

The timetable the 168th ISIJ Meeting

	September 24 (Wed)		September 25 (Thu)		September 26 (Fri)	
	a.m.	p.m.	a.m.	p.m.	a.m.	p.m.
Room1 E & S Bldg. 2nd Fl. ES021	---	Young engineer session of coke-making 1-2[Coke and coal [1-11]] (13:00-17:00)	Carbon composite iron ore [55-58] (10:00-11:20)	Fundamentals of blast furnace 1-2-3 [59-67] (13:00-16:20)	Young engineer session of ironmaking/ Fundamentals of sinter [113-118] (9:30-11:10)	---
Room2 E & S Bldg. 2nd Fl. ES022	Stainless and high alloy making/Inclusion [12-17] (10:00-12:10)	Hot metal treatment-converter/ Recycling of waste [18-24] (13:30-16:00)	Properties of liquid materials/ CO ₂ reduction [68-74] (9:30-12:00)	Slag/Dust treatment 1-2-3 [75-83] (13:20-16:40)	---	---
Room3 E & S Bldg. 2nd Fl. ES024	Interfacial properties and phenomena of high-temperature melts 1-2 [25-32] (9:00-12:10)	Interfacial properties and phenomena of high-temperature melts 3-4-5 [33-43] (13:10-17:10)	Steel refining and refractories 1-2 [84-89] (9:50-12:00)	Steel refining and refractories [90-98] (13:00-16:20)	Present issues of and perspective for facilitation of slag formation with lime 1-2 [119-125] (9:20-11:50)	Present issues of and perspective for facilitation of slag formation with lime 3/Thermodynamics [126-133] (13:00-15:50)
Room4 E & S Bldg. 2nd Fl. ES025	Transport phenomena [44-47] (10:30-11:50)	Recent advancement of modeling for solidification 1-2 [48-54] (13:00-15:30)	Conventional continuous casting/ Continuous casting-Solidification [99-104] (9:50-12:00)	Solidification and structure control 1-2 [105-112] (13:00-15:50)	Electromagnetic processing of materials 1-2 [134-139] (9:50-12:00)	Introduction of research topics in novel processing forum [140-144] (13:00-14:40)
Room5 IB Building 1st Fl. IB015	Impact of energy revolution on steel industry and desirable ironmaking process (10:00-17:00)[1,000yen]		Process for high quality sinter on the basis of effective utilization of lower oxidation state ferrous materials (9:30-17:15)[1,000yen]		---	---
Room6 IB Building 1st Fl. IB014	Green energy (hydrogen) production and utilization/Effect of iron- and steelmaking slags on environmental preservation [145-151] (9:20-11:50)	Smelting reduction/ Utilization of waste heat and materials [152-157] (13:00-15:10)	Technology and culture of iron and metals in Tokai areas Japan (10:00-16:50)[2,000yen]		Cultural property 1-2 [158-163] (9:30-11:40)	---
Room7 IB Building 1st Fl. IB013	---	Disipation and effective utilization of phosphorus in iron and steelmaking process (13:00-17:00)[1,000yen]	---	Energy saving by advanced steel products and quantifying the contribution (13:00-17:00)[1,000yen]	Pyro-metallurgy based metals separating and recycling -3 (9:00-11:50)[1,000yen]	---
Room8 School of Eng., Bldg. 2 3rd Fl. 232	---	---	---	(D) The future prospects of system modeling technologies based on data in steel plants [D1-5] (13:00-16:00)	Control/System [164-169] (9:30-11:40)	Instrumentation [170-173] (13:00-14:20)
Room9 School of Eng., Bldg. 2 4th Fl. 243	Control technology for free cutting-9 1-2 [174-180] (9:30-12:00)	---	Modeling of various phenomena in metal forming and its application 1-2 [181-186] (9:20-11:30)	(D) Trends in rolling technology enabling the production with accurate control of geometry, profile and flatness [D6-11] (13:00-16:55)	Cooling/Oxidation scale [197-202] (9:50-12:00)	Rolling [203-206] (13:00-14:20)
Room10 School of Eng., Bldg. 2 4th Fl. 242	---	---	---	Lubrication and surface/Joining [187-196] (13:10-16:50)	---	---
Room11 School of Eng., Bldg. 2 2nd Fl. 221	---	---	Electrical steel 1-2 [271-276] (9:30-11:40)	Stainless steels 1-2 [277-284] (14:00-16:50)	Stainless steels 3-4 [298-303] (10:00-12:10)	---
Room12 School of Eng., Bldg. 2 2nd Fl. 222	Precipitation/Structure formation [207-213] (9:00-11:30)	ISIJ and JIM joint session Titanium and titanium alloys 1-2 [J1-8] (13:00-15:50)	ISIJ and JIM joint session Titanium and titanium alloys 3-4-5-6 [J9-23] (9:00-15:30)		Structure steel, steel plate and pipe [304-308] (9:00-10:40)	---
Room13 School of Eng., Bldg. 1 2nd Fl. 121	Deformation and fracture in advanced steels (9:00-16:50)[Charge-free]		Heterogeneous structure control: Towards innovative development of metallic structural materials (9:30-17:00)[Charge-free]		Feed-back to the material design based on advanced characterization and modeling (9:00-16:00)[Charge-free]	
Room14 School of Eng., Bldg. 1 3rd Fl. 131	Hydrogen embrittlement 1-2 [214-220] (9:30-12:00)	Creation of hydrogen-passive surface on steels for prevention of hydrogen embrittlement III (13:10-17:00)[Charge-free]	Effect of hydrogen on mechanical property of steels and its evaluation (9:30-16:45)[1,500yen]		Deformation behaviour 4-5 [309-316] (9:00-11:50)	Present status and trends in mathematical modeling on corrosion processes (13:00-16:00)[1,000yen]
Room15 School of Eng., Bldg. 1 3rd Fl. 132	Ferritic heat resistant steels 1-2 [221-228] (9:00-11:50)	Austenitic heat resistant steels/ Ni based alloys [229-238] (13:00-16:30)	Innovation in steel science via 4D imaging (10:00-15:50)[Charge-free]		Hydrogen embrittlement 3-4 [317-323] (9:30-12:00)	Hydrogen embrittlement 5-6 [324-331] (13:00-15:50)
Room16 School of Eng., Bldg. 1 4th Fl. 142	Deformation behaviour 1-2 [239-246] (9:00-11:50)	Deformation behaviour 3/Fatigue [247-255] (13:00-16:10)	Simulation/ Calculation-Modeling [285-292] (9:00-11:50)	Microscopic aspect of fracture in bainitic & martensitic steels (13:00-17:00)[1,000yen]	Diffusional transformation 1-2 [332-339] (9:00-11:50)	Properties evaluation/ Nitrogen steel [340-346] (13:00-15:30)
Room17 School of Eng., Bldg. 1 4th Fl. 143	Cold-rolled+Hot-rolled steel sheet/TRIP steel [256-263] (9:00-11:50)	Strengthening mechanism/ Martensite [264-270] (13:00-15:30)	Fracture [293-297] (10:00-11:40)	Microbiological acceleration of steel corrosion (13:00-17:00)[Charge-free]	Resistance to corrosion/ Mechanism of corrosion and corrosion protection [347-352] (10:00-12:00)	Hot dip coating/ Functional treatment [353-359] (13:00-15:30)
Room18 IB Building 1st Fl. IB011	---	Crystal structure analysis [360-363] (14:30-15:50)	(Int.) Monitoring and analysis methods in a process for manufacturing steel [Int.1-9] (8:55-12:30)	Development of digital tutorials for sophisticated chemical techniques in steel analyses (13:30-16:00)[Charge-free]	Precipitate & inclusion analysis/ Elemental analysis [364-370] (9:30-12:00)	(D) Fouling on materials surfaces and its evaluation and characterization - relating to biofouling [D12-17] (13:00-15:30)
JIM RoomF Liberal Arts & Sci. Main Bldg. 2nd Fl. C23	---	---	---	---	ISIJ and JIM joint session Ultrafine grained materials-fundamental aspects for ultrafine grained structures- 1-2 [J24-29] (10:00-12:10)	---
		Banquet (18:30-20:30 ANA Crowne Plaza Hotel Grand Court Nagoya)[10,000yen]	Poster Session for Students (12:00-15:00 Toyoda Auditorium 1FL) ISIJ Beer Party (17:30-19:00 Toyoda Auditorium 1FL)			

[]:Lecture Number
():Lecture Time
:Symposium Please ask to each of symposium room desks Directly.

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■ Board Meeting: Process evaluation and material characterization Sept.25(Thu) 16:00-17:00 Room18

Program of the 168th ISIJ Meeting (Sep. 24-26, 2014)

Instrumentation, Control and System Engineering

Lecture No.			
Discussion Sessions	Title	Speaker	Page
The future prospects of system modeling technologies based on data in steel plants			
D1	Needs for system modeling technologies in steel plants	H. Kobayashi	• • • 554
D2	Simulation-based modeling by evolutionary computation	I. Ono	• • • 556
D3	Macroscopic evaluation model of a policy for production planning	H. Tamaki	• • • 560
D4	Utilization of data based on causal relation models	I. Hatono	• • • 564
D5	Sales strategy extraction from maintenance records	S. Kurahashi	• • • 568

Processing for Quality Products

Lecture No.			
Discussion Sessions	Title	Speaker	Page
Tends in rolling technology enabling the production with accurate control of geometry, profile and flatness			
D6	Semi-endless rolling and control technology of thin strip hot-rolling	N. Shimoda	• • • 572
D7	Development of strip shape meter in hot rolling	S. Kanemori	• • • 576
D8	Controlling technology for strip shape in multiple-high mill	A. Aizawa	• • • 580
D9	Gauge meter thickness concerned with dynamic deformation for hot plate mills	T. Wada	• • • 584
D10	T-bar production technology by universal rolling method	Y. Takashima	• • • 587
D11	Investigation and improvement on the pipe wall thickness of mandrel mill rolling	T. Okamoto	• • • 591

Process Evaluation and Material Characterization

Lecture No.			
Discussion Sessions	Title	Speaker	Page
Fouling on materials surfaces and its evaluation and characterization – relating to biofouling			
D12	Production of desktop LBR and biofilm formation behavior	N. Nishi	• • • 595
D13	Silane coating for biofouling control and its evaluation	K. Sano	• • • 597
D14	Quantitative analysis of biofilm by <i>16S rRNA</i> clone of bacteria	A. Ogawa	• • • 599
D15	Two kinds of composites and their biofouling behaviour in a LBR	Y. Nakanishi	• • • 602
D16	Restoration of seaweed beds using steelmaking slag and compost: effect of iron on the growth of marine algae	M. Yamamoto	• • • 604
D17	Analysis of biofilms formed on various plastics by means of AFM	N. Hirai	• • • 606

Program of the 168th ISIJ Meeting (Sep. 24-26, 2014)

International Organized Sessions

Monitoring and analysis methods in a process for manufacturing steel 1

8:55 ~ 9:00

Opening address Y. Deguchi (The Univ. of Tokushima)

9:00 ~ 10:45 **Chairperson: R. Yoshiie [Nagoya Univ.]**

9:00 ~ 9:30

Int.-1 (Invited Lecture)Quantitative method for laser induce-breakdown spectroscopy

Tsinghua Univ. ○Z. Wang

. . . 608

9:30 ~ 10:00

Int.-2 (Invited Lecture)Application of laser-induced breakdown spectroscopy to in-situ and remote analysis of molten steel

Shenyang Institute of Automation (SIA), Chinese Academy of Sciences (CAS) ○L. Sun

. . . 610

10:00 ~ 10:15

Int.-3 The measurement of various molecules of pyrolysis gas of coal by using VUV-SPI-TOFMS&FT-IR

Nippon Steel & Sumitomo Metal ○N. Tsuji · Y. Tobu · M. Nishifuji

. . . 612

10:15 ~ 10:30

Int.-4 Effect of preheating temperature on self cleaning reaction of submerged entry nozzle during continuous casting

POSCO ○J. Kim · D. Jeong · G. Bae · S. Yoon · Y. Kim

. . . 615

10:30 ~ 10:45

Int.-5 The utilization of open-air LIBS measurement for steel-accompanying substances as national stockpile

Tohoku Univ. ○S. Kashiwakura · K. Wagatsuma

. . . 616

Monitoring and analysis methods in a process for manufacturing steel 2

11:00 ~ 12:30 **Chairperson: S. Kashiwakura [Tohoku Univ.]**

11:00 ~ 11:30

Int.-6 (Invited Lecture)Quantitative analysis of viscous liquids with LIBS: limit of detection, matrix effect and spectral line selection

Université de Lyon ○J. Yu

. . . 618

11:30 ~ 12:00

Int.-7 (Invited Lecture)Development of laser analysis for nuclear fuel management

Japan Atomic Energy Agency ○I. Wakaida · K. Akaoka · M. Miyabe · A. Khumaeni · H. Ohoba · C. Ito

. . . 619

12:00 ~ 12:15

Int.-8 LIBS measurement for gaseous trace elements in coal combustion gas

Nagoya Univ. ○R. Ishikawa · R. Yoshiie · Y. Ueki · I. Naruse

. . . 622

12:15 ~ 12:30

Int.-9 Quantitative elemental detection of LIBS and its applications to industrial processes

The Univ. of Tokushima ○Y. Deguchi

. . . 625

Program of the 168th ISIJ Meeting (Sep. 24-26, 2014)

High Temperature Processes

Lecture No.	Title	Speaker	Page
Plenary Session			
Young engineer session of coke-making 1			
1	Evaluation of corrosion condition inside surface of COG supply piping	Y. Nagashima	• • • 627
2	Development of repair for center part damaged hole in coking chamber wall	Y. Kimura	• • • 628
3	Profile determination method of coke dry quenching chamber with 3D laser scanner	H. Choshi	• • • 629
Young engineer session of coke-making 2			
4	Optimization by control of carbon incineration revolution in Oita No.5 coke oven battery	K. Naoyuki	• • • 630
5	Dilatation behavior of non or slightly caking coal	M. Nagayama	• • • 631
6	The effect of the various reagents on the fluidity of coal in the thermoplastic phase	Y. Maeta	• • • 632
Coke and coal			
7	The evaluation of the influence factor for permeation distance of plastic coal	K. Hanada	• • • 633
8	Effect of coal weathering on permeation distance	Y. Dohi	• • • 634
9	Influence of bulk density and volatile matter of coal on coke pushing force	T. Nakagawa	• • • 635
10	Effect of the coal particles size on the briquette and ferrocoke strength	H. Fujimoto	• • • 636
11	Utilization of residue coal in hyper-coal process as a raw material for coke	T. Shishido	• • • 637
Stainless and high alloy making			
12	Observation of oxides formation for Fe-C-Cr alloy at high carbon region by oxygen top blowing	X. Gao	• • • 638
13	Three-phase flow in gas-stirring ladle by physical modeling and a CFD-PBM coupled model	B. Li	• • • 639
14	Oxygen contents in molten Ni associated with slag containing NiO	Y. Kobayashi	• • • 640
Inclusion			
15	Direct measurement of agglomeration force exerted between alumina particles in molten steel	K. Sasai	• • • 641
16	Characteristics of inclusions in Al-Ti complex deoxidized steel with calcium treatment	G. Li	• • • 642
17	Direct numerical simulation of inclusion cluster floating behavior in molten steel using lattice Boltzmann method	Y. Wang	• • • 643
Hot metal treatment • converter			
18	Morphology and distribution of iron droplets in desulfurization slag	Y. Masaki	• • • 644
19	Technique of powder blasting on hot metal desulfurization in mechanical stirring process	Y. Nakai	• • • 645
20	Numerical simulation of stirring behavior and desulfurization efficiency in KR method using particle method	K. Matsuda	• • • 646
21	Exploration of limestone slagging steelmaking theory	L. Hong	• • • 647
Recycling of waste			
22	Thermodynamic evaluation on the refinability of end-of-life nickel- and cobalt-base superalloys with remelting process	X. Lu	• • • 648
23	Study on volatilization kinetics of lead in Zn-Pb-Bearing dusts pellets containing carbon	D. Wang	• • • 649
24	Optimization of cooling and separation process of electric arc furnace slag to concentrate FeO	S. Jung	• • • 650
Interfacial properties and phenomena of high-temperature melts 1			
25	Interfacial tension between molten steel and molten oxides by using oscillating drop technique	M. Watanabe	• • • 651
26	Thermophysical property measurements of high temperature oxide melts using an electrostatic levitation furnace in the ISS	I. Takehiko	• • • 652
27	Investigation of Slag/molten steel interfacial tension measurement using numerical simulations	S. Ueno	• • • 653
28	(Keynote Lecture) Evolution of convection in an electromagnetically-levitated molten metal droplet	J. Lee	• • • 654
29	(Keynote Lecture) Thermophysical properties of liquid and supercooled CaO-Al ₂ O ₃	F. Kargl	• • • 655
Interfacial properties and phenomena of high-temperature melts 2			
30	Wettability and boundary reaction of carbon substrates to CaO-SiO ₂ -Al ₂ O ₃ -MgO slags	N. Saito	• • • 656
31	Development of precise surface tension measurement for high viscous melts using maximum bubble pressure method	C. Iseki	• • • 657
32	Surface tension of molten aluminum brazing materials	S. Ozawa	• • • 658

Program of the 168th ISIJ Meeting (Sep. 24-26, 2014)

Interfacial properties and phenomena of high-temperature melts 3

33	Measurement of interfacial tension between liquid Pb and molten salt based on profile of floating droplet	M. Nakamoto	• • •	659
34	Understanding properties of solid-liquid interface from atomistic point of view	Y. Shibuta	• • •	660
35	Solidification of an undercooled electromagnetically-levitated CuCo droplet under a static magnetic field	K. Tsubasa	• • •	661

Interfacial properties and phenomena of high-temperature melts 4

36	AlN crystal growth by interfacial property between molten iron and solid alumina	H. Goto	• • •	662
37	Wettability of low melting metals on iron substrate with laser-induced surface fine crevasse structure	M. Nakamoto	• • •	663
38	Structure analysis of high-temperature-melts by using laser heated zone-melting method	A. Mizuno	• • •	664
39	Fe-diffusion in liquid Fe and Fe-C melts	F. Kargl	• • •	665

Interfacial properties and phenomena of high-temperature melts 5

40	Viscosity of fluoride containing calcium aluminosilicate melt	S. Sukenaga	• • •	666
41	Noncontact density measurements of liquid SUS316, Fe and Ni	M. Watanabe	• • •	667
42	Thermal conductivity measurements on molten aluminosilicates containing fluorine ion by hot-wire method	H. Matsui	• • •	668
43	Nitrogen solubility of fluorine containing mold flux	N. Saitou	• • •	669

Transport phenomena

44	Reaction between solid MnO-SiO ₂ -FeO oxide and solid Fe-Mn-Si alloy by heat treatment at 1473K	K. Kim	• • •	670
45	Effect of the slag contents on dephosphorization rate of molten steel	M. Ohta	• • •	671
46	Growth rate of copper sulfide precipitates in solid low carbon steel	K. Urata	• • •	672
47	3-dimensional numerical analysis of metal emulsion using multiphase particle method	H. