



## “Pioneer in Welding Technology and Non-Destructive Testing in Turkey”

Welding Technology and NDT Research/Application Center (WTNDT) takes its legal entity from the Middle East Technical University (METU), and it is directly administered by the Office of the President. **WTNDT was founded within the frame of a bilateral project (1988-1996) between the Turkish and German governments. BAM-Berlin, DGZfP, and SLV-München were actively contributed to this project by providing training and sending short- and long-term experts.** Since its official establishment in 1991 METU has been making very important contributions to the Turkish industry for training and certification of level 1 and 2 NDT experts, international welding engineers; advisory and testing services to industry, and also for academic research on NDT and welding.

**WTNDT Center has been continuing its activities successfully without any interruption since 1988.**

The director of WTNDT is Prof.Dr. C. Hakan Gür, after the period of the founding director (*Prof.Dr. Alpay Ankara, 1988-2007*). Since 2007, the premises, laboratories, and equipment of the Center have been renovated and upgraded by using the income of the Center. In 2012, a research and development group was established in order to improve the contribution of METU to the Turkish industry.

WTNDT led the establishment of the Turkish Section of the American Society for NDT, and also the establishment of the Turkish NDT Society.

**Memberships:** Full Member of IIW (International Institute of Welding).

### Activities

- Training of International Welding Engineer (IWE) / Technologist / Specialist / Practitioner
- Training and certification of the welders and welding operators
- NDT training and certification (EN ISO 9712, ASNT SNT-TC-1A): UT, RT, MT, PT, VT, digital radiography
- Mechanical tests and Non-Destructive tests for industry
- Academic research studies, Industrial projects, Failure analysis.

### Training and Certification (1988-2022)

- **3,834 participants have attended the NDT courses (5 methods, 3 levels).**
- **2,171 international welding engineers and 5,500 welders have been trained and certified.**
- WTNDT acted as the recognized ATB and examination center of GSI-SLV Munich. After recognition of Turkish ANB (ANB-TR) by IIW, WTNDT started to give IWE diplomas through ANB-TR in April 2011.

**METU Welding and NDT Personnel Certification Center** (METU-PCC) acts as an **accredited certification body** (by Turkish Accreditation Council- TURKAK) according to **EN ISO 17024**, EN ISO 9712 (NDT operator Levels 1, 2, 3), EN ISO 9606-1 (steel welder), and EN ISO 9606-2 (aluminum welder).

### Mechanical Tests

Mechanical tests laboratory has been working under TURKAK **accreditation** according to **EN ISO/IEC 17025**, including tensile test (*ISO 6892-1, ISO 4136, API 1104, ASME Sec IX, AWS D1.1, AWS D1.5, ASTM A370, ASTM E8*), hardness test (*ISO 6507-1, ISO 9015-1, ANSI/AWS B4.0, ASTM E384*), Charpy impact test (*ISO 148-1, ISO 9016, API 1104, ASME Sec IX, AWS D1.1, AWS D1.5, ASTM A370, ASTM E23*), bending test (*ISO 5173, API 1104, ASME Sec IX, AWS D1.1, AWS D1.5, ASTM A370, ASTM E190*), nick-break test (*API 1104*), macroscopic examinations (*ISO 17639, API 1104, ASME Sec IX, AWS D1.1, AWS D1.5, ASTM A340*) and **CTOD fracture toughness tests** (*ASTM E1290, ASTM E1820, ISO 15653, ISO 12135*).

### Projects

Trans Anatolian Pipeline Project (TANAP) is globally the biggest pipeline project for delivery of natural gas from Azerbaijan to Turkey and Europe that is 1850 km and constructed under one management agent. 3 fabrication consortiums with 10 pipe mills, 4 construction consortiums, and several vendors provide services to the project. R&D Division of WTNDT has provided about 90% of the structural integrity and mechanical testing requirements of the project. R&D division has also been involved in fitness for service/purpose assessments and failure analyses for the last 4 years.

