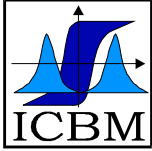


## Table of contents

- The Legacy of Heinrich Barkhausen at the Dresden University and Today's Importance of His Ideas - The Dresden Barkhausen Award 2015** **Presentation**  
*Norbert Meyendorf, Susanne Hillmann, Ulana Cikalova, Jürgen Schreiber*  
Fraunhofer Institute for Ceramic Technology and Systems- Materials Diagnostics IKTS-MD
- Optimization of Sensitivity and Reliability of Magnetic Barkhausen Technique for Detecting Hardness Differences on Quenched and Tempered AISI 4140 Steels** **Presentation**  
*Ebru Arslan<sup>1</sup>, Kemal Davut<sup>1,2</sup>, Caner Şimşir<sup>1,3</sup>*  
<sup>1</sup> Metal Forming Center of Excellence, Atılım University, Ankara, Turkey  
<sup>2</sup> Metallurgical and Materials Engineering Department, Atılım University, Ankara, Turkey  
<sup>3</sup> Manufacturing Engineering Department, Atılım University, Ankara, Turkey
- Comparison of Some Data-Driven Modelling Techniques Applied to Barkhausen Noise Data Sets** **Presentation**  
*Aki Sorsa<sup>1</sup>, Suvi Santa-aho<sup>2</sup>, Minnamari Vippola<sup>2</sup> and Kauko Leiviskä<sup>1</sup>*  
<sup>1</sup> University of Oulu, Control Engineering, Oulu, Finland  
<sup>2</sup> Tampere University of Technology, Department of Materials Science, Tampere, Finland
- Damaged State Evaluation of Fe-C Alloys during Uniaxial and Multi-axial Cyclic Deformation Using the Fractal Behaviour of Barkhausen Noise** **Presentation**  
*U. Cikalova<sup>1</sup>, J. Schreiber<sup>2</sup>, H.P. Meyer, S. Dugan<sup>3</sup>, R. Schäfer<sup>4</sup>, H. J. Klauss<sup>4</sup>*  
<sup>1</sup> Fraunhofer Institute for Ceramic Technologies and Systems-Materials Diagnostics, IKTS-MD Dresden, Germany  
<sup>2</sup> NUGA LAB GmbH Dresden, Germany  
<sup>3</sup> Institute University of Stuttgart, MPA, Germany  
<sup>4</sup> Leibniz Institute for Solid State and Materials Research (IFW) Dresden, Institute for Metallic Materials, Dresden, Germany and Dresden University of Technology, Department of Mechanical Engineering, Institute for Materials Science, Dresden, Germany
- Detection of Surface Property Modifications in a Damaged Bearing Ring by Means of Micromagnetic and X-ray Diffraction Methods** **Presentation**  
*N. Alisch, J. Epp.*  
Stiftung Institut fuer Werkstofftechnik, Bremen, Germany
- Non-Destructive Subsurface Damage Monitoring in 100Cr6 Steel Bearings Using Barkhausen Noise** **Presentation**  
*U. Cikalova<sup>1</sup>, S. Hillmann<sup>1</sup>, J. Schreiber<sup>2</sup>, W. Holweger<sup>3</sup>*  
<sup>1</sup> Fraunhofer Institute for Ceramic Technologies and Systems-Materials Diagnostics, IKTS-MD Dresden, Germany  
<sup>2</sup> Nuga Lab GmbH Dresden, Germany  
<sup>3</sup> Schaeffler Technologies GmbH & Co. KG, Herzogenaurach, Germany
- Characterization of Microstructure of Austempered Low-alloy White Cast Iron by Magnetic Barkhausen Noise Technique** **Presentation**  
*Volkan Kılıçlı<sup>1</sup>, Mehmet Erdoğan<sup>1</sup>, Kemal Davut<sup>2,3</sup>, Zeynep Öztürk<sup>2</sup>, Caner Şimşir<sup>2,4</sup>*  
<sup>1</sup> Faculty of Technology, Department of Metallurgical and Materials Engineering, Gazi University, Ankara, Turkey  
<sup>2</sup> Metal Forming Center of Excellence, Atılım University, Ankara, Turkey  
<sup>3</sup> Metallurgical and Materials Engineering Department, Atılım University, Ankara, Turkey  
<sup>4</sup> Manufacturing Engineering Department, Atılım University, Ankara, Turkey



**11<sup>th</sup> International Conference on Barkhausen Noise and Micromagnetic Testing  
on June 18-21, 2015, in Aydin, Kusadasi, Turkey  
in conjunction with the 8th International Conference and Exhibition on Design and  
Production of Machines and Dies/Molds, DIEMOLD**

---

**Non-destructive Characterization of Prior Austenite Grain Size of AISI D2 Cold Work Tool Steel by Magnetic Barkhausen Noise Technique** **Presentation**

*Kemal Davut<sup>1,2</sup>, Volkan Kılıçlı<sup>3</sup>, Omer Faruk Murathan<sup>4</sup>, Ebru Arslan<sup>1</sup>, Caner Şimşir<sup>1,5</sup>*

<sup>1</sup> Metal Forming Center of Excellence, Atılım University, Ankara, Turkey

<sup>2</sup> Department of Metallurgical and Materials Engineering, Atılım University, Ankara, Turkey

<sup>3</sup> Department of Metallurgical and Materials Engineering, Faculty of Engineering, Gazi University, Ankara, Turkey

