



BHTS 2024

BOSPHORUS

SYMPOSIUM PROGRAMME

SEMPOZYUM PROGRAMI

25-26 April / Nisan
2024, ISTANBUL



2nd Bosphorus International
Heat Treatment Symposium

2. Boğaziçi Uluslararası
Isıl İşlem Sempozyumu



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HEAT TREATMENT INDUSTRIALISTS ASSOCIATION (MISAD)

Heat Treatment Industrialists Association (MISAD), which was established in 2008, today includes the important companies of the heat treatment sector. Gathering heat treatment industrialists and companies receiving heat treatment services under one roof, MISAD sheds light on the future of the industry and the profession with its activities and collaborations.

MISAD, which represents all industrialists in the heat treatment sector and serving this sector, provides cooperation, solidarity and information exchange among its members on professional, technical, commercial, legal, cultural and administrative issues. MISAD; cooperation and solidarity between companies, the problems of the heat treatment sector, the heat treatment sector; It fulfills the duties of providing communication with chambers of industry, government institutions, non-governmental organizations and universities.

The association continues its activities with 66 member companies. MISAD supports sectoral cohesion and development by organizing sectoral factory tours, international travels, breakfast and meal organizations, various ministry visits, training programs and conferences for its member companies. MISAD, which has close relations with the Istanbul and Ankara Chambers of Industry, continues to contribute to the solution of sectoral problems with the events it organizes jointly with these institutions.

Another area in which the Metal Heat Treatment Industrialists Association operates intensively; is the field of education. Thanks to the collaborations developed with vocational high schools and universities in different provinces of our country, studies have been carried out to open heat treatment departments in these schools, to direct students to these departments and to employ them after graduation.

Continuing its activities during the pandemic, MISAD continued to stand by its members with the sectoral meetings and training programs it organized in the digital environment.



METAL ISIL İŞLEM SANAYİCİLERİ DERNEĞİ (MISAD)

2008 yılında kurulan Metal Isıl İşlem Sanayicileri Derneği (MISAD), bugün ısı işleme sektörünün önemli firmalarını bünyesinde bulundurmaktadır. Isıl işleme sanayicisi ve ısı işleme hizmeti alan firmaları tek çatıda toplayan MISAD, bünyesinde hayata geçirdiği faaliyetler ve iş birlikleri ile sektörün ve mesleğin geleceğine ışık tutmaktadır.

Isıl işleme sektöründe olan ve bu sektöre hizmet eden bütün sanayicileri temsil eden MISAD mesleki, teknik, ticari, hukuki, kültürel ve idari konularda üyeleri arasında iş birliği, dayanışma ve bilgi alışverişini sağlamaktadır. MISAD; firmalar arası iş birliği ve dayanışma, ısı işleme sektörünün sorunları, ısı işleme sektörünün; sanayi odaları, devlet kurumları, sivil toplum kuruluşları ve üniversiteler ile iletişimini sağlama görevlerini yerine getirmektedir.

Dernek 66 üye firması ile faaliyetlerine devam etmektedir. MISAD, üye firmaları için sektörel fabrika gezileri, yurt dışı seyahatleri, kahvaltı ve yemek organizasyonları, çeşitli bakanlık ziyaretleri, eğitim programları ve konferanslar düzenleyerek sektörel kaynaşma ve gelişimi desteklemektedir. İstanbul ve Ankara Sanayi Odaları ile yakın ilişkileri bulunan MISAD, bu kurumlarla ortaklaşa düzenlediği etkinlikler ile sektör sorunlarının çözümüne yönelik katkıları sürdürmektedir.

Metal Isıl İşlem Sanayicileri Derneği'nin yoğun bir şekilde faaliyet gösterdiği bir diğer alan ise; eğitim alanıdır. Ülkemizin farklı illerindeki meslek liseleri ve üniversiteler ile geliştirilen işbirlikleri sayesinde, bu okullarda ısı işleme bölümlerinin açılması, öğrencilerin bu bölümlere yönlendirilmesi ve mezuniyet sonrası istihdamları konusunda çalışmalar yapılmıştır.

Pandemi süresince faaliyetlerine devam eden MISAD, dijital ortamda düzenlediği sektörel buluşmalar ve eğitim programları ile üyelerinin yanında olmaya devam etmiştir.



UCTEA CHAMBER OF METALLURGICAL AND MATERIALS ENGINEERS' TRAINING CENTER

METEM (UCTEA Chamber of Metallurgical and Materials Engineers' Training Center) gathers whole sector and cooperate for sustainable development and transformation of the sector. Also, it combines the qualified knowledge of industry, university and colleagues;

- Aims to be integrated to the world, with national and international symposiums, congresses, conferences, seminars,
- Provides highly qualified trainings and consultancy with scientific, technical and practical approach,
- Support sectoral and social developments with own projects,
- Acts as an powerful and active center by providing information, new aspects, relationships, and cooperation to create new opportunities.