In recent years, the R&D activities have been expanded to include the following areas:

- Analysis of internal stresses, deformation, microstructure, hardness distribution with finite element software (FEA) in welded and heat-treated constructions;
- Determination of fatigue and creep behavior of critical materials used in aerospace and defense industries;



- Production of joint interfaces made of functionally graded materials by additive manufacturing, which aims to increase the creep resistance of high temperature resistant CrMo steels with stainless steels;
- Forging grade wire-arc additive manufacturing (WAAM) production of aerospace stainless steels and Ti-alloys;
- Material characterization of products produced by additive manufacturing techniques (Ti6Al4V, Inconel 718, Maraging Steels) by non-destructive methods.

### Academic Activities

WTNDT gives laboratory support for the welding and NDT courses in the department of Metallurgical and Materials Engineering.

The number of completed MSc and Ph.D. theses on welding and NDT is about 55; the number of publications in journals and congresses is more than 90.

### Completed MSc. and Ph.D. Theses

2023	Fracture Toughness and Resistance Properties of Wire Arc Additive Manufactured Duplex Stainless Steel Grade Grade 2509, (co-supervisor: Dr. Koray Yurtışık)	R. B. Ersan
2022	Nondestructive Evaluation of the Effects of Carburizing Process Parameters on Microstructure and Residual Stress State of SAE 9310 Steel via Magnetic Barkhausen Noise Method	Z. Yıldırım
2020	Investigating Effects of Heat Treatment Processes on Microstructural and Mechanical Properties of Additively Manufactured 18Ni300 Maraging Steel	İ. Aydın
2019	Effects of Heat Input and Thermal Cycles to the Fracture Toughness of API 5L Grade X70M Steel Welded by Gas Metal Arc Welding	E. Erol
2018	Investigating The Fracture Behaviour of X70M Linepipe Steel Girth Weldments via Single Edge Notched Tension and Bend Tests	U. Tosun
	Microstructure Control of AISI 4135 for Optimization of Fatigue and Fracture Performance	B. Özcan
	Determination of Shot Peening Effect on Fatigue Behaviour of AISI 4140 Steel by Non-Destructive Measurement of Surface Residual Stresses	S. Çalışkan
2017	Non-Destructive Evaluation of Residual Stress State in Carburized AISI/SAE 8620 Steel	T. Kaleli
2017	Fracture Behaviour Differences of API-5L-X70 Steel which are Joined via Submerged Electrode Arc Welding and Gas Metal Arc Welding	M. Çağırıcı
2016	Numerical Investigation of Residual Stresses, Distortion and Microstructure Evolution in Multi-Pass Welded Steel Components	N. Garipova (PhD)
	Utilization of Friction Stir Processing to Improve the Mechanical Properties of Gas Metal Arc Welded 5083 Aluminum Alloy Plates	S. Firouzeh
	Nondestructive Monitoring of Variations in Microstructure and Residual Stress in Carburized Steels	H. Hızlı
2015	Investigating the Reliability of Ultrasound Phased Array Method for Detection of Defects in Austenitic Stainless Steels and Evaluation of Probability of Detection	B. Akgün
	Effect of Friction Stir Processing on Fracture Toughness and Crack Growth Behaviour of Fusion Welded 5083 Grade Aluminum Plates	G. Akçay
2014	Effects of Friction Stir Processing on Microstructure and Fatigue Crack Growth Behaviour of Gas Metal Arc Welded Al-Alloy	C. Yazganarıkın
	Comparison of the Flaw Detection Abilities of Phased-Array and Conventional Ultrasonic Testing Methods in Various Steels	M. Yalçın
2013	Kinetics & Microstructural Analysis of Fatigue Fracture Progress in Weld Joints of DSS Grade 2205	K.Yurtışık (PhD)
	Investigating the Effect of Deformation and Annealing Texture on Magnetic Anisotropy in Low-C Steel Sheets by Magnetic Barkhausen Noise	F.Ü. Akçaoğlu
2012	Microstructural & Mechanical Characterization of Duplex Stainless Steel Grade 2205 Joined by Hybrid Plasma & Gas Metal Arc Welding	B. Tolungüç
	Non-Destructive Evaluation of Residual Stresses in the Multi-Pass Steel Weldments	G. Erian
2011	Effect of welding parameters on the hot cracking behavior of 7039 aluminum - zinc alloy	M. Akkus
	Microstructural / mechanical characterization of MAG welded joint between cast iron & low-C steel	M.T. Ertürk
2010	Monitoring Variation of Surface Residual Stresses in the Shot-Peened Steel Components by Magnetic Barkhausen Noise Method	S. Savaş
2009	Determination of Residual Stress State in Steel Weldments	H. I. Yelbay
	Characterization of Ultra-Fine Grained Steel Samples Produced by High Pressure Torsion via Magnetic Barkhausen Noise Analysis	S. Bayramoğlu
	Effect of filler material on hot cracking susceptibility of 5XXX series Al-Mg alloys (PhD)	S. Tirkeş
2006	Effect of Welding Parameters on the Susceptibility to Hydrogen Cracking in Line Pipe Steels in Sour Environment	Ö.Yavaş
	Estimation of Heights of Surface Breaking Cracks Using Ultrasonic Timing Methods	E.Öztürk
	Characterization of Steel Microstructures by Magnetic Barkhausen Noise Analysis	K.Davut
	Characterization of Dual Phase Steels by Using Magnetic Barkhausen Noise Analysis	M.Kaplan
	Microstructural Characterization of Hypoeutectoid Steels Quenched from Ae1-Ae3 Intercritical Temperature Range by Magnetic Barkhausen Noise Technique	B.Boyacıoğlu



