

METAL[®] 2012

Conference proceedings

21th International Conference on Metallurgy and Materials

May 23rd - 25th 2012 Hotel Voroněž I, Brno Czech Republic, EU



TANGER Ltd.
VSB - TU Ostrava
Czech Society for New Materials and Technologies
ASM International
Engineering Academy of Czech Republic
Materials Research Society of Serbia
Norsk Materialteknisk Selskap
Societe Francaise de Metallurgie et de Materiaux
Associazione Italiana di Metallurgia
Austrian Society for Metallurgy and Materials
Sociedade Portuguesa de Materials

METAL[®]
2012

21th Anniversary International Conference on Metallurgy and Materials

Conference proceedings

May 23rd - 25th 2012

Hotel Voroněž I, Brno, Czech Republic, EU

© 2012 TANGER Ltd., Ostrava

ISBN 978-80-87294-31-4

METAL 2012 Conference proceedings

Different Authors

23. - 25. 5. 2012 Hotel Voroněž I, Brno, Czech Republic, EU

Issued by: TANGER, Ltd., Keltickova 62, 710 00 Ostrava, Czech Republic, EU

Edition: 1st Edition, 2012

Print: AMOS repro Ltd., Čs. Legií 8, 702 00 Ostrava, Česká republika/Czech Republic, EU

Number of pages: 1928

PLENARY SESSION	25
Institute of Scientific Instrument: An Overview Presentation	26
Vladimír KOLAŘÍK, Martin ZOBAČ, Tomáš FOŘT, Ivan VLČEK, Libor DUPÁK, Šárka MIKMEKOVÁ, Eliška MIKMEKOVÁ, Libor MRŇA, Miroslav HORÁČEK, Jaroslav SOBOTA	
WBCMM: New Model of Cooperation between Industry and Research Sector	32
Libor KRAUS, Zbyšek NOVÝ, Jan Šuba	
SYMPOSIUM A - ADVANCED IRON AND STEELMAKING	39
Analysis of the Gas Solid Jet in Pneumatic Powder Injection Process	40
Jan JEZIERSKI, Krzysztof JANERKA	
Electrical Properties of Flame from Methane and Oxygen Mixture	46
Pavel KLAUS, Petr TOMČÍK, Petr MOHYLA	
Evaluation of Chemical Heterogeneity of a 90-ton Forging Ingot	53
Pavel MACHOVČÁK, Aleš OPLER, Zdeněk CARBOL, Antonín TREFIL, Karel MERTA, Jakub Zaoral, Markéta TKADLEČKOVÁ, Karel MICHALEK	
Comparison of Numerical Results with Thermography Measurement.....	59
Markéta TKADLEČKOVÁ, Karel GRYC, Ladislav SOCHA, Karel MICHALEK, Petr KLUS, Pavel MACHOVČÁK	
Production and Heat Treatment of Duplex Stainless Steel Forgings.....	66
Martin BALCAR, Libor SOCHOR, Jaroslav NOVÁK, Ludvík MARTÍNEK, Pavel FILA, Josef SVATOŇ, Václav TURECKÝ, Petr MARTÍNEK, Pavel PODANÝ, Jiří BAŽAN	
Production of Ductile Iron with Core Wire for Centrifugally Cast Rolls with High Progressives ICDP and HSS Materials of Working Layers.....	75
Tomáš VÁLEK, Petr ŠIMON, Lucie STRÍLKOVÁ	
The Evaluation of Cast Steel Filtration Efficiency	82
Dariusz BARTOCHA, Wojciech SEBZDA, Jacek SUCHOŇ, Czesław BARON	
Possibilities of Experimental Study of Oxidic Melts Viscosity	88
Rostislav DUDEK, Silvie ROSYPALOVÁ, Ľudovít DOBROVSKÝ	
Evaluation of Influence of Fluxing Agents for Slags and Way of Desoxidation on Efficiency of Steel Desulphurization	95
Ladislav SOCHA, Jiří BAŽAN, Petr STYRNAL, Václav PILKA, Zbygněv PIEGZA, Jan MELECKÝ, Karel MICHALEK, Markéta TKADLEČKOVÁ	
High-Temperature Thermal Analysis of Specific Steel Grades	103
Karel GRYC, Bedřich SMETANA, Monika ŽALUDOVÁ, Petr KLUS, Karel MICHALEK, Markéta TKADLEČKOVÁ, Jana DOBROVSKÁ, Ladislav SOCHA, Bohuslav CHMIEL	
Influence of SiO ₂ on Interfacial Tension between Oxide System and Steel	109
Silvie ROSYPALOVÁ, Rostislav DUDEK, Jana DOBROVSKÁ	

Investigation into Segregation of Selected Elements in the Breakout Area of a Continuously Cast Steel Slab	115
Jana DOBROVSKÁ, Hana FRANCOVÁ, Věra DOBROVSKÁ, Karel STRÁNSKÝ, František KAVIČKA, Karel MICHALEK	
Modeling and Control of Temperature Field of Continuously Cast Billet as Distributed Parameter System	122
Pavol BUČEK, Karol ONDREJKOVIČ, Lukáš TKÁČ, Gabriel HULKÓ	
Influence of Water Temperature on the Cooling Intensity during Continuous Casting and Hot Rolling	129
Milan HNÍZDIL, Miroslav RAUDENSKÝ	
Influence of Chemical Composition Cast Steel on Temperature Field of Continuously Cast Billets	135
Lubomír KLIMEŠ, Josef ŠTĚTINA, Ľudovít PARILÁK, Pavol BUČEK	
Comparison of the Temperature Field Continuously Cast Steel Slabs of Different Chemical Composition.	142
František KAVIČKA, Karel STRÁNSKÝ, Bohumil SEKANINA, Josef ŠTĚTINA, Miloš MASARIK, Tomas MAUDER	
Heterogeneity of Continuously Cast Steel Slab Shortly before Breakout	148
Karel STRÁNSKÝ, Jana DOBROVSKÁ, František KAVIČKA, Miloš MASARIK, Bohumil SEKANINA, Josef ŠTĚTINA	
A Fuzzy Logic Approach for Optimal Control of Continuous Casting Process	154
Tomáš MAUDER, Čeněk ŠANDERA, Josef ŠTĚTINA, Miloš MASARIK	
Optimization of Secondary Cooling in Order to Achieve Higher Surface Temperatures at the Slab Unbending Point.....	160
Josef ŠTĚTINA, František KAVIČKA, Tomáš MAUDER, Lubomír KLIMEŠ, Miloš MASARIK, Zdeněk ŠAŇA	
Possibilities of Graphical Simulation of Technological Parameters on the Machine for Continuous Casting of Steel Slabs.....	167
Miloš MASARIK, Libor ČAMEK, Zdeněk FRANĚK	
Sources of Hydrogen in Vacuum Caisson Equipment.....	172
Martin Korbáš, Milan Raclavský	
Change of Quantity, Sizes and Chemical Composition of Inclusions During Treatment of Steel in EAF-LF-VD Equipment.....	179
M. KORBÁŠ, M. RACLAVSKÝ, L. ČAMEK	
Heat up and Dissolution of Carburizers in Liquid Ferrous Alloys	188
Krzysztof JANERKA, Dariusz BARTOCHA, Jan JEZERSKI, Jan SZAJNAR	
Slag from Production of Pig Iron and Steel making and Possibilities of their Utilization	195
Jozef VLČEK, Václava TOMKOVÁ, Hana OVČAČÍKOVÁ, Petr MARTINEC, Anežka VOLKOVÁ, Michaela TOPINKOVÁ, Vlastimil MATĚJKA, Filip OVČAČÍK, Michaela MICHNOVÁ	
Metallurgical and Chemical Quality of Low-alloy Constructional Cast Steel vs. Mechanical Properties	202
Dariusz BARTOCHA, Jerzy KILARSKI, Jacek SUCHOŇ, Czesław BARON, Jan SZAJNAR, Krzysztof JANERKA, Wojciech SEBZDA	