METEM organizes many activities in order to reach the increasing knowledge accumulation, to share the experiences and to evaluate them in production processes.

Many such as the EFRS International Iron and Steel Symposium, IMMC International Metallurgy and Materials Congress, ISRS International Steel Rolling Symposium, ALUS International Aluminum Symposium, BHTS Bosphorus Heat Treatment Symposium, ESWS Employee Safety and Wellbeing Symposium in Metallurgy Sector congresses and symposium organization carries out.

In addition, it provides in-house training and consultancy services open to general participation. Engineers, scientists, researchers and production managers; in order to review and discuss new challenges, recent developments and issues.

For that purpose, by bringing together highly qualified and experienced experts from the university and industry, we are able to; technical, managerial and engineering knowledge to refresh, making business development related to the sector's problems, occupational health and safety in problem solving, quality and to increase awareness and thus aim to provide value-added training and events planning, engages.

METEM also demonstrates "researches of Turkish metallurgy industry and universities" to the world, by organizing "international congresses, conferences and symposiums".

METEM is at the service of our sector with its trust, diligence, beliefs and values for improvement.



TMMOB METALURJİ VE MALZEME MÜHENDİSLERİ ODASI EĞİTİM MERKEZİ

METEM (TMMOB Metalurji ve Malzeme Mühendisleri Odası Eğitim Merkezi) tüm sektörü bir araya getirerek sektörün gelişimi ve dönüşümü için çalışmaktadır. Sanayi, üniversite ve meslektaşlarının nitelikli birikimlerini birleştiren METEM;

- Geliştirdiği ve planladığı tüm ulusal ve uluslararası sempozyum, kongre, konferans, seminer gibi organizasyonlarıyla dünyaya entegre olabilmek üzere çalışan,
- Bilimsel, teknik ve uygulamaya yönelik nitelikli eğitim ve danışmanlık hizmetleri veren,
- Sektörel ve toplumsal gelişimi planladığı projelerle destekleyen,
- Bilgi, yeni açılımlar, ilişkiler, fırsatlar yaratma konusunda işbirlikleri sağlama üzerinden hareket eden güçlü bir etkinlik merkezidir.

Artan bilgi birikimine hızla ulaşmak, edinilen deneyimleri paylaşmak ve bunları üretim süreçlerinde değerlendirmek üzere, METEM bünyesinde birçok etkinlik düzenlenmektedir.

EFRS Uluslararası Demir Çelik Sempozyumu, IMMC Uluslararası Metalurji ve Malzeme Kongresi, ISRS Uluslararası Hadde Sempozyumu, ALUS Uluslararası Alüminyum Sempozyumu, BHTS Boğaziçi Isıl İşlem Sempozyumu, ESWS Metalurji Sektöründe Çalışan Güvenliği ve Esenliği Sempozyumu gibi birçok; kongre, sempozyum organizasyonları gerçekleştirilmektedir.

Bunun yanı sıra genel katılıma açık, şirketçi eğitimler ve danışmanlık hizmetleri vermektedir. Mühendislere, bilim adamlarına, araştırmacılara ve üretim yöneticilerine; alanlarında yeni zorlukları, son gelişmeleri ve ortaya çıkan konuları gözden geçirip tartışabilecekleri ortamlar hazırlamaktadır.

Yine bu amaçla, üniversite ve sanayide yer alan, yüksek bilgi ve deneyime sahip uzmanları bir araya getirerek, sektöre ve sektör çalışanlarına yönelik; teknik, yönetsel ve mühendislik bilgilerini tazelemeyi, sektörün sorunlarına ilişkin iş geliştirmeler yapmayı, çalışan sağlığı ve güvenliğinde sorun çözmeyi, nitelik ve farkındalık kazandırmayı ve böylece katma değer sağlamayı hedefleyen, eğitimler ve etkinlikler planlayıp yürütmektedir.

METEM gerçekleştirdiği uluslararası etkinlikler ile Türkiye metalurji sektörünün ve akademik araştırmalarının dünyaya tanıtılmasına katkı sağlamaktadır.

METEM, güven, çalışkanlık, iyiyeye ve değişime olan inanç ve değerleriyle sektörümüzün hizmetindedir.