2005	Effect of Surface Roughness on Ultrasonic Testing	U.İşleyici
	Determination of Welding Parameter dependent Hot Cracking Susceptibility of 5086-H32 Aluminum Alloy with the Use of MVT Method (PhD)	C.Batıgün
2004	Computerized Test Procedure for Industrial Radiographic Examination of Metallic Welded Joints	E.E.Güneş
	Effect of Spheroidizing on Machinability Characteristics and Microstructure of Medium-C Steels	E.Yanardağ
	Determination of Relationship between Weld Quality and Mechanical Strength in Different Steels	O.A. Soylu
2003	Effect of Gap Distance on the Mechanical Properties and Cross-Sectional Characteristics of the MIG-MAG Butt Welds	İ.Kaşıkcı
	Detection and Monitoring of Surface-Breaking Fatigue Cracks in Al 2024-T3 by Ultrasonic Methods	F. Sonat
	Effect of Solid Couplants Made of Hydrophilic Polymers in Ultrasonic Testing	M.İ.Çetin
	Defect Assessment of Spot Welds by NDI	O.O.Koçak
2002	Correlation between Ultrasonic Properties and Heat Treatment Conditions for Some Steels	C.V.Bozay
	Investigation of Effect of Titania Additions on the Strength and Elastic Modulus of a Mica Glass Ceramic by Bending Test & Ultrasonic Velocity Measurements	A.Dereli
	Computer Modelling for Propagation of Ultrasonic Waves in Solid Polycrystalline Structures	O.Kolankaya
	ND Investigation of Age Hardening of Al-alloys by Sound Velocity and Conductivity Measurements	İ.Yıldız
	Microstructural Characterization of Isothermally Heat Treated Steels by Ultrasonics	B.O.Tuncer
	Effect of Microstructure and Hardness on Acoustic Properties of Hypoeutectoid Plain-C Steels	Y.Keleş
2000	Determination of Graphite Morphology, Nodularity & Matrix in Nodular Cast Irons by Ultrasonic Techniques	B.Aydınmakina
	Determination of Microstructural Properties of PM Al-SiC Composites by Ultrasonic Techniques	E.Ataş
1999	Determination of Hot Cracking Susceptibilities of As-Kaynak Welding Consumables for Austenitic Stainless Steels with MVT Test	H.Enginar
1998	Determination of Spot Welding Parameters of Thick, Heat-Treated SAE 4140 Parts	A.B.Tandoğan
	Determination of the H-content in the Weld Metal after Welding with a Basic Electrode	A.Kırbaş
1997	Real-Time Observation of Gas Metal Arc Welding Arc by Means of an Optical System	O.Öztürk
	Hot Cracking in Welding of Aluminum and Some of its Alloys	F.Caymaz
1994	Optimization of Laser Beam Welding of Un- and High-Alloyed Steel Sheets	C.Batıgün
	Parameter Optimization in MIG/MAG Welding Processes	F.Raoufi
1993	Determination of Hot Crack Susceptibility of Welding Fillers with Longitudinal Bending Test	K.Geniş