NDT Detection of Decarburization during the ADI's Heat Treatment.....	210
Zuzana ANDRŠOVÁ, Břetislav SKRBK	
Application of Electron Channeling Contrast Imaging in Study of Polycrystalline Materials and Visualization of Crystal Lattice Defects	216
Jiří DLUHOŠ, Libor SEDLÁČEK, Jiří MAN	
Hydraulic Properties of Ladle Steel Slags	221
Veronika HORÁKOVÁ, Vlastimil MATĚJKA, Jana KUKUTSCHOVÁ, Jozef VLČEK	
Change of Slenderness Ratios of Multi-hole Ceramic Filters from $\lambda = 1,67$ to $\lambda = 3,34$ as a Factor Determining the Effectiveness of Steel Filtration Process.	227
Krystian JANISZEWSKI, Karel GRYC, Markéta TKADLEČKOVÁ	
Numerical Modelling of Metallurgical Processes - Casting and Solidification of Steel	233
Petr KLUS, Karel MICHALEK, Monika ŽALUDOVÁ	
The Behavior of Blast Furnace Coke at High Temperatures	238
Anna KONSTANCIÁK	
Mathematical Simulation of Gaseous Media Flow Through Blowing Elements in Metallurgical Aggregates.....	243
Ladislav KOVÁŘ	
Optimization of Magnetic Properties of the Pure Ferrum – Behanit Material for Construction of the Magnetic Lenses of the Electron Microscopes, Innovative Research of Electron Microscopes	249
Martin MAREK , Daniel PETLAK , Zbyněk RICHTER , Regina HOLČÁKOVÁ , Jiří REŽNAR	
SYMPOSIUM B - METAL FORMING.....	256
Design of the Continuous Annealing Process for Multiphase Steel Strips	257
Danuta SZELIGA	
Phenomenological Model of Hot Deformation Resistance of the C-Mn-V-B-Type HSLA Steel.....	264
Ivo SCHINDLER, Stanislav RUSZ, Petr KAWULOK, Jiří PLURA, Zdeněk VAŠEK, Radim PACHLOPNÍK	
Influence of Methodology for Acquiring and Processing of Experimental Data for Determination of the Value of Activation Energy at Hot Forming.....	270
Petr KAWULOK, Radek MENDROK, Ivo SCHINDLER, Stanislav RUSZ, Marcin KNAPIŃSKI	
Study of the Kinetics of Static Recrystallization using Avrami Equation and Stress Relaxation Method.....	277
Jaromír HORSINKA, Jiří KLIBER, Marcin KNAPINSKI, Ilija MAMUZIC	
The Influence of Temperature of Processing on the Final Structures of a Metal- Ceramic Compact Obtained by Transition through the Semi-solid State	283
Ivana Eliášová, Bohuslav Mašek, Martin Kusý, Hana Jirková, Jiří Svoboda	
Mathematical Analysis of the Results of Continuous Torsion Test of Vanadium Microalloyed Steel	289
Milan KOTAS, Tomáš GAJDZICA, Josef BOŘUTA, Karel Milan ČMIEL	
Optimization of Superplastic Forming Technology	295
Eugene CHUMACHENKO, Sergey AKSENOV, Irina LOGASHINA	

Formability Evaluation of Bimetal using Physical Simulation.....	302
Mariana BALÁŽOVÁ, Ľubomír MATIS, Anna KLENOTIČOVÁ, Peter BRZIAK, Jozef BÍLIK	
Numerical Simulations of Effects of Furnace Lining Radiation on Batch of Various Ingots	308
Filip TIKAL, Michal DUCHEK, Ondřej BAROCH	
Analysis of Slip Line Structures Investigated by AFM during In-Situ Deformation	313
Jozef VESELÝ, Miroslav CIESLAR, Joël BONNEVILLE, Christophe COUPEAU	
Development of Microstructure from Powder Tool Steel Obtained through Semi-solid Metal working.....	318
Bohuslav MAŠEK, David AIŠMAN, Hana JIRKOVÁ, Martin KUSÝ	
The Stress State Influence on the True Stress–strain Curves of Deep-drawing Material DC05.....	323
Jiří SOBOTKA, Pavel SOLFRONK, Pavel DOUBEK, Lukáš ZUZÁNEK	
The Computational Model Influence on the Numerical Simulation Accuracy for Forming Alloy EN AW 5754.....	330
Pavel SOLFRONK, Jiří SOBOTKA, Pavel DOUBEK, Lukáš ZUZÁNEK	
Minimization of Thermal Cracks of Rolls by Cooling Optimization	337
Miroslav RAUDENSKÝ, Radek ZAHRADNÍK	
Grinding Working Rolls of Hot Rolling Mills	343
Alexandr ASTAKHOV, Anna KAWALEK, Igor MAZUR	
Impact of Pulling Forces and Friction of Deformation Resistance in Cold Rolling	349
Jiří KLIBER, Josef MIŠUREC, Ilija MAMUZIC, Jaromír HORSINKA, Zdeněk JUŘÍČEK	
The Theoretical Calculation of Rolling Pressure Minimum	355
Rudolf PERNIS, Jozef KASALA	
Effect of Drawing Angle Size of a Die on Wire Drawing and Bunching Process	361
Viktor TITTEL, Miroslav ZELENAY, Ľuboš KUDELAS	
Influence of Crystal Orientation on Texture Evolution of Magnesium Single Crystals after ECAP Processing.....	368
Petra ŠEDÁ, Stefan MELZER, Aleš JÄGER, Pavel LEJČEK	
Development of Modified Versions of 1.2343 Tool Steel	374
Michal DUCHEK, Pavel ŠUCHMANN, Jiří REŽNAR, Jiří KREJČÍK, Roman MAREK	
Applied Metallurgy of the Microniobium [®] Alloy Approach in Long and Plate Products	378
Steven G. JANSTO	
Ultra-fine Grained Al-Mg-Sc Based Alloys Studied by In-situ Transmission Electron Microscopy.....	385
Karel DÁM, Pavel LEJČEK	
Forming of Microstructure of the Al-Si-Fe-Mn System Alloy by Equal Channel Angular Pressing with Backpressure	391
Abdrakhman NAIZABEKOV, Violetta ANDREYACHSHENKO, Jiri KLIBER	
Manufacturing of Solar Absorber by Unconventional Methods.....	396
MRŇA Libor, LIDMILA Zdeněk, PODANÝ Kamil, FOREJT Milan, KUBÍČEK Jaroslav	
Forming of Strip of Low Carbon Steel by DRECE Process (Dual Rolls Equal Channel Extrusion).....	403
Stanislav RUSZ, Vít MICHENKA, Michal SALAJKA, Stanislav TYLŠAR, Jan KEDROŇ, Michal JANČA	

Qualitative Analysis of Joint Boundary in Explosion Welding	410
Lubomír TURŇA, Milan TURŇA, Zuzana TURŇOVÁ	
HSLA Steel Hardening in the Process of Cold Rolling	416
Sergey S. BORISOV, Igor P. MAZUR	
Simulation of Push-bench Process in Manufacturing of Seamless Tubes	423
Roman ĎURČÍK, Ľudovít PARILÁK	
Mathematical Modelling of Cooling and Prediction of Mechanical Properties of Shapes After Hot Rolling	428
Richard FABÍK, Petr KAWULOK, Richard BARON	
Structure and Properties of Dental Implants	434
Miroslav Greger, Milena Widomská, Václav Snášel	
Properties of Forgings from Magnesium Alloys and their Use in Industry	440
Miroslav GREGER, Milena WIDOMSKÁ, Vlastimil KARAS	
Metallographic Exploration of Twip Steel	446
Jiří KLIBER, Tomáš KURSA, Kamil DROZD, Ľuba HAJDUCHOVÁ, Františka PEŠLOVÁ	
Mathematical Modeling of Equal Channel Angled Drawing in Step Tool	453
Abdrakhman NAIZABEKOV, Sergey LEZHNEV	
Numerical Simulation of Cross Roll Straightening Processes	461
Zdeněk RAAB, Martin HYNEK	
Flow Curves of 7075 Aluminum Alloy Processed by Equal Channel Angular Pressing.....	466
Rossen RADEV, Valentin GAGOV, Emil YANKOV, Danail GOSPODINOV	
Structure Refining of the AZ31 Alloy by Severe Plastic Deformation Processing	471
Stanislav RUSZ, Lubomír ČÍŽEK, Eugeniusz HADASIK, Jan DUTKIEWICZ, Michal SALAJKA, Stanislav TYLŠAR, Jan KEDROŇ	
SYMPOSIUM C - STEEL PRODUCTS - PROPERTIES.....	477
Redistribution of Carbon and Nitrogen in Heterogeneous Weld Joints of Creep-Resistant Steels (P91/P22).....	478
Rudolf FORET, Zdeněk HODIS, Jiří SOPOUŠEK	
Creep Properties of Base Material and Welded Joint of Steel P92	485
Petr MOHYLA, Zdeněk KUBOŇ, Petr TOMČÍK ^c , Jiří MRÁČEK	
Stability of Complex Nitrides in Heat Resistant Steels	490
Vlastimil VODÁREK, Jan HOLEŠINSKÝ	
Detection of Structural Changes in Heat-resistant Steels After Heat and Creep Strain using Electrochemical Methods.....	497
Jiří RAPOUCH, Jaroslav BYSTRIANSKÝ, Marie SVOBODOVÁ	
Lifetime Estimation of the Boiler Tubes	503
Josef VOLÁK, Zbyněk BUNDA, Josef KASL	

