

# European Conference on Heat Treatment and 21st IFHTSE Congress



## Preliminary Programme

**Monday, 12 May**

**Tuesday, 13 May**

**Wednesday, 14 May**

**Thursday, 15 May**

16.00 - 18.00 Registration

18.00 - 20.00 Welcome reception

Programme as of 5 December 2013. Maybe subject to alterations.

## Programme for accompanying persons

The programme for accompanying persons will be guided by Mrs. Christa Zoch.

### 1st day, Tuesday, 13 May 2014:

Daytrip to Starnberger See with shipping tour. Visit of the Votive Chapel for King Ludwig, visit of Schloss Berg and circuit through the typical Bavarian village Bernried.

### 2nd day, Wednesday, 14 May 2014

Morning:

Visit of the Lenbach House ("Blauer Reiter").

Afternoon:

Sightseeing tour through Munich, walk through Viktualien Market, visit of the Dallmayr House.

The programme can be booked by [online registration](#) or in the [pdf-registration form](#).

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8.00 - 10.00 Registration

10.00 Room A: Opening Session

Prof. Hans-Werner Zoch and Prof. Reinhold Schneider (conference chairmen), Robert Wood (IFHTSE Secretary-General), Dr. Michael Lohrmann (chairman of AWT)

W. Bleck: From Microstructures to Nanostructures - Materials and Process Design for new steels

Lynn Ferguson: Simulation the Manufacturing Process Chain

12.00 - 13.30 Lunch

13.30 - 15.10 Room A: Nitriding and Nitrocarburizing - Processes and Properties

Eva Troell: Properties and performance of nitrided and nitrocarburized steel

U. Redmer: Controlled Gas Nitriding / Nitrocarburizing Process control and pre-calculation possibilities

Anke Dalke: Influence of process control on nitride layer formation of Spray formed Al alloys during dc pulse plasma nitriding

Mohd Shahrman Adenan: Hybrid Low Temperature Thermochemical Heat Treatment for Surface Improvement on Duplex Stainless Steel

Room B: Modelling and Physical Metallurgy of Heat Treatment Processes

Manuel Schemmel: Modelling of phase transformations and residual stress formation in large hot-work tool steel components

Atilim Eser: Multi-Scale Simulation of Hardening and Tempering of a Hot-Work Tool Steel

Katharina Steineder: Microstructural evolution in 0.1%C5%Mn steel after intercritical annealing depending on temperature and cooling rate

Richard D. Sisson jr: Modeling the Carbonitriding of Alloy Steel

15.10 - 15.40 Coffee break

15.40 - 17.20 Room A: Nitriding and Nitrocarburizing - Application and Combined Processes

Igor Burlacov: Plasma nitrocarburizing of steel in the large industrial scale ASPN-system

Patrick Mirring: Structured approach to material testing ensures reliable introduction of new technologies: Advances in rolling Contact Fatigue Strength Testing and related Substitute Technologies

Kengo Fukazawa: Effects of Hybrid Surface Modification "PALNIP® of Nitriding and super Rapid Induction Heating and Quenching on Wear Resistance and Fatigue Strength as AISI 5150 and Cr-Mo Steel

Larissa Petrova: Combined Thermo-Chemical Treatment: Nitriding of surface alloyed steels

Room B: Simulation of Quenching Processes

Mahdi Soltani: Comparison of spray quenching models for cylindrical heavy forgings

Thibaud Bucquet: Adaptive Spray-Quenching for Process Integrated Heat Treatment of High-Performance Forged Components

Michiharu Narazaki: Effect of Heat Transfer Coefficient on Validity of Quenching Simulation of Metal Parts

Sven Eck: Finite element simulation of stress evolution during quenching in the case of quenched and tempered type protection chains

17.20 - 19.00 Poster Session with beer and pretzel

19.00 - 20.00 Break, individual transfer to the "Augustiner-Keller"