### A. Selected Papers published in International Journals

1. Mashhuriazar A, Erturk MT, Batıgün C, Omidvar H, Badihehaghdam M, Gür CH, Tirkes S, Investigating the Effects of Repair Welding on Microstructure, Mechanical Properties, and Corrosion Behavior of IN-939 Superalloy, **Journal of Materials Engineering and Performance**, (14 Nov 2022) <https://doi.org/10.1007/s11665-022-07596-5>
2. Mashhuriazar A, Gür CH, Sajuri Z, Omidvar H, Effects of Heat Input on Metallurgical Behavior in HAZ of Multi-Pass and Multi-Layer Welded IN-939 Superalloy, **Journal of Materials Research and Technology**, 15 (2021) 1590-1603
3. Mashhuriazar, A., Omidvar, H., Gur, C.H., Sajuri, Z., "Effect of Welding Parameters on the Liquefaction Cracking Behavior of High-Chromium Ni-Based Superalloy", **Journal of Materials Engineering and Performance**, 29 (2020) 7843-7852
4. Mashhuriazar A., Omidvar H., Sajuri Z., Gür C.H., Baghdadi A.H., "Effects of Pre-weld Heat Treatment and Heat Input on Metallurgical and Mechanical Behaviour in HAZ of Multi-pass Welded IN-939 Superalloy", **Metals**, 10 (2020) 1453
5. Kaleli T., Gür C.H., "Determination of Surface Residual Stresses in the Carburized AISI 8620 Steel by Magnetic Barkhausen Noise Method", **Insight – NDT and Condition Monitoring**, 7 (2020) 416-421
6. Ozcan B, Gürer G, Gür CH, "Effect of Microstructural Modification on Damage Tolerance of 34CrMo4 Shaft Steel", **Fatigue and Fracture of Engineering Materials and Structures**, 43 (2020) 1214-1225
7. Çalışkan S, Gür CH, Investigating the Correlation between Magnetic Barkhausen Noise Emission and Fatigue Life of shot-Peened AISI 4140 Steels, **Insight-NDT and Condition Monitoring**, 61 (2019) 701-705
8. Gür CH, Review of Residual Stress Measurement by Magnetic Barkhausen Noise Technique, **Materials Performance and Characterization**, 7 (2018) 504-525
9. Hızlı H, Gür CH, Applicability of the Magnetic Barkhausen Noise Method for Nondestructive Measurement of Residual Stresses in the Carburized and Tempered 19CrNi5H Steels, **Research in ND Evaluation**, 29 (2018) 221-236
10. Hızlı H, Gür CH, Comparison of Electronic Speckle Laser Interferometry Hole-Drilling and X-ray Diffraction Techniques for Determination of Residual Stresses in the Heat Treated Steels, **J Nondestructive Evaluation**, 36 (2017) 42
11. Gür CH, Nondestructive Characterization of Microstructures of Heat-Treated Steels by Magnetic Barkhausen Noise Technique, **Characterization of Minerals, Metals, and Materials (TMS 2017 San Diego)**, 371-376
12. Gür CH, Erian G, Batıgün C, Çam İ, Investigating the Effects of Subsequent Weld Passes on Surface Residual Stresses in Steel Weldments by Magnetic Barkhausen Noise Method, **Materials Evaluation**, 74 (2016) 418-423
13. Garipova N, Batıgün C, Gür CH, Numerical and Experimental Determination of the Residual Stress State in Multi-pass Welded API 5LX70 Plates, **Materials Testing**, 56 (2014) 831-836
14. Mofid MA, Abdollah-zadeh A, Gür CH, Investigating the Formation of Intermetallic Compounds during Friction Stir Welding of Magnesium Alloy to Aluminum Alloy in Air and under Liquid Nitrogen, **Int J Advanced Manufacturing Technology**, 71 (2014) 1493-1499
15. Yurtisik K, Tirkes S, Dykhno I, Gür CH, Gurbuz R, Characterization of Duplex Stainless Steel Weld Metals Obtained by Hybrid Plasma-Gas Metal Arc Welding, **Soldag. Insp.**, 18 (2013) 207-216





