniques to the Characterization of Recovery and Recrystallization in Cold Rolled Low Carbon Steel <i>A. Martínez-de-Guerenu¹, A. Galarza^{1,2}, A. Crespo^{1,2}, I. Leunda^{1,2}, F. Arizti^{1,2}</i> ¹ CEIT, Department of Electronics and Communications, San Sebastián, Spain ² TECNUN (University of Navarra), San Sebastián, Spain	59
Surface and Subsurface Residual Stress Evaluation in Case-Carburised Steel Using High And Low Frequency Magnetic Barkhausen Emission Measurements <i>V. Moorthy, B.A. Shaw</i> – Design Unit, University of Newcastle Upon Tyne, UK <i>P. Mountford, P. Hopkins</i> – Ministry of Defence (Navy), Bristol, UK	71
Application of Barkhausen Noise Directional Diagrams for Thin Steel Sheet <i>B. Denkena, B. Breidenstein, C. Spille</i> – Institute of Production Engineering and Machine Tools, University of Hannover, Germany	83
Application of Barkhausen Noise to Calibration Advance FEM Simulation Welding and Heat Treatment <i>V. Ochodek</i> – The Technical University of Ostrava <i>A. Klimpel</i> – The Silesian University of Technology	91
Barkhausen Noise measurements for residual stress analysis in welded Dual Phase steel, the influence of active cooling during welding <i>E.M. van der Aa¹, R.R.G.M. Pieters¹, M.J.M. Hermans², A.S. Wojtas³</i> ¹ Netherlands Institute for Metals Research, Delft, The Netherlands ² Delft University of Technology, Delft, The Netherlands ³ Stresstech Oy, Delft, The Netherlands	101
Complementary Studies of Residual Stress Distribution of Repaired Power Plant Steam Turbine Casing <i>B. Augustyniak, M. Chmielewski</i> – Gdansk University of Technology <i>T. Skibiński, D. Mezyk, M. Jaworski</i> – Energy Power Institute, Warsaw <i>J. Laska</i> – WIBREM TS, Wroclaw, Poland	113



Influence of the Process on the Material Properties in Gear Profile Grinding and its Detection using Barkhausen Noise Analysis	123
<i>F. Klocke, Ch. Gorgels</i> – Laboratory for Machine Tools and Production Engineering, Aachen University	
Magnetic Barkhausen Noise: the Influence of Microstructure, Deformation in Bending and Residual Stresses in Low Alloy Steel	133
<i>B.A. Shaw, J.T. Evans, M. Blaow</i> – Design Unit, University of Newcastle Upon Tyne, UK	
Micro Defects Characterization by Barkhausen Method	147
<i>M. Zergoug, O. Barkat, G. Kamel</i> – Laboratoire d'Electronique et d'Electrotechnique, Centre de soudage et de contrôle, Chéraga, Alger	
Distribution of the residual stresses in Ferrite-Martensite steels by means of the Barkhausen noise measurements	161
<i>X. Kleber, A. Hug, J. Merlin</i> – Groupe d'Etudes de Métallurgie Physique et de Physique des Matériaux - Institut National des Sciences Appliquées, Villeurbanne Cedex, France	
 II Posters	
NASCAR's Hendrick Motorsports Leads GM Racing's Evaluation of the Nondestructive Method of Barkhausen Noise Analysis (BNA)	173
<i>Andy Randolph, John Barilka</i> – Hendrick Motorsports <i>Robert M. Fix, Stephen Kendrish</i> – American Stress Technologies, Inc.	
Estimation of Stress Depth Profile of Shot Pinnig Hardened Surface Layer Based on Barkhausen Effect	177
<i>C. Kowancki, J. Błachnio</i> – Technical University of Białystok, Białystok, Poland	
The Effect of a Dislocation Microstructure of the Martensite Steel on the Barkhausen Noise Level	184
<i>J. Błachnio</i> – Air Force Institute of Technology, Warsaw, Poland	
Evaluation of time and space distribution of magnetic flux density in a steel plate magnetized by a C-core	191
<i>M. Augustyniak</i> – Gdansk University of Technology, DesArt Gdynia, PL <i>B. Augustyniak, L. Piotrowski, M. Chmielewski</i> – Gdansk University Of Technology <i>M. Sablik</i> – South-West Research Institute, San Antonio	
Evaluation with Micromagnetic Methods of T22 and P92 Steels Microstructure Modified by Thermal Treatment	199
<i>L. Piotrowski, B. Augustyniak, M. Chmielewski, M. Glowacka</i> – Gdansk University Of Technology, Poland	
Surface Decarburisation of Steel Detected by Magnetic Barkhausen Emission	209
<i>B.A. Shaw, J.T. Evans, M. Blaow</i> – Design Unit, University of Newcastle Upon Tyne, UK	
The Complex System for Residual Stress Determination Based on Barkhausen Noise Measurement	219
<i>T. Garstka</i> – Częstochowa University of Technology, Poland	
Evaluation of Near-Surface and Subsurface Grinding Damages in Case-Carburised En36 Steel Using High and Low Frequency Magnetic Barkhausen Emission Technique	227
<i>V. Moorthy, B.A. Shaw</i> – Design Unit, University of Newcastle Upon Tyne, UK <i>P. Mountford, P. Hopkins</i> – Ministry of Defence (Navy), Bristol, UK	
REmBRAnt – Development of a Guideline for BN Inspections in Gear Manufacturing	239
<i>B. Denkena, F. Stimpel</i> – Institute of Production Engineering and Machine Tools, University of Hannover, Germany	



A Device For Automated Complex Non-Destructive Testing Of Ferro-Magnetic Materials	245
<i>G. Velev, V. Latkovski – Institute of Mechanics, Bulgarian Academy of Sciences, Bulgaria</i>	
Barkhausen Noise Model of Microdefect Characterization	257
<i>M. Zergoug, O. Barkat, G. Kamel – Laboratoire d'Electronique et d'Electrotechnique, Centre de soudage et de contrôle, Chéraga, Alger</i>	
Studies of Micromagnetic Measurements on VVER-1000 Pressure Vessel Steel to Evaluate Irradiation Effects	263
<i>L. Debarberis – Joint Research Centre (EC), Petten, The Netherlands</i>	
<i>S. Pirfo – Applied Structural Integrity Consulting Lcc, Erd, Hungary</i>	
<i>F. Gillemot – Atomic Energy Research Institute, Budapest, Hungary</i>	
Micromagnetic Measurements for Characterising Degradation Processes in 2.25Cr-1Mo Steel	273
<i>S. Pirfo – Applied Structural Integrity Consulting Lcc, Erd, Hungary</i>	
<i>L. Debarberis, G. Manna – Joint Research Centre (EC), Petten, The Netherlands</i>	
On line Data Acquisition and Analysis for Barkhausen Noise Studies	281
<i>H. N. Singh, T.P. Chaturvedi and K. C. Sahoo</i>	
<i>Bhabha Atomic Research Centre, Trombay, Mumbai, INDIA</i>	
Crack Growth Characterization Using Barkhausen Noise Measurement	287
<i>H. N. Singh and K.C. Sahoo</i>	
<i>Bhabha Atomic Research Centre, Trombay, Mumbai, INDIA</i>	

Appendix

Complementary Study with Magnetic and Acoustic Techniques of A336 Steel Damage State due to Creep	293
<i>Boleslaw Augustyniak, Marek Chmielewski, Leszek Piotrowski – Gdansk University Of Technology, Poland</i>	
<i>Zbigniew L. Kowalewski, Slawomir Mackiewicz, Jacek Szelazek – Institute of Fundamental Technology Research</i>	