Evaluation of Fatigue Strength of 42SiCr Steel Heat treated by Advanced Process Considering Hardness Scatter and Content of Inclusions	508
Ivo ČERNÝ, Dagmar MIKULOVÁ, Martin ČIPERA, Jiří SÍS	
The Use of some Surfacing Procedures for Increase of Fatigue Strength of Fretting Loaded Machinery Parts.....	514
Václav LINHART, Martin ČIPERA, Dagmar MIKULOVÁ	
Fatigue Crack Growth under Mixed Mode Loading of 18CrMo4 Steel	521
Jan BRUMEK, Osamu UMEZAWA, Vratislav MAREŠ	
The Sensitivity of 42SiCr Steel to Inclusions under Fatigue Loading for Three Different Ways of Heat Treatment.....	527
Jiří SÍS, Ivo ČERNÝ, Dagmar MIKULOVÁ	
Effect of Advanced Thermomechanical Treatment on Mechanical Properties of Low Alloyed High Strength Steels.....	532
Hana JIRKOVÁ, Ludmila KUČEROVÁ, Vojtěch PRŮCHA, Bohuslav MAŠEK	
Accelerated Carbide Spheroidisation (ASR) in Low-Alloyed Steels	539
Jaromír DLOUHÝ, Daniela HAUSEROVÁ, Zbyšek NOVÝ	
Accelerated Carbide Spheroidisation in 100CrMn6 Bearing Steel	545
Daniela HAUSEROVÁ, Jaromír DLOUHÝ, Zbyšek NOVÝ	
Dilatometric Investigations of the Effect of Heat Treatment on the Microstructure of Hot Rolled Mining Support Profile	549
Serap GÜMÜŞ, Ersoy ERIŞİR, Muzaffer ZEREN, Günay KÖSE, Erkut FINDIK	
Sensitivity to Intergranular Attack Kinetics of High-alloyed Austenitic Stainless Steels with Copper	556
Václav ŠEFL, Jaroslav BYSTRIANSKÝ	
Assessment of High-alloyed Creep Resistant Materials.....	563
Jaroslav BYSTRIANSKÝ, Václav ŠEFL, Petra MATĚJKOVÁ, Martin PŘÍKASKÝ	
Study of Hydrogen Embrittlement of the Trip 800 Steels by Means of Tensile Tests at Simultaneous Hydrogen Charging.....	570
Petra VÁŇOVÁ, Jaroslav SOJKA, Kateřina KONEČNÁ, Andrea WENGLORZOVÁ	
Evaluation of Duplex Steel Resistance to Sulfide Stress Cracking using Tensile Test and Four Point Bending Test.....	576
Petr JONŠTA, Jaroslav SOJKA, Karel MATOCHA, Kateřina KONEČNÁ, Zdeněk JONŠTA	
Hydrogen Induced Cracking of Ti Clad to the 304 SS in Annealed State	582
Eva MAZANCOVÁ, Dimitrij OSTROUSHKO	
Kinetics of Grain Growth and Recrystallization during Forming Modes for Processing of Steel SA 508	588
Petr ZUNA, Jakub Horník, Jaroslav MÁLEK, František JANDOŠ	
Structural Basis of Steel Grade P460N	595
Ľudovít PARILÁK, Lucia DOMOVCOVÁ, Roman ĎURČÍK, Tomáš BEVILAQUA	
Rolling Advanced High Strength Steels for Automotive Industry	601
Michał DZIEDZIC, Stanisław TURCZYN	

Effect of Thermomechanical Processing on a Morphology of Retained Austenite in AHSS Containing 5%Mn	608
Adam GRAJCAR, Marek OPIELA	
The Influence of Mn Steels Ageing on Heat Transfer Phenomena	615
Eva MAZANCOVÁ, Ivan RUŽIAK, Pavel KOŠTIAL, Milada GAJTANSKÁ, Ľuboš KRÍŠŤÁK	
Surface-modified Austenitic Steel Used for the Thermal-mechanical Stress in the Glass Industry.....	621
H. HRNČIARIKOVÁ, R. TALAŠ, F. PEŠLOVÁ, E. BANASIMOV, P. VRÁBEL	
The Differences in Quality of 18CrNiMo7-6 Steel and its Influences at Deformation after Carburizing	628
Renáta MATHESIUSOVÁ, Antonín KŘÍŽ	
Wear Resistance of Sub-zero Processed Cr-V Ledeburitic Steel Vanadis 6	634
Peter JURČI, Leo JANKA	
Study of DTA Method Experimental Conditions and of their Influence on Obtained Data of Metallic Systems.....	640
Monika ŽALUDOVÁ, Bedřich SMETANA, Simona ZLÁ, Jana DOBROVSKÁ, Karel GRYC, Karel MICHALEK, Rostislav DUDEK	
Measurement of Carbon Diffusion Coefficient – Calibration of Sputter Depth.....	646
Lubomír KRÁL, Jiří ČERMÁK	
Possibilities of Heat Capacity Measurement of Metallic Systems	652
Bedřich SMETANA, Monika ŽALUDOVÁ, Simona ZLÁ, Jana DOBROVSKÁ, Markéta TKADLEČKOVÁ, Petr KLUS, Silvie ROSYPALOVÁ	
Influence of Alloy Elements on Corrosion of Valve Steels in Environment of Combustion Gases of Self-ignition Engine	659
Krzysztof ADAMASZEK, Jan NOWAK	
Plasticity of Two Manganese Steels with Different Ni and Cu Additions	665
Michal CAGALA, Eva MAZANCOVÁ, Petr LICHÝ, Hana BLAHOŽOVÁ	
Exploding Experiment for Quality Test of Weapon Barrel Steels.....	671
Van Yen DUONG	
Interaction of Prior Deformation and Heating Rate on Austenitisation Kinetics.....	678
Daniel GAUDE-FUGAROLAS	
About some Features in Vacuum Oil Quenching	684
Danail GOSPODINOV, Plamen DANEV	
Melted Zone Morphology by Laser Welding of Ti-6Al-4V with X5CrNi18-10.....	690
Cosmin GROZA, Ion MITELEA, Ion-Dragoș UȚU, Corneliu Marius CRĂCIUNESCU	
Ammonium Perrhenate Purification and Rhenium Recovery from Heat Resistant Rhenium-nickel Superalloys	697
Vitaliy P. Guro	
Experience with Explosive Hardening of Railway Frogs from Hardfield Steel L.....	705
Petr HAVLÍČEK, Kateřina BUŠOVÁ	