16. Mofid M.A, Abdollah-zadeh A, Malek Ghaini F, Gür CH, Submerged Friction Stir Welding (SFSW) under Water and under Liquid Nitrogen: An improved method to join Al alloys to Mg alloys, **Metallurgical & Materials Trans. A**, 43A (2012) 5106-5114
17. Oral I, Guzel H, Ahmetli G, Gür CH, Determining the Elastic Properties of Modified Polystyrenes by Sound Velocity Measurements, **Journal of Applied Polymer Science** 121 (2011) 3425–3432
18. Yelbay I, Gür CH, Non-Destructive Determination of Residual stress State in Steel Weldments by Magnetic Barkhausen Noise Technique, **NDT&E International** 43 (2010) 29-33
19. Bayramoglu S, Gür CH, Alexandrov I, Abramova MM, Characterization of ultra-fine grained steel samples produced by high-pressure torsion via magnetic Barkhausen noise analysis, **Mater Sci Eng A** 527 (2010) 927–933
20. Tirkeş S., Batgün C., Ankara A., Hot Cracking Susceptibility of Twin Roll Cast Al-Mg Alloy Welds, **Canadian Metallurgical Quarterly**, Vol. 49, Issue 1, pp. 73-80
21. Gür CH, Yıldız, I, Utilization of Non-destructive Methods for Determining the Effect of Age-Hardening on Impact Toughness of 2024 Al-Cu-Mg Alloy, **J Nondestructive Eval**, 27 (2008) 99-104
22. Gür CH, Özer M, Erdogan M, Investigation of the variations in microstructure and mechanical properties of dual matrix ductile iron by magnetic Barkhausen noise analysis, **Research in ND Eval**, 19 (2008) 44-60
23. Davut K, Gür CH, Monitoring the microstructural changes during tempering of quenched SAE 5140 steel by magnetic Barkhausen noise, **J Nondestructive Eval**, 26 (2007) 107-113
24. Kaplan M, Gür CH, Erdogan M, Characterization of dual-phase steels using magnetic Barkhausen noise technique, **J Nondestructive Eval**, 26 (2007) 79-87
25. Gür CH, Çam I, Comparison of magnetic Barkhausen noise and ultrasonic velocity measurements for microstructure evaluation of SAE 1040 and SAE 4140 steels. **Mater Charac** 58 (2007) 447-454
26. Gür CH, Çam I, Investigation of as-quenched and tempered commercial steels by Magnetic Barkhausen Noise method, **Int J Microstructure and Materials Properties** 1 (2006) 208-218
27. Öztürk A, Gür CH, Determination of the influence of TiO<sub>2</sub> on the elastic properties of a mica-based glass-ceramic by ultrasonic velocity measurements, **J Non-Crystalline Solids** 351 (2005) 3655-3662
28. Gür CH, Tuncer BO, Characterization of microstructural phases of steels by sound velocity measurement, **Mater Charac** 55 (2005) 160-166
29. **Gür CH, Tuncer BO, Microstructural investigation of SAE 1040 steel specimens by ultrasonic measurements, Insight – J British Inst of NDT 47 (2005) 421-424**
30. Gür CH, Yıldız, I, Non-destructive investigation on the effect of precipitation hardening on impact toughness of 7020 Al-Zn-Mg alloy, **Mat Sci Eng A** 382/1-2 (2004) 395-400
31. Gür CH, Investigation of microstructure-sound velocity relationship in SiCp reinforced aluminum metal matrix composites, **Mat Sci Eng A** 361/1-2 (2003) 29-35
32. Gür CH, Keles Y, Ultrasonic characterization of hot-rolled and heat-treated plain carbon steels, **Insight – J British Inst of NDT** 45 (2003) 615-620
33. Gür CH, Investigation of the influence of specimen geometry on quench behavior of steels by X-ray determination of surface residual stresses, **Int J Mech Sci** 44/7 (2002) 1335-1347
34. Gür CH, Aydınmakina B, Microstructural characterization of ductile irons by measuring velocity and apparent attenuation of ultrasonic waves, **Insight – J British Inst NDT** 43 (2001) 731-734
35. Gür CH, Quality management system in NDT laboratories: Accreditation as a testing laboratory, **INSIGHT- J British Inst NDT** 40 (1998) 621-623
36. Tekin B, Gür CH, Ankara OA, Investigation of fatigue and creep damage in steam boiler pipes by ultrasonic testing, **Insight- J British Inst NDT** 39 (1997) 626-629