<sup>4</sup> Department of Metallurgical and Materials Engineering, Graduate School of Natural and Applied Sciences, Gazi University, Ankara, Turkey

<sup>5</sup> Department of Manufacturing Engineering, Atılım University, Turkey

**Using Magnetic Barkhausen Noise Technique for the Prediction of Properties of Components Manufactured by Incremental Sheet Forming** **Presentation**

*Emin Tamer<sup>1</sup>, Kemal Davut<sup>1,2</sup>, Omer Music<sup>1,3</sup>, İsmail Durgun<sup>4</sup>*

<sup>1</sup> Metal Forming Center of Excellence, Atılım University, Ankara, Turkey

<sup>2</sup> Metallurgical and Materials Engineering Department, Atılım University, Ankara, Turkey

<sup>3</sup> Manufacturing Engineering Department, Atılım University, Ankara, Turkey

<sup>4</sup> TOFAŞ, Bursa, Turkey

**Barkhausen Noise Emission in Hard Milled Surfaces** **Presentation**

*Miroslav Neslušan, Tomáš Hrabovský, Mária Čilliková, Anna Mičietová*  
University of Žilina, Faculty of Mechanical Engineering, Slovak Republic

**Using Barkhausen Noise Analysis for Evaluation of Capability of Different Grinding Machines** **Presentation**

*Jiri Malec<sup>1</sup>, Dominik Blazicek<sup>2</sup>, Filip Cervinka<sup>2</sup>*

<sup>1</sup> PCS s.r.o

<sup>2</sup> Technical University of Brno, Czech Republic

**Characterization of Material Deformation at the Crack Tip of a Carbon Steel Feeder Piping using Barkhausen Noise Analysis** **Presentation**

*H. N. Singh, R. S. Sriwastav, V. P. Jathar, Anil Bhandekar and J. L. Singh*

Post Irradiation Examination Division, Bhabha Atomic Research Centre, Mumbai- 400085, INDIA

**Monitoring the Effects of Subsequent Weld Runs on Surface Residual Stresses in Steel Plates by Magnetic Barkhausen Noise Method**

*C. Hakan Gür<sup>4</sup>, Gökhan Erian<sup>1</sup>, Caner Batıgün<sup>2</sup>, İbrahim Çam<sup>3</sup>*

<sup>1</sup> TURKAK, Ankara

<sup>2</sup> METU-Welding Technology and NDT Research/Application Centre

<sup>3</sup> METU-Central Laboratory

<sup>4</sup> METU-Department of Metallurgical and Materials Engineering, METU (Middle East Technical University), Ankara, TR

**Measuring the Surface Residual Stresses in Shot Peened Steel Components by Magnetic Barkhausen Noise Method**

*C. Hakan Gür<sup>2</sup>, Serdar Savaş<sup>1</sup>*

<sup>1</sup> GE Marmara Technology Center, Gebze, Turkey

<sup>2</sup> Metallurgical & Materials Eng. Dept., Middle East Technical University, Ankara, Turkey

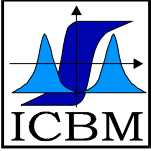
**Evaluating the Stress State of Steels by Simultaneous X-ray Diffraction and Magnetic Barkhausen Noise Measurements during Four-point Bending Tests** **Presentation only**

*Kemal Davut<sup>1,2</sup>, Zeynep Öztürk<sup>1</sup>, Caner Şimşir<sup>1,3</sup>*

<sup>1</sup> Metal Forming Center of Excellence, Atılım University, Ankara, Turkey

<sup>2</sup> Metallurgical and Materials Engineering Department, Atılım University, Ankara, Turkey

<sup>3</sup> Manufacturing Engineering Department, Atılım University, Ankara, Turkey



**11<sup>th</sup> International Conference on Barkhausen Noise and Micromagnetic Testing  
on June 18-21, 2015, in Aydin, Kusadasi, Turkey  
in conjunction with the 8th International Conference and Exhibition on Design and  
Production of Machines and Dies/Molds, DIEMOLD**

---

**Manufacturing of Calibration Samples for Barkhausen Noise Measurements with  
Temperature Controlled Laser Processing**

**Presentation**

*Suvi Santa-aho<sup>1</sup>, Aki Sorsa<sup>2</sup>, Jyrki Latokartano<sup>1</sup>, Lasse Suominen<sup>3</sup>, Kauko Leiviskä<sup>2</sup>, Minnamari Vippola<sup>2</sup>*

<sup>1</sup> Tampere University of Technology, Department of Materials Science Tampere, Finland

<sup>2</sup> University of Oulu, Control Engineering, Oulu, Finland

<sup>3</sup> Stresstech Oy, Vaajakoski, Finland

**Calibration Sample Preparation for Barkhausen Noise with Hydrogen-oxygen Flame**

**Presentation**

*Murat Deveci<sup>1</sup>, Suvi Santa-aho<sup>2</sup>, Samuli Savolainen<sup>1</sup>, Minnamari Vippola<sup>2</sup>*

<sup>1</sup> Stresstech Oy, Vaajakoski, Finland

<sup>2</sup> Tampere University of Technology, Tampere, Finland

**Nondestructive Monitoring of the Effects of Carburizing on 19CrNi5H Steel by Magnetic  
Barkhausen Noise Method**

*H. Hızlı, C.H. Gür, İ. Çam*

Metallurgical & Materials Eng. Dept., Middle East Technical University, Ankara, Turkey