Measurement of Properties of High Strength Low Alloyed Steel under Dynamic Load in Real-word Conditions of Deformation at Elevated Temperatures	712
Štěpán JENÍČEK, Ludmila KUČEROVÁ, Hana JIRKOVÁ, Bohuslav MAŠEK	
Considerations on the Effects of Carbon Content on the Cavitation Erosion Resistance of Stainless Steel with Controlled Content of Chromium and Carbon	718
Alin Dan JURCHELA, Ilare BORDEASU, Ion MITELEA, Adrian KARABENCIOV	
Considerations on the Cavitation Erosion Behavior of two Stainless Steels with Similar Ratios of Structural Constituents.....	724
Adrian KARABENCIOV, Ilare BORDEASU, Ion MITELEA, Alin Dan JURCHELA	
Considerations Regarding the Behavior of some Austenitic Stainless Steel to Cavitation Erosion.....	730
Ilare BORDEASU, Ion MITELEA, Stefan-Eusebiu KATONA	
Analysis of Chosen High Manganese Steels Parameters	737
Eva MAZANCOVÁ, Ivo SCHINDLER, Michal CAGALA	
Influence of Aging Process on Strengthening of three Triplex Steel Types	743
Eva MAZANCOVÁ, Ivan RUŽIAK, Petr JONŠTA,	
Selected Properties of Mines Supports	749
Eva MAZANCOVÁ, Jan HOLEŠINSKÝ, Zdeněk VAŠEK	
Examination of Metals and Alloys with Slow and Very Slow Electrons.....	756
Šárka MIKMEKOVÁ, Libor MRŇA, Eliška MIKMEKOVÁ, Ilona MÜLLEROVÁ, Luděk FRANK	
Influence of Plastic Deformation Conditions on Recrystallization Kinetics OF Nb-Ti-V Microalloyed Steel	762
Marek OPIELA, Adam GRAJCAR	
Optimizing Abrasive Waterjet Cutting for Special Materials. Case Study: Cutting Austenitic Stainless Steels	769
Ion -Aurel PERIANU, Aurel-Valentin BÎRDEANU, Ion MITELEA	
Comparison of Hardness, Tensile Stress and Yield Stress, Depending on Temperature and Annealing Time of Degradation of P91 Steel.....	776
Daniela POLÁCHOVÁ, Pavlína HÁJKOVÁ, Josef UZEL	
Problems Posed by the Design and Implementation of a Welded Petrochemical Storage Tank	782
Mihaela POPESCU, Elena Simona CUTEAN, Radu Alexandru ROȘU, Marian BOBINĂ	
Microstructural Investigation of ICDP Iron Designed for Working Layers of Composite Centrifugally Cast Rolls in Hot Rolling Mills	788
Lucie STŘÍLKOVÁ, Tomáš VÁLEK	
Stereological Parameters of Carbides in Modified Wear Resistant Fe-C-Cr Alloys.....	795
Andrzej STUDNICKI, Jan JEZERSKI	
Properties of Hardened Layer of Drilled Deep Holes	803
Quang Dung TRAN, Emil SVOBODA, Jaromír KADLEC, Zdeněk JOSKA, Zdeněk POKORNÝ	
The Effect of Variable Pressure Field on Equilibrium State of Molten Metal with Bottom Heating and Situated in a Homogeneous Gravitation Field.....	808
Lubomír TURŇA, Milan TURŇA, Zuzana TURŇOVÁ	

The Control of Microstructure of ICDP Iron using Thermal Analysis.....	815
Tomáš VÁLEK, Jiří HAMPL	
High Temperature Properties of a New Wrought Austenitic Steel	820
Tomáš VLASÁK, Jan HAKL, Pavel NOVÁK, Anna VÝROSTKOVÁ	
Determination of Fatigue Characteristics of Steel P92	827
Josef VOLÁK, Michal CHOCHOLOUŠEK, Matyáš NOVÁK	
The Optimization of Free Cutting Steel Heat Treatment	831
Lukáš VOLESKÝ, Pavel KEJZLAR, Zuzana ANDRŠOVÁ	
Cavitation Erosion Behavior of Heat Treated Ti-6al-4v Alloy	836
Marcela Elena DIMIAN, Ion MITELEA, Ilare BORDEASU	
SYMPOSIUM D - MODERN TRENDS IN SURFACE ENGINEERING.....	842
Influence of the Surface State on Hot Dip Zn Galvanizing Effects of Iron Alloys	843
Dariusz JEDRZEJCZYK, Maciej HAJDUGA, Sylwia WĘGRZYNKIEWICZ, Wojciech SKOTNICKI	
Initial Deposition of Electroless Nickel from Borohydride-reduced Bath on Various Ferrous Alloys.	850
Véronique VITRY, Adeline SENS, Abdoul-Fatah KANTA, Fabienne DELAUNOIS	
Analysis of Ceramic Implants Surface with Golden Nano-layer	857
Maciej B. HAJDUGA, Maciej HAJDUGA, Dariusz JĘDRZEJCZYK	
HVOF Spraying Technique of Titanium on Steels Surfaces Components	863
Elena Simona CUTEAN, Radu Alexandru ROȘU, Ion MITELEA	
Influence of the Water Chamber and Position of the Stabilizer on the Impact Pressure at High Pressure Descaling.....	870
Jozef HRABOVSKÝ, Jaroslav HORSKÝ	
Evaluation of Falvanic Coatings of Medical and Rehabilitation Equipment as the Anticorrosive and Antibacterial Protection	877
Dariusz SOŁEK, Maciej HAJDUGA, Dariusz JĘDRZEJCZYK, Sylwia WĘGRZYNKIEWICZ	
Influence of Annealing to Stress in CNx:(H) Films Observed by Sleem	883
Eliška MIKMEKOVÁ, Šárka MIKMEKOVÁ, Ilona MÜLLEROVÁ, Jaroslav SOBOTA	
Influence of the Zinc – Coatings Topography on the Adhesion Level of the Bacterial Flora Typical in the Hospital Environment.....	889
Sylwia WĘGRZYNKIEWICZ, Maciej HAJDUGA, Dariusz JEDRZEJCZYK, Dariusz SOLEK	
Comparison of Wear Resistance of Chromium Coatings for Piston Rings using Pin-on-disc Test and Engine Test	896
Ondřej CHOCHOLATÝ, Jiří HÁJEK, Antonín KRÍŽ, Jan VIČEK	
The Effect of Intersplat Porosity on Properties of W Deposits	901
Ondřej KOVÁŘÍK, Petr HAUŠILD, Jan SIEGL	
Surface Treatment of Fe-Al Alloy	908
Pavel NOVÁK, Vladimír FILIP, Alena MICHALCOVÁ	