## B. Selected Congress Papers

1. Gür CH, Non-Destructive Methods for Assessment and Qualification of Metallic Components Additively Manufactured by Powder Bed Fusion Processes, **International Conf on Adv Mater Sci & Eng and High Tech Devices Applications (ICMATSE 2022, Ankara, 27-29 Oct 2022)**, e-Proc., ISBN: 978-625-00-1052-5, Invited paper No. 14, pp.22-27
2. Gür CH, Applicability of Non-Destructive Techniques to the Microstructure Characterization of Heat-Treated Components, Invited paper, **Bosphorus International Heat Treatment Symposium, 11-13 May 2022, Istanbul**, Proceedings, p. 37
3. Yurtışık K, Akbarzadeh E, Ersan B, Gür CH, Effect of Secondary Austenite on Fracture Toughness Properties of Wire Arc Additively Manufactured Duplex Stainless Steels, **International Additive Manufacturing Conf., IAM2022, 19-20 Oct 2022, Lisbon**, No.93918
4. Gür CH, Nondestructive Evaluation of Additively Manufactured Metallic Components, **International Conference on Adv Mater Sci & Eng and High Tech Devices Applications (ICMATSE 2020)**, Ankara, 2-4 Oct 2020, Paper No. 117
5. Gür CH, Microstructure Characterization of Heat-Treated Ferromagnetic Steels by Magnetic Barkhausen Noise Method, **5<sup>th</sup> World Congress on Mechanical, Chemical, and Material Engineering (MCM'19)** Lisbon, Portugal, 15-17 August 2019 Proceedings, Paper No. MMME 121. DOI: 10.11159/MMME19.121
6. Gür CH, Grum J, Yelbay Hİ, Pecnik B, Sturm R., Non-Destructive Characterization of Cold Rolled Low-Carbon Steels, **19<sup>th</sup> Int. Metallurgy & Materials Cong.**, 25-27 Oct 2018 Istanbul
7. Batgün C, Gür CH, Effect of Residual Stresses on the Structural Safety of the Butt Welded Structural Steels, **19<sup>th</sup> Int. Metallurgy & Materials Cong.**, 25-27 Oct 2018 Istanbul
8. Kaleli T, Gür CH, Non-Destructive Determination of Surface Residual Stresses in the Carburized SAE 8620 Steel Components, **19<sup>th</sup> Int. Metallurgy & Materials Cong.**, 25-27 Oct 2018 Istanbul
9. Çalışkan S, Gür CH, Non-Destructive Evaluation of Surface Residual Stresses in Shot-Peened Steels, **19<sup>th</sup> Int. Metallurgy & Materials Cong.**, 25-27 Oct 2018 Istanbul
10. Tosun U, Yurtışık K, Tirkeş S, Determination of Quasistatic Fracture Toughness and Fracture Resistance Curves for On-Shore and Off -Shore Pipeline Systems, **19<sup>th</sup> Int. Metallurgy & Materials Cong.**, 25-27 Ekim 2018 Istanbul, Cong. Proc., 665-670