20.00 Bavarian evening at the "Augustiner-Keller"

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<b>9.00 - 10.20 Room A:</b>			
Rafael Mesquita: Physical Metallurgy on the heat treatment and surface engineering of Tool Steels			
Youichi Watanabe: Effect of DLC Coating after Vacuum Carbonitriding on Pitting Resistance of High-Strength Gear Steel			
<b>10.20 - 10.50 Coffee break</b>			
<b>10.50 - 12.30 Room A: Gas Nitriding, Gas Nitriding and Oxidation</b>		<b>Room B: Induction Heat Treatment</b>	
Maryam Akhlaghi: Low temperature nitriding of ferritic Fe-Cr-Al alloys		Wilfried Goy: Hardening of dedicated Driveline Components	
Yasushi Hiroako: Practical Model to Predict Nitrogen-Diffusion Layer's Hardness in Gas Nitrided Chromium-Containing Steel		Alexander Ulferts: FEM-Supported Multi-Frequency Heat-Treatment Development for Automotive Drive Train Parts	
Kazuki Kawata: Characterization of hot work tool steel treated by process combining nitriding and oxidation		Takashi Horino: Computer Simulation of Induction Hardening Incorporating Thermal Deformation of Large Ring Metal Parts	
Heinrich Klümper-Westkamp: Compound layer spalling - risks of preoxidation and oxinitriding		Bernhard Kaufmann: Investigations on Short Time Tempering by Induction Heating for the low alloy 42CrMo4 steel	
<b>12.30 - 14.00 Lunch</b>			
<b>14.00 - 15.40 Room A: Carbonitriding and Low Pressure Carburizing</b>		<b>Room B: Tool Steels</b>	
A.K. Tikhonov: Furnace design influence on productive capacity and quality of parts subjected to carbonitriding		M. Walter: Carbide precipitation of martensitic tool steel during tempering	
Simon Catteau: Study of Phase Transformations of Austenite during Cooling after Carbonitriding of Low Alloyed Steel		Bojan Podgornik: Improved fracture toughness, load carrying capacity and wear properties of hot work tool steel through optimized treatment	
Thomas Waldenmaier: Enhanced temperature resistance for case hardening steel 18CrNi8 (1.5920) by low-pressure carbonitriding		Renno Veinthal: Durability of Complex Shape Fine Blanking Punch in Thick Sheet Metal Forming	
Pierre Berton: Improved efficiency by vacuum sintering and low pressure carburizing of PM components		Rasa Kandrotaitė Janutiene: The Investigation of Plasticity and Microstructure of Hotvar Steel during Martensitic Transformation	
<b>15.40 - 16.10 Coffee break</b>			
<b>16.10 - 17.50 Room A: Novel Quenching Media and Heat Transfer</b>		<b>Room B:</b>	
Martin Beck: Ionic Liquids as new quenching media for aluminium alloys and steels		16.10 Workshop Tool steels	
Roberto Cruces Reséndez: 2D Inverse heat analysis of laboratory-scale experiments for cooling curve analyses			
Philipp Nusskern: Porosity and temperature dependent model for the heat transfer coefficient		17.00 Workshop Global 21	
Imre Felde: Liquid Quenchant Database - A global IFHTSE project			
<b>17.50 - 19.00 Break</b>			
<b>19.00 - 20.00 Bus Transfer, start in front of the "Haus der Bayerischen Wirtschaft"</b>			
Conference Dinner at the "Schlosscafé Nymphenburger Schloss" and announcement of the Poster Award winner			
<b>22.30 Transfer back to the city</b>			

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<b>8.30 - 10.35 Room A: Industrial Heat Treatment Equipments</b>		<b>Room B: Coatings</b>	
Pierre Foret: Replacing Pit Furnace Fans with high-speed gas injectors		V. N. Skorobogatyh: The technology of laser cladding of valves for thermal power plants	
Herwig Altena: Heat Treatment of Gear Parts - Time and Cost Saving Potentials		Katja Fritzsich: Improvement of the Surface Properties of Mg alloys by Electron Beam Liquid Phase Surface Treatment	
n.n.: Modern heat treatment of large dies in HPGQ vacuum furnaces		Pawel Topoljansky: Engineering Tribology of the Si-O-C-N Coatings deposited by Atmospheric Pressure PECVD Method	
Björn Eric Zieger: Advanced hot zone and cooling-gas stream design in vacuum furnaces for automotive applications		Yuri N. Zhuk: Nanostructured CVD Tungsten Carbide Coatings Protect Non-Line of Sight Surfaces against Abrasion and Corrosion	
Klaus Löser: SyncroTherm - heat treatment system and processes for lean production		P. Kulu: Steels, Hardmetals and Hardfacing for abrasive Wear applications	
<b>10.35 - 11.05 Coffee break</b>			
<b>11.05 - 12.45 Room A: Novel Quenching Media and Processes</b>		<b>Room B: Properties</b>	
Josip Zupan: Analysis of the Quenching Oil's cooling curves with agitation and with addition of Nanoparticles		Sabrina Loucif: Microstructural Characterization of Plasma Sprayed Ni-5wt.%Al coatings using Rietveld Refinement	
K. Babu: Effect of Quenching Steel in CNT Nanofluids - An Experimental Study		Darko Landek: Tribological and microstructural investigations of the influence of deep-cryogenic treatment on the properties of high speed steel HS10-2-5-8	
Michael Aronov: Intensive Quenching Processes: Basic Principles, Applications and Commercialization		Jianfeng Gu: Improvement of Mechanical Properties with Reversed Austenite and Copper-rich Phases in an Alloyed Steel with Intercritical Treatment	
Friedhelm Frerichs: Shell hardening of unalloyed steel cylinders due to high speed quenching		Vojtek Leskovsek: Strengthening via the formation of strain-induced martensite and the effects of laser marking on microstructure of austenitic stainless steel	
<b>12.45 Room A: Closing ceremony and announcement of the Young Author Award Winner</b>			
<b>13.05 End of the Congress</b>			