Increase of Velocity of Deposited Particles in Flame Spray Technologyx and Optimalisation of Flame Velocity Profiles	913
Tomáš ZÁBRANSKÝ, Jan HAMSA	
Coating of Tool Steels with CrN Enriched with Silver	918
Jana BOHOVIČOVÁ, Mária HUDÁKOVÁ, Peter JURČI	
Corrosion Performance of Duplex Treatments Based on Gas Nitriding and Shot Peening.....	925
Ramona Monica DOBRA, Ion MITELEA, Marian BOBINĂ	
Adhesion Properties of the Plasma Spray Coatings	932
Ekrem ALTUNCU, Fatih USTEL	
Diffusion Boronizing of Cr-V Ledeburitic Steels.....	939
Mária HUDÁKOVÁ, Peter JURČI, Viktória SEDLICKÁ	
The Spraying Parameters Optimization of the HVOF Stellite 6 Coating.....	947
Šárka HOUDKOVÁ, Michaela KAŠPAROVÁ, Jan SCHUBERT	
Hydrogen Impact of High-strength Steels Embrittlement.....	954
Jaroslav BYSTRIANSKÝ, Václav ŠEFL, Jiří RAPOUCH, Lukáš HORSÁK, Martin PŘÍKASKÝ, Karel MALANÍK	
Mikrostructural Changes of Air Plasma Sprayed CoNiCrAlY Coating after Remelting	961
Veronika ŘIČÁNKOVÁ, Ladislav ČELKO, Lenka KLAKURKOVÁ, Jiří ŠVEJCAR	
Thermally Sprayed Coatings for High Temperature Application.....	967
Michaela KAŠPAROVÁ, Šárka HOUDKOVÁ, Jana ČUBROVÁ	
Properties of Glass-ceramic Enamel Coats and their Used in Biological Environment	974
Jitka PODJUKLOVÁ, Vratislav BÁRTEK, Tomáš LANÍK, Kamila HRABOVSKÁ, Sylvie KOPAŇÁKOVÁ, Petr ŠRUBAŘ, Kateřina SUCHÁNKOVÁ, Olga Nikolajevna KRIVOLAPOVA, Vadim Petrovič TARASOV , Irena ZBOŽÍNKOVÁ	
Possibilities of Stainless Steel Laser Marking	980
Michal ŠVANTNER, Martin KUČERA, Šárka HOUDKOVÁ	
The Influence of Thermal Load on Properties of Heterogeneous Joints between Steel and Aluminium Alloy	987
A. FRANC, J. TESAŘ	
Thin Metallic Layers Structured By E-Beam Lithography	993
Miroslav HORÁČEK, Vladimír KOLAŘÍK, Michal URBÁNEK,František MATĚJKA, Milan MATĚJKA	
Structural Stability of Thermal Barrier CoAtings Produced by Thermal Spraying	998
Ladislav ČELKO, Lenka KLAKURKOVÁ, Karel SLÁMEČKA, Simona POSPÍŠILOVÁ, Martin JULIŠ, Karel NĚMEC, Tomáš PODRÁBSKÝ, Jiří ŠVEJCAR	
Evaluation of Properties of CrN PVD Coating for Functionally Graded Materials.....	1005
Jakub HORNÍK, Jan RYBNÍČEK, Martin RUND, Pavlína HÁJKOVÁ, Evgeniy ANISIMOV,David TONDL	
Effect of Plasma Sprayed AlSi Coating on Low Cycle Fatigue Properties of Cast Superalloy INconel 738LC	1013
Karel OBRTLÍK, Simona POSPÍŠILOVÁ, Martin JULIŠ, Ladislav ČELKO, Tomáš PODRÁBSKÝ	

Improving Bond Strength between Carbon Steel and Plasma Sprayed Ceramic Coating through a Phosphating Process.....	1019
Petr POKORNÝ, Vlastimil BROŽEK, Libor MASTNÝ	
The Influence of Structure Changes on some Qualities of High-Alloyed Materials in the Simulation of Long-term Operating Conditions.....	1026
Martin KRAUS, Pavel BÍLEK, Jaroslav BYSTRIANSKÝ	
Dynamic Impact Tester of Hard Thin Coatings	1033
Jan GROSSMAN, Libor DUPÁK, Tomáš FOŘT, Jaroslav SOBOTA	
Influence of Modifying Treatment of Titanic Implants on Periimplantitis.....	1037
Tadeusz ZDZIECH, Maciej HAJDUGA, Dariusz JEDRZEJCZYK	
Wear Resistance of Duplex Coated Cr-Mo-V Alloyed Steel.....	1044
Marie KOLAŘÍKOVÁ, Jan SUCHÁNEK	
Study of the Influence of Particle Size of Anticorrosive Pigments on Coating Adhesion to Steel Substrate	1048
Sylvie KOPAŇÁKOVÁ, Jitka PODJUKLOVÁ, Vratislav BÁRTEK, Kamila HRABOVSKÁ, Kateřina SUCHÁNKOVÁ, Petr ŠRUBAŘ, Tomáš LANÍK, Vladimír Viktorovič MENŠIKOV	
Physico-chemical Studies of Correlations of Impedance Parametres and Determination of Characteristic Frequencies of test Signals of lithium-ion and Lithium-polymer batteries.....	1054
O.N. KRIVOLAPOVA, V.P. TARASOV, E.V. TARASOVA, J. PODJUKLOVÁ, T. LANÍK	
Testing of Bond Strength Hot-dip Galvanized Steel Reinforcement Concrete with Verification Causes Changes at the Interface Transition Zone	1058
Petr POKORNÝ, Milan KOUŘIL, Pavel NOVÁK	
High Temperature Tribological Properties of the HVOF Sprayed TiC-based Coatings.....	1065
Jarmila SAVKOVÁ, Šárka HOUDKOVÁ, Michaela KAŠPAROVÁ	
Technology of Creation Coatings based on FeCrAlY.....	1072
Šárka HOUDKOVÁ, Roman SPLÍTEK, Michaela KAŠPAROVÁ, Matěj HRUŠKA, Fosca DI GABRIELE	
Study of Transparent Nanocoatings for Application on Metallurgical Production Materials.....	1080
Kateřina SUCHÁNKOVÁ, Jitka PODJUKLOVÁ, Tomáš LANÍK, Vratislav BÁRTEK, Sylvie KOPAŇÁKOVÁ, Petr ŠRUBAŘ, Kamila HRABOVSKÁ, Miroslav HANÁK, Vadim Petrovič TARASOV	
Effect of Co Content on the Properties of HVOF Sprayed Coatings based on Tungsten Carbide.	1086
Jan SCHUBERT, Šárka HOUDKOVÁ, Michaela KAŠPAROVÁ, Zdeněk ČESÁNEK	
Study of the Effects of Distribution of Pigment Nanoparticles on Corrosion Resistance of Transparent Coatings	1092
Petr ŠRUBAŘ, Jitka PODJUKLOVÁ, Tomáš LANÍK, Vratislav BÁRTEK, Kateřina SUCHÁNKOVÁ, Sylvie KOPAŇÁKOVÁ, Kamila HRABOVSKÁ, Miroslav HANÁK, Richard Dvorský, Olga Nikolajevna KRIVOLAPOVA, Vladimír Viktorovič MENŠIKOV	
Studies about Structure and some Physical Properties of Nickel and Zinc Alloy Layers Electrochemically Deposited	1099
Violeta VASILACHE, Catalin POPA, Traian VASILACHE	

Influence of CMT and MIG Soldering on Zinc Layer Thickness.....	1106
Jiřina VONTOROVÁ, Petr MOHYLA, Xenie řEVČÍKOVÁ	
SYMPOSIUM E - NON-FERROUS METALS AND ALLOYS.....	1113
The Influence of Inoculation type on Structure of Pure Aluminium	1114
Tomasz WRÓBEL	
Influence of Corrosion of Fatigue Properties of Aluminium Alloys AA6082, AA6262 AND AA6023.....	1121
Jitka VRÁTNÁ, Jiří FALTUS	
In-situ Electron Microscopy Observations of the Microstructure Changes in the 6082 Aluminium Alloy during Homogenization	1128
Miroslav CIESLAR, Jan BAJER, Michal HÁJEK, Vladivoj OČENÁřEK	
Studies of Transition Zone Phenomena for AlSi Matrix Composite Reinforced with Intermetallic Phases.....	1135
Marcin KONDRACKI, Mirosław CHOLEWA	
ResponSe of Cold-rolled Al–Mn–Sc–Zr Alloy to Isochronal and Isothermal Annealing	1142
Martin VLACH, Ivana STULÍKOVÁ, Bohumil SMOLA, Hana CÍSAřOVÁ, Jaromír PLÁřEK, Vladivoj OČENÁřEK, Dhriti TANPRAYOON, Volkmar NEUBERT	
The Influence of Pre-deformation on Minority Phases Precipitation in Modified AW-3003 Aluminium ...	1149
Michaela POKOVÁ, Miroslav CIESLAR, Jacques LACAZE	
High Temperature Deformation of an ECAP Al-Mn based Alloy	1156
Přemysl MÁLEK, Miroslav CIESLAR, Peter SLÁMA	
Influence of Microstructure in Stability on Creep Behaviour of UFG Pure Materials	1162
Petr KRÁL, Jiří DVOřÁK, Milan SVOBODA, Marie KVAPILOVÁ, Václav SKLENIČKA	
Microstructure Stability and Creep Behaviour of Alloys Processed by ECAP.....	1168
Jiří DVOřÁK, Petr KRÁL , Milan SVOBODA, Marie KVAPILOVÁ, Václav SKLENIČKA	
Properties of the Casting AJ62 Mg-based Alloy	1175
Dalibor VOJTěCH, Jiří KUBÁSEK, Michal MARTÍNEK	
Properties of Binary and Ternary Magnesium Alloys Containing Gd, Nd, Zn or Y	1179
Jiří KUBÁSEK, Dalibor VOJTěCH	
Study of Mechanical Properties of Magnesium Alloy with the Addition of Strontium at Elevated Temperatures	1185
Petr LICHÝ, Michal CAGALA, Jaroslav BEÑO, Kateřina KONEČNÁ, David řÁČEK	
Microstructure Development of Ca-doped Mg–Zn Alloy during Hot Deformation	1191
Monika HRADILOVÁ, Frank MONTHEILLET, Anna FRACZKIEWICZ, Christophe DESRAYAUD, Pavel LEJČEK	
Analysis of Near-coincidence Site Lattice Boundary Frequency in AZ31 Magnesium Alloy	1198
Andriy OSTAPOVETS, Peter MOLNÁR, Aleř JÄGER, Pavel LEJČEK	
Influence of Nickel and Rare-earth Metals on Hdrogen Absorption by Magnesium-based Alloys.....	1203
Vítězslav KNOTEK, Dalibor VOJTěCH	

Characterisation of Cellular Metallic Materials manufactured by Casting Methods	1209
Vlasta BEDNÁŘOVÁ, Petr LICHÝ, Aleš HANUS, Tomáš ELBEL	
Controlled Ni-alloy Solidification and Microstructure and their Prediction via Numerical Simulation	1215
Jaromír ROUČKA, Jan ODLOŽIL, Marek KOVÁČ, Vladimír KRUTIŠ, Karel HRBÁČEK	
Microstructure Characterization and Fatigue Behavior of Beta Phase Containing γ -TiAl Alloy	1221
Martin PETRENEC, Přemysl BERAN ^a , Miroslav ŠMÍD, Alice CHLUPOVÁ, Monika KUBĚNOVÁ	
Relationship between Microstructure and Cooling Rate in Air-hardenable TiAl-based Alloy	1227
Katarína FRKÁŇOVÁ, Juraj LAPIN	
The Effect of the Laser Process Parameters in the Microstructure and Mechanical Properties of Ti6Al4V produced by Selective Laser Sintering/Melting	1234
João Batista FOGAGNOLO, Edwin SALLICA-LEVA, Eder LOPES, André Luiz JARDINI, Rubens CARAM	
Experimental Investigation of Ti–Al–V Alloy Superplastic Behavior	1239
Sergey AKSENOV, Eugene CHUMACHENKO, Irina LOGASHINA	
Creep Damage Assessment in Intermetallic Ti-46Al-8Ta Alloy using High-resolution Computed Tomography	1245
Hana STANEKOVÁ, Juraj LAPIN	
Beta Titanium Alloy Ti35Nb6Ta with Boron Addition	1252
Jaroslav MÁLEK, František HNILICA, Jaroslav VESELÝ	
Microstructure Degradation of Nickel based Single Crystal Superalloy during Creep	1257
Juraj LAPIN, Tatiana PELACHOVÁ, Marek GEBURA	
Investigation of Gamma Prime Morphology Development in Creep Exposed Nickel Base Superalloy.....	1264
Jozef ZRNIK, Pavel STRUNZ, Vadim DAVIDOV, Mauricio MALDINY	
Investigation of Heat Treatment Parameters Effect on the Microstructure and on the Mechanical Properties of a Powder Metallurgy Nickel-base superalloy	1273
Alice DUMONT, Loïc NAZÉ, Alain KÖSTER, Luc RÉMY, Jean-Yves GUÉDOU, Jean-Michel FRANCHET	
Evaluation of Structure Characteristics of Centrifugally Cast Alloy based on Ni3Al	1280
Jitka MALCHARCZIKOVÁ, Miroslav KURSA, Martin POHLUDKA, David KAŇÁK, Petr MILATA	
Comparison of Mechanical Properties and Fracture Behaviour of Co-base and Ni-base Alloys	1288
Jan SIEGL, Božena PODHORNÁ, Karel HRBÁČEK, Květa KUCHAROVÁ	
Formation of Intermetallics during Reactive Sintering Production of Fe-Al Alloys.....	1295
Pavel Novák, Alena Michalcová, Ivo Marek, Martina Mudrová, Josef Bednarčík, Karel SaksI	
Effect of Chemical Composition on the Hot Deformation Behavior of Selected Iron Aluminides	1299
Václav ŠUMŠAL, Ivo SCHINDLER, Jaromír KOPEČEK, Vladimír ŠÍMA	
The Effect of Heat Treatment on the Structure of Fe-25Al-xZr Alloys.	1305
Pavel KEJZLAR, Petr KRATOCHVÍL, Věra VODIČKOVÁ	
Description of Reaction Mechanism during Reactive Sintering of Al-Fe-Si-Ni Alloy	1311
Alena MICHALCOVÁ, Pavel NOVÁK, Ivo MAREK, Martina MUDROV, Karel SAKSL, Josef BEDNARČÍK	
Corrosion Behaviour of Ti-39Nb Alloy prepared by Powder Metallurgy	1316
Jaroslav FOJT, Sandra ŠMATOVÁ, Luděk JOSKA, František HNILICA	

Preparation of the NiTi Alloy by a Powder Metallurgy Technique.....	1323
Jaroslav ČAPEK, Dalibor VOJTĚCH, Pavel NOVÁK	
Thermomechanical Treatment of Ni-Ti-X Alloys	1329
Ivo SZURMAN, Miroslav KURSA	
Peculiarities of the Mechanical Behavior of Ultrafinegrained and Nanocrystalline Ti _{49.4} Ni _{50.6} Alloy produced by Severe Plastic Deformation	1335
Alexander LUKYANOV, Dmitry GUNDEROV, Egor PROKOFIEV, Anna CHURAKOVA, Vladimir PUSHIN	
Corrosion Behavior of DLC Coating alloyed by Titanium.....	1342
Luděk JOSKA, Jaroslav FOJT, Ladislav CVRČEK, Vítězslav BŘEZINA, Jaroslav Málek	
Feasibility Study to Develop Magnesium-Based Materials to Produce Biomedical Implants and Appliances for Turkey	1349
Cem AKÇA, Yaman ERARSLAN	
Zn-based Alloys as an Alternative Biodegradable Materials	1355
Jiří KUBÁSEK, Dalibor VOJTĚCH	
Effect of Heat Treatment on Microstructure, Properties and thermal Conductivity of CuNi ₃ Si Alloy	1362
Peter SLÁMA, Petr MOTYČKA	
Dealing with Technological Problems during the Production of Thin Foils from Special Alloys	1369
Pavel PODANÝ, Martina KOUKOLÍKOVÁ, Michal ZEMKO, Jaroslav TUČEK	
New Solders from Sn-Ni-P Family in Ribbon Form for Electronic Components Soldering.....	1375
Georgiana MELCIOIU, Viorel-Aurel ȘERBAN, Cosmin CODREAN, Florin Marian CORNEA, Cosmin LOCOVEI	
Corrosion Resistance of NdFeB Magnet Type with protective ZnAl Coating in Selected Environments	1381
Stanislav LASEK, Kateřina SKOTNICOVÁ, Miroslav KURSA	
Role of Terbium Hydride Additions in the Formation of Microstructure and Magnetic Properties of Sintered Nd-Pr-Dy-Fe-B Magnets	1387
Natalia KOLCHUGINA, Aleksandr LUKIN, Gennadii BURKHANOV, Katerina SKOTNICOVA, Henrik DRULIS, Vladimir PETROV	
Effect of Dy Addition and Heat treatment Conditions on the Magnetic Properties of (Nd,Dy)-Fe-B-based Sintered Magnets.....	1393
Vladimir MENUSHENKOV, Alexander SAVCHENKO, Miroslav KURSA, Jaromir DRÁPALA	
Macro – and Microstructure Formation in the Liquid-solid Region of Solid Solution Alloys with Eutectic, Peritectic and Monotectic Transformations at the Equilibrium and Non—equilibrium Crystallization	1398
Evgeny SIDOROV, Mikhail PIKUNOV, Jaromir DRAPALA	
Our Activities in the Regional Materials Science and Technology Centre.....	1404
Jaromír DRÁPALA, Miroslav KURSA, Miroslav GREGER, Ivo SZURMAN, Silvie BROŽOVÁ, Jitka MALCHARCZIKOVÁ, Daniel PETLÁK, Václav NÉTEK, Zdeněk NOGA, Michal MADAJ, Martin POHLUDKA	

Temperature and Time Melting Conditions for the Yundkt5ba Alloy prepared from a Categorized Charge of Preset Composition.....	1411
Igor BELYAEV ^a , Valerii STUKALOV ^b , Konstantin GRIGOROVICH ^c , Natalia KOLCHUGINA	
Tungsten-steel Composites and FGMs produced by Hot Pressing.....	1417
Jiří MATĚJČEK, Hanna BOLDYRYEVA, Vlastimil BROŽEK, Elena ČIŽMÁROVÁ, Zdeněk PALA	
Effect of Strontium on the Structure of Non-Binary Casting Alloys Al-Si.....	1423
Barbora BRYKSÍ STUNOVÁ	
Effect of Yttrium on Oxygen Content and Micostructure of Ti-Al Intermetellics.....	1430
Tomáš ČEGAN, Miroslav KURSA, Kateřina KONEČNÁ, Bedřich SMETANA, Simona ZLÁ, Vlastimil MATĚJKA, Monika ŽALUDOVA	
Effect of Annealing on Microstruetuer and Properties of Yttrium Alloyed Intermetallics Ti-47Al.....	1437
Tomáš ČEGAN, Miroslav KURSA, Kateřina KONEČNÁ, Daniel PETLÁK	
Hydrogen Storage Capacity of Mg/Mg ₂ Ni Eutectic Doped with Elements from Groups XIII AND XIV	1444
Jiří ČERMÁK, Lubomír KRÁL	
Improvement of Hydrogen Desorption Characteristics of Eutectic Mg/Mg ₂ NiH ₄ and Mg ₂ NiH ₄ by In Addition	1450
Jiří ČERMÁK, Lubomír KRÁL	
New Types of Lead-free Soders and their Properties.....	1455
Jaromír DRÁPALA, Daniel PETLÁK, Jitka MALCHARCZIKOVÁ, Vlastimil VODÁREK, Kateřina KONEČNÁ, Bedřich SMETANA, Simona ZLÁ, Gabriela KOSTIUKOVÁ, Jana SEIDLEROVÁ, Stanislav LASEK, Michal MADAJ, Aleš KROUPA, Jan URBÁNEK, Karel DUŠEK, Josef SEDLÁČEK, Valerij Eugeny SIDOROV	
Corrosion Resistance of Heat-resistance Olloys in Molten Lead Crystal at 1200 °C.....	1467
Adam HOTAŘ, Vlastimil HOTAŘ, Jan DROBEČEK	
Production and Properties and Properties oc Cast Metal with a Porous.....	1471
Aleš HANUS, Petr LICHÝ, Vlasta BEDNÁŘOVÁ	
Welding and Characterization of 5083 Aluminum Alloy	1478
Maamar HAKEM, S. LEBAILI, J. MIROUD, A. BENTALEB, S. TOUKALI	
Microstructure of TiAl-Nb Alloys after Thermal Hydrogen Processing	1485
Jan JUŘICA, Monika LOSERTOVA	
Effect of Heat Treatment on Phase Transformations in Mg-Y-(Nd)-Zn Alloys	1491
Tomáš KEKULE, Martin VLACH, Hana CÍSAŘOVÁ, Bohumil SMOLA, Ivana STULÍKOVÁ	
Microsegregation Behaviour of the Alloying Elementsin Directionally Solidified Intermetallic Ti-44Al-5Nb-0.2B-0.2C Alloy.....	1498
Alena KLIMOVÁ, Juraj LAPIN	
Influence of Repair Welding on Weld Quality of Al Alloy EN AW 6082-T6	1504
Ladislav KOLAŘÍK, Marie KOLAŘÍKOVÁ, Karel KOVANDA, Petr VONDROUŠ, Jiří DUNOVSKÝ	
Structural Phase Analysis of Nickel Superalloy MAR- M247	1511
Petr JONŠTA, Kateřina KONEČNÁ, Zdeněk JONŠTA, Miriam Gabčová, Karel Hrbáček	

Properties of Mg-Ni Based Alloys Prepared by Mechanical Alloying	1517
Monika LOSERTO VÁ, Jan JUŘICA, Petr ŠTĚPÁN, Ivana PETRAŠOVÁ, Kateřina KONEČNÁ	
Impact Raw Material for Production Zinc Oxide in Retort Furnaces.....	1521
Natália LUPTÁKOVÁ, Jarmila KEBISKOVÁ, Evgeniy ANISIMOV, Michal BENÁK, Františka PEŠLOVÁ	
Template Synthesis of Cu and Cu-Sn Nanoparticles using Carbon Foam as a Support.....	1527
Ivania MARKOVA-DENEVA, Tihomir PETROV, Ivan DENEV	
Effect of High Energy Milling and Subsequent Annealing on the Phase Composition and Magnetic Properties of Nanocrystalline Nd _{9.5} Fe ₈₄ B ₆ Cu _{0.5} Alloy	1532
Vladimir MENUSHENKOV, Ilia VIDMANOV, Igor BORDYUZHIN, Svetlana POLIKUTKINA, Alexander SAVCHENKO, Dmitriy ZHUKOV, Elina DINISLAMOVA	
The Effect of Heat Treatment on the Crystal Structure and Magnetizc Properties of Melt Spun Fe ₃ B-based Alloys.....	1537
Vladimir MENUSHENKOV, Elena SAVCHENKO, Tatiana SVIRIDOVA, Alexander SAVCHENKO	
Horn Failure Analysis from Titanium Alloy used in Ultrasonic Cavitational Process.....	1541
Octavian OANCA, Niculai PASCA, Ilare BORDEASU, Ion MITELEA	
Porosity of Ni ₃ Al-based Alloys prepared by Gravity and Centrifugal Casting	1547
Martin POHLUDKA, Tomáš ČEGAN, Jitka MALCHARCZIKOVÁ, David KAŇÁK, René FRIDRICH	
Boronizing of the Last Generation TiAl Intermetallics.....	1554
Tomáš POPELA, Dalibor VOJTĚCH	
Microstructure and Properties of Rapid Solidified Al-Si-Fe and Al-Si-Fe-Cr Alloys prepared by Centrifugal Atomization	1561
Filip PRŮŠA, Dalibor VOJTĚCH	
Selective Extraction of Cobalt from Nickel Sulphate Solutions by CYANEX 272	1567
Peter ILIEV, Vladislava STEFANOVA, Biserka LUCHEVA and Andrey TZONEVSKI	
Sstructure and Selected Corrosion Properties of Ni ₄₅ Mn ₃₉ Sn ₁₁ Co ₅ Alloy	1574
Kateřina SKOTNICOVÁ, Stanislav LASEK, Radim KOCICH	
Effect of Heat Treatment on Properties of TiNb based Alloys	1581
Petr ŠTĚPÁN, Monika LOSERTO VÁ	
The Effect of Heat Treatment on the Structure of Nb and Cr doped Fe Al Alloy	1587
Martin ŠVEC, Věra VODIČKOVÁ, Pavel HANUS	
CMT Joining of Aluminium and Magnesium Alloys in a Statistical Experiment	1592
C. TOMA, E. CICALA, P. SALLAMAND, D. GREVEY	
Small-volume Reactive Metal Alloys Prepared by Electron Beam Melting.....	1601
Martin ZOBAČ, Ivan VLČEK, Jitka ZOBAČOVÁ, Antonín REK	
Microstructural Analysis of Am ₅₀ + 3 WT.% RE Magnesium Alloy in the As-cast Condition and After Heat Treatment	1607
Agata ŽYDEK, Katarzyna BRASZCZYŃSKA-MALIK	