ORGANIZATION COMMITTEE

YÜRÜTME KURULU

CHAIRMAN
BAŞKAN



Koray YAVUZ
MISAD



Murat ÇELİK
EKSAS



Utku İNAN
BDİ METAL



Nuri KIZILTAN
SARSILMAZ SİLAH SANAYİ



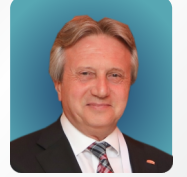
A. Fırat SAPÇI
AKALIN ISIL İŞLEM



Hüseyin SAVAŞ
METEM



Tuğbanur SEZER
METEM



Melih YÜKSEL
MARMARA ISIL İŞLEM

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TERMOSAN ISIL İŞLEM

WUXI JUNTENG

**INVITED
SPEAKERS**

**DAVETLİ
KONUŞMACILAR**



Andy Chen

Marstate Industrial Corporation
TAIWAN

Born in 1955, Andy Chen Graduated from the University of Taiwan Ocean Technology in 1977 with Bachelor Degrees in Marine Engineering. In 1980 he became a certified marine professional engineer.

In 1988, Andy found Marstate in Taiwan and started his career of heat treatment and furnace equipment. He was the sales representative of Vacuum Furnace System Corporation (VFS) in Taiwan, then the following year, he became the representative of Atmosphere Furnace Corporation (AFC) and Marathon Monitor Inc. (MMI)

In 2003, Andy established Shanghai PowerMax Furnace Corporation, and acted as general manager. The company is an exclusive licensee of AFC-Holcroft in China. PowerMax is building full serials of AFC furnace products. Since then, PowerMax had the chance to build the several hundreds of seal quench batch furnaces of AFC UBQ and PowerMax XRE with great satisfaction of customers worldwide. In addition to popular equipment, Andy also built the very large seal quench furnace range from 1.5 tons to 5 tons and other niche equipment such as roller hearth furnace, large continuous annealing furnace.

In 2005, Andy became partner of Applied Process new project in Suzhou China. In 2011, in order to more focus on business in USA, owner of Applied Process sold his share to Chinese partners and the company changed name to Austemper Components Manufacturing Corporation (Suzhou). In 2014, Andy became the president of Austemper Components Manufacturing Corporation (Suzhou).

In 2018, Andy stepped down his jobs at PowerMax and Austemper, and returned home in Taiwan. Andy considers furnace business as lifetime career and continue to develop atmosphere equipment for the next generation. His first successful project of a new generation of Ring type furnace encourage him to develop more with unique features in this filed.

Andy has authored numerous papers and articles in China and gave heat treat related topics in the conference in China, Turkey, Thailand and USA.

The Next Generation of Atmosphere Equipment, Goals of Reduce Energy, Less Atmosphere Consumption, Less NOx emission, Less Manpower Requirement and High Performance.

Heat treatment equipment has always been a very important production equipment in the metal processing industry. Heat treatment equipment is a process with high energy consumption, high pollution and high manpower. How to save energy, reduce emissions and achieve automation is an important goal that everyone strives to pursue. In this article we will describe in detail of a new generation of ring furnace, a new generation of cast link furnace, a new generation of nitriding furnace and a new generation of gas burner, which we have achieved our intended goals. We hope that this result will lead to more development and research in this area.

**Yasemin ÖZKAN**TEI-TUSAŞ
TÜRKİYE

Yasemin ÖZKAN is an Electrical & Electronics Engineer with MS.degree. She completed her double major at Business Administration during her engineering education. She has been working in TEI - Tusas Engine Industries Inc. since 2004 and acting as a Senior Team Leader in NDT & Special Process Quality Department. She has been a voting member of the Nadcap Heat Treatment Supplier Committee for approximately 6 years, and has been a Member of the Advisory Board of Tübitak National Metrology Institute for 6 years. She has two articles published in 6th and 8th National Metrology Congress organized by TMMOB MMO. She has taken "Introduction to

Pyrometry" and "Advanced Pyrometry" training from PRI, a training center affiliated with Nadcap, in 2017 and 2022.

Pyrometric Requirements in Aviation Industry

The aviation industry has more structural and technical requirements compared to other industries. In parallel, the heat treatment process includes many criteria regarding the sensors, indicators, recorders and test applications. The aim of this study is to define the general requirements for the relevant technical criteria and explain the applied test methods. Although the requirements of the Prime Engine Manufacturers in aviation industry differ somehow, they mainly give reference to SAE AMS2750 for Pyrometry requirements. In this study, the general requirements in AMS2750 will be explained.

**Marcel A. J. SOMERS**Technical University of Denmark
DENMARK

Marcel A.J. Somers received his M.Sc. (1985) and his Doctor's degree (1989) from Delft University of Technology in The Netherlands. After employments in industry (Philips) and an additional 7 years as assistant professor at Delft University of Technology, he was appointed full professor of at the Technical University of Denmark in 1997, where he has headed a university group in Materials and Surface Engineering for more than 20 years. He has co-authored more than 350 contributions to journals, books and conference proceedings and is co-inventor of about 20 patents. He was awarded several prizes for his research and innovation, among which the

ASM European Lecturer Award (1999), the Alex Foss gold medal (2014) and the IFHTSE medal (2019). He is Fellow of ASM International (2016) and was knighted in 2022 by the Queen of Denmark.

Nitriding and Nitrocarburizing; an Interwoven Braid of Science and Innovation

Nitriding and nitrocarburizing constitute a class of surface engineering methods whereby a steel workpiece is intentionally alloyed with nitrogen/carbon at elevated temperature, in order to prolong the lifetime under conditions of corrosion, fatigue and wear, or combinations thereof. The lecture covers some highlights of the part of the author's career that involves research and innovation in gaseous nitriding and nitrocarburizing of iron and steel, ranging from fundamental to applied and from experimental to numerical.

The following topics are touched upon:

- Compound-layer formation during ferritic nitrocarburizing
- Expanded austenite on nitrided and nitrocarburized stainless steels
- High-temperature solution nitriding for materials innovation
- Nitriding of additively manufactured (stainless) steel components.



Peter SOMMER

Werkstofftechnik GmbH
GERMANY

- Vocational training as a materials tester at Edelstahlwerk Witten
- Studied materials science at the TU Berlin, graduating as a Dipl.-Ing.
- Five years as a research assistant in the Department of Mechanical Engineering/Materials Engineering at the Mercator University Duisburg with doctorate (Dr.-Ing.)
- Seven years Technical Managing Director at Schwing Verfahrenstechnik GmbH (Fluidized bed technology)
- October 1988: Foundation of Dr. Sommer Werkstofftechnik GmbH
- 2013: Buyout of the former metallography and strength testing laboratory of Böhler Edelstahl, Düsseldorf
- 2018: Buyout of the former materials testing laboratory of Schmolz &

- Bickenbach, Neuss Auditor for the heat treatment process with 130 audits in the USA, Brazil, China, India, England, Spain, Italy, Finland, France, Austria and Germany
- 2012 - 2022: Lectureship at Rhine-Waal University of Applied Sciences, Kleve for the elective subject "Materials Testing and Failure Analysis"
- 2018: Appointment as honorary professor
- 2018 - 2021: Lectureship at the University of Duisburg for the obligatory subject Materials Science of steels
- 2012 Burgdorf award winner
- 2015 University Award winner from Rhine-Waal University of Applied Sciences in Kleve
- 2012 - 2019: Chairman of the DIN Standards Committee "Requirements for heat treatment plants"
- 2017 - 2021: Chairman of the VDI working group "Materials Technology" of the VDI Lower Rhine district
- 2016 - 2022: Member of the Board of Directors of the Heat Treatment and Materials Technology Working Group

Faults Before, During and After Heat Treatment of Steels

Numerous components and the majority of tools obtain their performance properties through specific heat treatment. This requires material-dependent temperature-time-atmosphere cycles, which can lead to very high stresses in the workpieces. Deviations from the best possible selection of heat treatment parameters can prevent further use of these workpieces. Excessive distortion, cracking and undesirable changes in edge composition are just some of the possible heat treatment errors.

However, it is often not realized that even with proper heat treatment, defects can occur that are latent in the workpiece and come to the surface due to the specific heat treatment conditions. For example

Residual stresses from mechanical processing are released by exceeding the recrystallization temperature. If these residual stresses are unevenly found in the workpiece, the results of the release of these residual stresses will also vary.

- The steels themselves can show a wide variety of imperfections or defects, which also have an effect on the heat treatment.
- Machining in the hard condition following heat treatment requires high precision to avoid cracking or changes in properties. Finally, improper operating conditions can lead to damage when the workpieces are used.

This short list makes it clear that faults can occur before, during and after heat treatment. The possible causes are almost unlimited, especially as several influencing factors can overlap. The presentation makes it clear that defects in heat-treated components are not always due to a heat treatment fault.



Karl-Michael WINTER

Nitrex
GERMANY

Karl-Michael Winter, serving as Nitrex's Vice President of Global R&D and Engineering, oversees the company's global research and development initiatives. Since assuming the role in 2019, he has played a pivotal role in advancing Nitrex's existing product portfolio, processes, and technologies, while concurrently driving innovation in new product development.

Leading the charge in integrating Industrial Internet of Things (IIoT) solutions into Nitrex's smart product platform, Michael aims to enhance remote monitoring, operational analysis, and machine-to-machine interaction. This strategic initiative aims to optimize operational efficiency, increase uptime, improve performance, and achieve cost-effectiveness.

With an extensive background spanning over three decades, including his tenure as Vice President R&D at United Process Controls, and leadership roles at Process-Electronic, AEG, and Siemens, Michael brings a wealth of experience to the heat treatment field. His active participation in the AWT establishes him as a respected authority in furnace process controls and automation.

New Generation of Post-Oxidized Brake Rotors

Brake emissions are a substantial source of particles in urban areas, increasing the total number of particles in the air and contributing to PM 2.5 pollution. In 2025, the EU Commission plans to present the new Euro 7 exhaust emissions standard, which will introduce strict regulations on particulate emissions for passenger cars and commercial vehicles. With engine particulate emissions steadily decreasing over the last few decades, the current major source for particulate matter (PM) and particulate number (PN) is tires and braking systems.

Brake corrosion has increased due to the introduction of energy recovery systems, as well as the use of engine braking by intelligent automatic transmissions. This will only continue to increase due to new requirements for electromobility, which reduces mechanical braking to a minimum. Common brake discs are made of cast iron, which rusts. When brakes are not in use, the rust coating is no longer abraded by brake pads and corrosion extends deeper, resulting in significantly higher brake disc wear, especially on rear brakes. This adds to PM and PN pollution.

Applying the ferritic nitrocarburizing process (FNC) to grey cast-iron (GCI) brake rotors has been proven to provide a suitable technical and economical solution when paired with a stress relieving process (SR) prior to final machining. This is especially important as the projected worldwide automotive disc brake market is set to reach a volume of USD\$18 billion by 2025.

Nitrex, a solution provider for heat-treating equipment and services and an expert in nitriding processes, has invested in research into wear-resistant nitrocarburized, nitrocarburized, and postoxidized surfaces on cast and steel parts. A new generation of post-oxidized layers is a conversion coated in-situ controlled post-oxidation that we name Smart-ONC because of its "self-healing" properties. We are adding an additional protection barrier whereby we add another metal that provides high corrosion resistance and protects the surface from any damage or failures.

Nitrex is providing a solution that enables the high-volume production of ferritic nitrocarburized (FNC) brake rotors able to meet the requirements of automotive and other transport companies.

Scientific Committee Members

Bilim Kurulu Üyeleri

Mehmet ASAY
Metalurji ve Malzeme Mühendisi

Bilgi ÇENGELLİ
Bodycote İstaş

Hasan ÇEP
Alpha Metalurji

Hüseyin ÇİMENOĞLU
İstanbul Teknik Üniversitesi

C. Hakan GÜR
Orta Doğu Teknik Üniversitesi

Bora ÖZKAN
IPSEN

Havva KAZDAL ZEYTİN
Tübitak MAM

1. Microstructure conversion
 2. Mechanical, physical and tribological properties
 3. Advanced heat treating manufacturing processes
 4. Vacuum heat treatment
 5. Cryogenic treatment and tempering process
 6. Bainitizing
 7. Induction and low energy magnetic heating
 8. Quenchants and quenching technology
 9. Heat treating equipment
 10. Application of nanotechnology
 11. Mathematical modelling and process simulation
 12. Green energy and carbon footprint
 13. Surface preparation techniques
1. Mikroyapı dönüşümleri
 2. Mekanik, fiziksel ve tribolojik özellikler
 3. Gelişmiş ısı işlem üretim süreçleri
 4. Vakum ısı işlem
 5. Kriyojenik işlem ve temperleme işlemi
 6. Beynitleme
 7. İndüksiyon ve düşük enerji manyetik ısıtma
 8. Takım ve kalıpların ısı işlem ve yüzey mühendisliği
 9. Isı işlem ekipmanları
 10. Nanoteknoloji uygulamaları
 11. Matematiksel modelleme ve süreç simülasyonu
 12. Yeşil enerji ve karbon ayak izi
 13. Yüzey hazırlama teknikleri

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PROGRAM AT A GLANCE
BİR BAKIŞTA PROGRAM

25 April / Nisan, Thursday / Perşembe

09.00	Registration / Kayıt
09.55-10.40	Opening Statements / Açılış Konuşmaları
10.40-11.00	Plaque Ceremony / Plaket Töreni
11.20-12.30	Planery Panel / Açılış Paneli
12.30-13.30	Lunch / Öğle Yemeği
13.30-14.50	Session 1 / 1. Oturum
14.50-15.10	Coffee Break / Çay-Kahve Arası
15.10-16.30	Session 2 / 2. Oturum
16.30-16.50	Coffee Break / Çay-Kahve Arası
16.50-17.50	Session 3 / 3. Oturum
18.00	Stand Closing / Stand Kapanışı
19.30	Gala Dinner with Sistem Teknik Gala Yemeği Sistem Teknik Sponsorluğunda

26 April / Nisan, Friday / Cuma

09.30-10.50	Session 4 / 4. Oturum
10.50-11.10	Coffee Break / Çay-Kahve Arası
11.10-12.30	Session 5 / 5. Oturum
12.30-13.30	Lunch / Öğle Yemeği
13.30-14.30	Session 6 / 6. Oturum
14.30-14.50	Coffee Break / Çay-Kahve Arası
14.50-15.50	Session 7 / 7. Oturum
15.50-16.10	Coffee Break / Çay-Kahve Arası
16.10-17.10	Session 8 / 8. Oturum
18.00	Symposium Closing / Sempozyum Kapanışı

SYMPOSIUM PROGRAMME

1ST DAY (25TH April 2024, Thursday)

SEMPOZYUM PROGRAMI

1. GÜN (25 Nisan 2024, Perşembe)

Opening Ceremony / Açılış Töreni

25 April / Nisan, Thursday / Perşembe, 09.55-11.00

09.55-10.40

Opening Statements / Açılış Konuşmaları

Ata ÖZDEMİRLER

METEM Executive Board, Chair
METEM Yürütme Kurulu Başkanı

Koray YAVUZ

MISAD Executive Board, Chair
MISAD Yönetim Kurulu Başkanı
BHTS2024 Organization Committee, Chair
BHTS2024 Yürütme Kurulu Başkanı

Prof. Massimo PELLIZZARI

IFHTSE President
IFHTSE Başkanı

Erdal BAHCIVAN

İSO Executive Board, Chair
İSO Yönetim Kurulu Başkanı

10.40-11.00

Plaque Ceremony / Plaket Töreni

Plenary Panel / Açılış Paneli

25 April / Nisan, Thursday / Perşembe, 11.20-12.30

The Future of Heat Treatment and Sustainability Isıl İşlemin Geleceği ve Sürdürülebilirlik

Moderator / Moderatör:



Koray YAVUZ
MISAD
Türkiye

Panelists / Panelistler:



Bora ÖZKAN
Ipsen
Germany



Fatih TAMAY
Yönetim Kurulu Üyeleri Derneği (YÜD)
Türkiye



Tamer TAŞKIN
Petrofer
Türkiye

SESSION / OTURUM - 1

Session Chairman / Oturum Başkanı:

C. Hakan GÜR

Middle East Technical University

13.30 - 14.10

Invited Speaker / Davetli Konuşmacı

**Nitriding and Nitrocarburizing; An Interwoven Braid of
Science and Innovation**

Marcel A. J. SOMERS

Technical University of Denmark
Denmark

14.10 - 14.50

Invited Speaker / Davetli Konuşmacı

New Generation of Post-Oxidized Brake Rotors

Karl Michael WINTER

Nitrex
Germany

SESSION / OTURUM - 2

Session Chairman / Oturum Başkanı:

Massimo PELLIZZARI

IFHTSE

15.10 - 15.50

Invited Speaker / Davetli Konuşmacı

The Next Generation of Atmosphere Equipment, Goals of Reduce Energy, Less Atmosphere Consumption, Less NOx Emission, Less Manpower Requirement and High Performance

Andy CHEN

Marstate Industrial Corporation
Taiwan

15.50 - 16.30

Invited Speaker / Davetli Konuşmacı

Faults Before, During and After Heat Treatment of Steels

Peter SOMMER

Werkstofftechnik GmbH
Germany

SESSION / OTURUM - 3

Session Chairman / Oturum Başkanı:

Hüseyin ÇİMENOĞLU

Istanbul Technical University

16.50 - 17.10

Diligent Tool Steel Selection and Proper Heat Treatment of HPDC Dies with Respect to NADCA-Standards

Ingolf SCHRUFF, Petra BECKER

Kind & Co Edelstahlwerk
Germany

17.10 - 17.30

Development of High Toughness Steel for Gigantic Dies and Molds of Die-Casting

Makoto HOB0, Masamichi KAWANO

Daido Steel
Japan

SESSION / OTURUM - 4

Session Chairman / Oturum Başkanı:

Selçuk KILIÇARSLAN

TEI-TUSAŞ

09.30 - 09.50

Energy Consumption and CO2 Footprint - Comparison of LPC and GAS Carburizing

Matthias RINK

Ipsen
Germany

09.50 - 10.10

Deep Case Low Pressure Carburizing

Sylvain BISSEL

Fours Industriels BMI
France

10.10 - 10.30

The Potential of Medium Manganese Steels for Nitriding Applications

**Sitki Can AKKUS¹, Silvia RICHTER², Nelli GORIN²,
Ulrich KRUPP¹, Alexander GRAMLICH¹**

¹Steel Institute of RWTH Aachen University, ²Central Facility for Electron Microscopy
Germany

10.30 - 10.50

Nitrokarbürleme ve Son Oksidasyon Proseslerinin AISI 4140 Çeliğinin Mikroyapı ve Yüzey Özellikleri Üzerine Etkisi

Effect of Nitrocarburizing and Post Oxidation Processes on the Microstructure and Surface Properties of AISI 4140 Steel

**Ümmihan T. YILMAZ¹, Ayşe ERKAN², Çelebi ERSOY²,
Volkan KILIÇLI³**

¹Kırıkkale Üniversitesi, ²Döksen Isıl İşlem Arge Merkezi, ³Gazi Üniversitesi
Türkiye

SYMPOSIUM PROGRAMME
2nd DAY (26th April 2024, Friday)

SEMPOZYUM PROGRAMI
2. GÜN (26 Nisan 2024, Cuma)

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SESSION / OTURUM - 5

Session Chairman / Oturum Başkanı:

Utku İNAN

BDİ Metal

11.10 - 11.50

Invited Speaker / Davetli Konuşmacı

Pyrometric Requirements In Aviation Industry

Havacılık Sektöründeki Pirometrik Gereklilikler

Yasemin ÖZKAN

TEI-TUSAŞ
Türkiye

11.50 - 12.10

Smart 0-Carbon Energy Grids of the Future and Carbon Footprint Reporting Demands and Their Impact on Heat Treating

Bora ÖZKAN

Ipsen
Germany

12.10 - 12.30

Strategies for the Decarbonisation of Reheating and Heat Treatment Processes in the Steel Industry

Çelik Endüstrisinde Yeniden Isıtma ve Isıl İşlem Süreçlerinin Karbonsuzlaştırılmasına Yönelik Stratejiler

Gökhan GULA, Malte FLIESS

Tenova LOI Thermprocess
Germany

SESSION / OTURUM - 6

Session Chairman / Oturum Başkanı:

Havva KAZDAL ZEYTİN

Baykar Teknoloji

13.30 - 13.50

Elektrocüruf Yeniden Ergitme (ESR) ve Açık Kalıpta Dövme ile Takım Çeliklerinin Üretiminde Isıl İşlem Uygulaması: Yerli Üretim ve Metalurjik Özelliklerin İleri Düzeyde Geliştirilmesi

Heat Treatment Application in the Production of Tool Steels with Electroslag Remelting and Open-Die Forging: Advanced Development of Indigenous Production and Metallurgical Properties

Emre BARUTCU^{1,2}, Ersel ÇELİK¹, Funda ÖZMEL¹, Bertan PARMAKSIZOĞLU^{1,2}, Arcan F. DERİCİOĞLU^{1,3}

¹Asil Çelik, ²Bursa Teknik Üniversitesi, ³Orta Doğu Teknik Üniversitesi
Türkiye

13.50 - 14.10

Experiences with the Application of the NADCA Standard in the Hardening Shop

Klara TESARKOVA

Bodycote HT
Czech Republic

14.10 - 14.30

Sıcak Haddelenmiş Q&P Çelikleri Isıl İşlem Parametrelerinin Mekanik ve Mikroyapısal Özelliklere Etkisinin İncelenmesi

The Investigation of Heat Treatment Parameters on Hot-Rolled Q&P Steels on Mechanical and Microstructural Properties

Ali Can AŞKIN, Gözde ALDIKAÇTI, Yusuf YAMANTÜRK, Ferhat İMAL, Emrullah ÇELİKKOL, Abdullah SEZER

Erdemir Demir Çelik Fabrikaları
Türkiye

SESSION / OTURUM - 7

Session Chairman / Oturum Başkanı:

Bilgi ÇENGELLİ

Bodycote

14.50 - 15.10

Retained Austenite: Non-Destructive Analysis By Using X-Ray in Compliance with Standard Practice ASTM E 975-13

Alessandro TORBOLI

GNR Analytical Instrument Group
Italy

15.10 - 15.30

Induction Heating for Advance Manufacturing-Induction 4.0

Sergio FORNER

GH Induction
Spain

15.30 - 15.50

Laser Polishing of Wear Resistant Cold Work Steel 1.2379

Çelik Endüstrisinde Yeniden Isıtma ve Isıl İşlem Süreçlerinin Karbonsuzlaştırılmasına Yönelik Stratejiler

Jens Jonas WILZER¹, Marcel BESTENLEHRER²

¹Dörrenberg Edelmetall GmbH, ²Bestenlehrer GmbH
Germany

SESSION / OTURUM - 8

Session Chairman / Oturum Başkanı:

Nuri KIZILTAN

Sarsılmaz Silah

16.10 - 16.30

The Effect of Plasma Nitriding Temperature on the Wear Behaviour of Pre-Hardened Low Alloy Steel

Ön Sertleştirilmiş Düşük Karbonlu Çeliğin Aşınma Davranışına Plazma Nitrasyon Sıcaklığının Etkisi

Erdem BALCI¹, Mertcan KABA¹, Soydan KENEŞ², Hüseyin ÇİMENOĞLU¹

¹Istanbul Technical University, ²Istanbul Isıl İşlem
Türkiye

16.30 - 16.50

Numerical and Experimental Investigation of Natural Aging Behaviour of AA 6061 Alloy

AA 6061 Alaşımının Doğal Yaşlanma Davranışının Sayısal ve Deneysel Yöntemlerle İncelemesi

Öncü AKYILDIZ¹, Cem SAYAR¹, Barış ÇETİN²

¹Hitit University, ²FNSS Savunma Sistemleri
Türkiye

16.50 - 17.10

Influence of Niobium Content on the Structure and Wear Performance of Borided Ti-Nb Alloys

Niobyum İçeriğinin Borlanmış Ti-Nb Alaşımlarının Yapısı ve Aşınma Performansı Üzerindeki Etkisi

Batuhan SORUŞBAY¹, Mertcan KABA², Faiz MUHAFFEL², Ferit SİYAHCAN², M. Suat SOMER³, H. Özkan GÜLSOY¹, Hüseyin ÇİMENOĞLU²

¹Marmara University, ²Istanbul Technical University, ³Koc University
Türkiye

POSTER
PRESENTATIONS

POSTER
SUNUMLARI

BHTS-P1

Hidrolik Kırıcı Ataşmanı Uçları için Uygun Malzeme Seçimi ve Analizi

Suitable Material Selection and Analysis for Hydraulic Breaker Attachment Chisels

Anıl ERİŞEN¹, Serdar Osman YILMAZ², Bilgin KARA¹

¹Inan Makina, ²Tekirdağ Namık Kemal Üniversitesi
Türkiye

BHTS-P2

Sementasyon Prosesi Uygulanmış Tuz Ortamında Su Verme İşlemine Tabi Tutulmuş 14NiCr14 Çelikte Kriyojenik Sıcaklığının Kalıntı Östenit Miktarı Üzerine Etkisinin XRD Metodu ile İncelenmesi

Investigation of the Effect of Cryogenic Temperature on the Residual Eustenite amount in 14NiCr14 Steel Subjected to Quenching Process in Salt Medium by XRD Method

Zeynep Ece DOĞRU, Nisanur KISA, İlknur PEHLİVAN

Kale Kalıp Makine
Türkiye

BHTS-P3

Mikro Alaşımli Çeliklerde Isıl İşlem

Heat Treatment of Micro Alloy Steels

**Caner TUNA¹, Gürkan GÜMÜŞ¹, Hakan ERÇAY¹,
Tuncay DİKİCİ²**

¹Özkan Demir Çelik, ²Dokuz Eylül Üniversitesi
Türkiye

BHTS-P4

VF-1D-A-696 Tipi Vakum Fırınının NADCA Testi Soğutma Performansı ve Enerji Tüketimi Analizi

Cooling Performance and Energy Consumption Analysis of NADCA Test on VF-1D-A-696 Type Vacuum Furnace

Alper KELEŞOĞLU

Sistem Teknik Sanayi Fırınları
Türkiye

BHTS-P5

Factors Affecting Hardness and Microstructure in Heat Treatment of Steel Materials in Production of Steering and Suspension System Parts

Direksiyon ve Süspansiyon Sistemi Parçalarının Üretiminde Çelik Malzemelerin Isıl İşleminde Sertlik ve Mikro Yapıyı Etkileyen Faktörler

Sefer KOÇAK, Güray ÇAKIR

Ditaş Doğan Yedek Parça İmalat ve Teknik
Türkiye

BHTS-P6

Heat Treatment Tools and Dies, Brings Benefits in Various Industries. Austenitizing Process According to Various Standards of NADCA, GM, FORD

Łukasz CHWIAŁKOWSKI

SECO/WARWICK
Poland

HOW TO GET THERE

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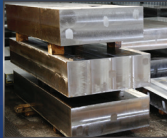


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