11. Kaleli T, Gür CH, Comparison of Two Procedures for Reliable Measurement of Residual Stress in Carburized Steels by Magnetic Barkhausen Noise Method, **12<sup>th</sup> European Conf. for NDT**, 11-15 June 2018 Gothenburg-Sweden,
12. Nondestructive Determination of Curing State of Rubbers during Vulcanization Process, **12<sup>th</sup> European Conf. for NDT**, 11-15 June 2018 Gothenburg-Sweden
13. Gür CH, Akçaoğlu FÜ, Monitoring Directional Variations of Magnetic Barkhausen Emission in Ferritic Steel Sheets, **12<sup>th</sup> Int. Conf. on Barkhausen Noise & Micromagnetic Testing**, 24-26 Sept 2017 Dresden.
14. Gür CH, Nondestructive Monitoring of Pearlite Degradation in Medium Carbon Steels by Magnetic Barkhausen Noise Method, **14<sup>th</sup> Int Conf. of Slovenian Soc. for NDT**, Slovenia, Proc. 155-161
15. Kaleli T, Gür CH, Non-Destructive Determination of Residual Stresses in the Spiral Submerged Arc Welded Steel Pipes, **19<sup>th</sup> World Cong. for NDT** 13-17 June 2016 Munich, CD Proc. Tu.1.C.3
16. Yalçın M, Yelbay Hİ, Gür CH, PoD Analysis of Phased Array and Conventional Ultrasonic Techniques, **19<sup>th</sup> World Cong. for NDT** 13-17 June 2016 Munich, CD Proc. P150.
17. Hızlı H, Davut K, Şimşir C, Gür CH, Non-destructive Monitoring of Variations in Microstructure and Residual Stress in the Carburized Steel, **19<sup>th</sup> World Cong. for NDT** 13-17 June 2016 Munich, CD Proc. Tu.2.C.1
18. Gür CH, Applicability of Micromagnetic and Ultrasonic Methods for Non-Destructive Monitoring of Microstructure Variations in Steels Induced by Heat Treatment, **5<sup>th</sup> Int. Conf. on Distortion Eng.** 23-25 Sept. 2015 Bremen, Proceedings pp. 329-334
19. Hızlı H, Gür CH, Nondestructive Monitoring of the Effects of Carburizing on 19CrNi5H Steel by Magnetic Barkhausen Noise Method, **11<sup>th</sup> Int Conf on Barkhausen Noise & Micromagnetic Testing**, 18-20 June 2015 Kuşadası, CD Proceedings, No. 19
20. Akcaoglu FU, Gür CH, Monitoring Magnetic Anisotropy Variations in Cold-Rolled Steel Sheets by Magnetic Barkhausen Noise Method, **11<sup>th</sup> European Conference on NDT 06-10 Oct 2014Prag-Czech Rep.**, CD Proc. Paper No: 458
21. Gür CH, Estimation of Residual Stresses in Steel Components by Magnetic Barkhausen Noise Technique: Welding and Shot-Peening, **17<sup>th</sup> Int. Metallurgical & Materials Cong.** 11-13 Sept 2014-Istanbul, CD-Proc., 354-360
22. Garipova N, Batıgün C, Gür CH, Determination of Residual Stress Field on a Multi-Pass Welded Butt-Joint by Finite Element Modeling, **17<sup>th</sup> Int. Metallurgical & Materials Cong.** 11-13 Sept 2014-Istanbul, CD-Proc., 380-388
23. Gür CH, Nondestructive Determination of the Influence of Tempering Temperature on the Microstructure and Hardness of the Quenched AISI 4140 Steel by Measuring Magnetic Properties, **14<sup>th</sup> Asia Pacific Conf on NDT** 18-22 Nov 2013-Mumbai, CP30.
24. Gür CH, Çam İ, Erian G, Batıgün C, Non-Destructive Monitoring of Variations of Residual Stresses in Steel Weldment by Magnetic Barkhausen Noise, **ASME Pressure Vessels & Piping Conf.** 14-18 July 2013 Paris, PVP2013-97495.
25. Gür CH, Çam İ, Investigating the Effects of Quenching and Tempering on Steel Microstructures by Magnetic Barkhausen Noise Method, **6<sup>th</sup> Int Quenching and Control of Distortion Conf.- ASM**, 9-12 Sept 2012 Chicago-USA, 258-265
26. Gür CH, Savaş S, Measuring the Surface Residual Stresses in Shot-Peened Steel Components by Magnetic Barkhausen Noise Method, **18<sup>th</sup> World Congress for NDT**, Durban-S.Africa, Paper no: 478
27. Erian G, Batıgün C, Çam İ, Gür CH, Investigating the Effect of Number of Weld Passes on the Residual Stress State of Steel Plates by Micro-Magnetic Method, **16<sup>th</sup> Int Metallurgical & Materials Congress, Sept 2012-Istanbul**, 903-911.
28. Akçaoğlu FÜ, Gür CH, Prediction of Texture Formation in Cold Rolled Steels by Magnetic Barkhausen Noise Method, **16<sup>th</sup> Int Metallurgical & Materials Congress, Sept 2012-Istanbul**, 1179-1185.
29. Mofid MA, Abdollah-zadeh A, Ertürk MT, Gür CH, Submerged Friction Stir Welding of Al- and Mg-alloys: A New Method to Minimize Formation of Intermetallics, **2<sup>nd</sup> Int Welding Tech Conf** - May 2012 Ankara, 184-189
30. Gür CH, Nondestructive Monitoring of Surface Residual Stresses in Steels by Magnetic Barkhausen Noise Technique: Welded Plates and Shot-peened Components, **3rd Int. Conf. On Distortion Eng.**, 14-16 Sept 2011, Bremen, 361-368
31. Tan E, Gür CH, Simon A, Gacsi Z, Investigating the Microstructure of Hot-Pressed SiC Reinforced AlCu and AlSi Alloy Composites by Ultrasonic Technique, **6<sup>th</sup> Int. Powder Metallurgy Cong**, 5-7 Oct 2011, Ankara
32. Yelbay İ., Cam İ., Gür H. Prediction of Surface Residual Stresses in Butt-Welded Steel Plates by Magnetic Barkhausen Noise Analysis, **10<sup>th</sup> European Conf. on NDT**, 6-11 June 2010, Moscow-Russia, Paper No: 1.01.03
33. Kara Z, Çam İ, Gür CH, Abramova M, Alexandrov İ, Characterization of Equal Channel Angular Pressed AISI 1020 Steels by Magnetic Barkhausen Noise Analysis, **15<sup>th</sup> Int Metallurgy & Materials Cong**, 11-13 Nov 2010, Istanbul, 551-560
34. Batıgün, C., Garipova, N. Demircan, M., Gür, C.H.. Effect of Weld Repair on Microstructure and Mechanical Properties of API 5L X65 Steel (Bildiri). **63<sup>rd</sup> Annual Assembly & Int. Conf. of IIW**. 11-17 July 2010, İstanbul.
35. Davut K, Gür CH, Monitoring the Microstructural Evolution in Spheroidised Steel by Magnetic Barkhausen Noise Measurement, **7<sup>th</sup> Int Conf on Barkhausen Noise & Micromagnetic Testing**, July 15-16 2009, Aachen, 143-150
36. Batıgün C, Yurtışık K, Gürbüz R, Effect of varying laser welding parameters on microstructural characteristics of SAE 409 ferritic stainless steel joints, **IIW Int. Congress**, 14-16 Oct 2009, Stará Lesná, High Tatras, Slovakia
37. Gür CH, Davut K, Non-destructive Characterization of Pearlite Spheroidization by Magnetic Barkhausen Noise Method, **17<sup>th</sup> World Conf NDT**, 25-28 Oct 2008, Shanghai
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