SYMPOSIUM F - ECONOMICS AND MANAGEMENT OF METALLURGICAL PRODUCTION.....	1612
New Approach to Blast Furnace Slabs Heating Optimization	1613
Dušan MALINDŽÁK, Martin STRAKA, Imrich KOŠTIAL, Andrzej GAZDA	
Potential Customer Typology for Entrance on Powdery Painting Market	1620
Vojtěch SPÁČIL	
Dynamic of the Business Model of Metallurgical Products Servicing and Trading Company versus the Growth of its Effectiveness and Value	1626
Jan BRZÓSKA	
Modification of Packaging Management in a Company as a Result of Involvement in a Value Network ..	1634
Lenka BRANSKÁ, Zuzana PECINOVÁ, Hana LOŠŤÁKOVÁ	
Capital Stream Flow Modeling in a Steel Mill Waste Management System	1642
Edward MICHLOWICZ, Božena ZWOLIŃSKA	
Planning and Management of Investment and Technical Development Projects under Uncertainty	1648
Michal KORECKÝ, Václav TRKOVSKÝ, Lukáš ROŽNOVSKÝ	
Perception of Attractiveness of Components of the Offer and Forms of Support to Repeat Purchases by E-shop Clients	1655
Markéta ČURDOVÁ, Hana LOŠŤÁKOVÁ	
Analysis of Nonrandom Patterns in Control Chart and Its Software Support	1662
Darja NOSKIEVIČOVÁ	
Application of Multivariate Loss Function for Assessment of the Quality of Technological Process Management	1671
Josef TOŠENOVSKÝ, Lenka MONSPORTOVÁ, Filip TOŠENOVSKÝ	
Decoupling in Supply Network of Steel Products – Dynamics of Changes.....	1676
Marzena KRAMARZ, Włodzimierz KRAMARZ	
Outsourcing and its Impact on Demand Planning	1687
Vladimira VLCKOVA, Michal PATAK	
Strategic Management Factor of MNC's Subsidiaries – Comparative Analysis of Metal Manufacturing and other Industries in the Czech Republic.....	1695
Alena KLAPALOVÁ	
Control of Dependability of Metallurgical Processes such as Logistics Chains	1702
Jiří DAVID, Milan VROŽINA, Helena NOVÁKOVÁ	
Fossil Fuels Consumption Evaluation in Blast Furnace Technology based on Different Life Cycle Impact Assessment Methods	1709
Dorota BURCHART-KOROL	
Determination of Environmental Aspects in Metallurgical Industry.....	1715
Jan VÁVRA, Marie BEDNAŘÍKOVÁ, Markéta MIKOLAJKOVÁ	
The Use of 3x3 Matrix to Evaluation of Ribbed Wire Manufacturing Technology.....	1722
Stanisław BORKOWSKI, Robert ULEWICZ, Jacek SELEJDAK, Manuela KONSTANCIAK, Dorota KLIMECKA-TATAR	

Technical-economic Prospects of Utilization of Alternative Ironmaking Techniques in Metallurgy	1729
Pavlína PUSTĚJOVSKÁ, Simona JURSOVÁ, Silvie BROŽOVÁ	
Usage of RFID Wireless Identification Technology to Support Decision Making in Steel Works	1734
Jiří DAVID, Robert FRISCHER, Mária STRÁŇAVOVÁ	
Background of Reduction of Operating Costs of Continuous Reheating Furnaces	1739
Ivo ŠPIČKA, Milan HEGER, Ondřej ZIMNÝ, Maria STRÁŇAVOVÁ	
Diagnostics of Surface Defects as Control Support in Steelworks	1746
Pavel ŠVEC, Jiří DAVID, Robert FRISCHER	
Increasing the Profitability of the Operation of Heating Furnaces using models and Data mining Systems.....	1751
Mária STRÁŇAVOVÁ, Milan HEGER, Ivo ŠPIČKA, Jiří FRANZ, Ondřej ZIMNÝ	
Influence of Used Method on the Results of Gage Repeatability and Reproducibility Study.....	1756
Pavel KLAPUT, Jiří PLURA	
Lean Principles Application in Business Logistics	1762
Roman BEDNÁR, Helena VIDOVÁ, Martin BELUSKÝ	
Companies Related to the Metallurgical Production and their Financial Health.....	1769
Dagmar ČÁMSKÁ, Jiří HÁJEK, Michal BOBEK, David KULA	
Methodical Problems Connected with Utilization of the Accounting Information for the Financial Analysis of a Metallurgical Enterprise	1776
Zdeněk SCHWARZ, Jana BUCHTOVÁ, Petra BERANOVÁ	
Impact of the Financial Crisis on Profitability and Liquidity of Companies in Metallurgical Industry in the Czech Republic	1781
David KULA, Michal BOBEK, Dagmar ČÁMSKÁ, Jiří HÁJEK	
Controlling Tools in the Light of Crisis and Securing of Business Financial Stability through Banking Instruments	1789
Pavel ŠLÉGR, Hana SCHOLLEOVÁ	
Prototyping of Production Networks in Regional Metallurgical Cluster	1796
Sebastian SANIUK, Anna SANIUK	
Reverse Logistics Porcesses in Steel Supply Chains.....	1803
Magdalena GRACZYK, Dorota BURCHART-KOROL, Krzysztof WITKOWSKI	
Innovation Management in Metallurgical Enterprises.....	1810
Sebastian BAKALARCZYK	
Consequences of Economic Downturn on Financial standing of Basic Metals Manufacturing Companies in Poland	1816
Przemysław POMYKALSKI	
Risk of Economic Activity of Metallurgical Industry Enterprises.....	1821
Sebastian BAKALARCZYK, Ryszard GRADZKI	
Application of Total Productive Maintenance Principles in Metallurgical Processes	1827
Petr BESTA, Iveta VOZŇÁKOVÁ, Šárka VILAMOVÁ, Eva ŠVECOVÁ, Milan STOCH	

Negative Elements in Blast Furnace Process	1833
Petr BESTA, Kamila JANOVSÁ, Jindřich HAVERLAND	
Selected Aspects of Clusters Initiatives in the Field of Industry in the Slovak Republic	1838
Katarína HAVIERNIKOVÁ	
Optimization of the Tolling Project of using the Methods of Network Analysis	1846
Kamila JANOVSÁ, Jiří STANĚK, Šárka VILAMOVÁ, Iveta VOŽŇÁKOVÁ, Josef KUTÁČ, Jarmila JAROŠOVÁ	
The Effect of Quality of Ferrous Burden Materials on the Quality of Pig Iron	1852
Edyta KARDAS	
Optimal cutting of input material of metallurgical operations as a linear programming problems	1859
Martin LAMPA, Andrea SAMOLEJOVÁ, Emilie KRAUSOVÁ	
Design and Implementation of the Forged Pieces Production Planning and Control Concept based on Production Paths	1864
Radim LENORT, Roman KLEPEK	
Impact of EU Funds on Building the Innovation Potential of Poland's Small and Medium Enterprises from the Metal and Machine Building Industries	1871
Renata LISOWSKA, Robert STANISŁAWSKI	
The motivation of Employees to Improving Products and Processes in the Czech Metallurgical Companies	1878
Andrea SAMOLEJOVA, Martin LAMPA, Radim LENORT	
Increase of Competiveness of Metallurgical Companies by Means of OPPI Funds	1883
Andrea SIKOROVÁ, Martin MYNÁŘ, Pavel WICHER	
Role of Innovativeness in the Development of the Metal & Machine SME Sector in Poland	1890
Robert STANISŁAWSKI, Renata LISOWSKA	
New Trends in the Management within the Metallurgy Firms	1897
Šárka VILAMOVÁ, Kamila JANOVSÁ, Roman KOZEL, Iveta VOŽŇÁKOVÁ, Eva ŠVECOVÁ	
Possible Application of Resilience Concept in Metallurgical Supply Chains	1904
Pavel WICHER, Radim LENORT, Emilie KRAUSOVÁ	
Map of Logistics Processes as a Part of Creating an Enterprise Supply Chain in the Metallurgical Company	1914
Krzysztof WITKOWSKI, Maja KIBA-JANIAK, Sebastian SANIUK	
The Choice of Method of Investment Projects Financing	1920
Dana DLUHOŠOVÁ	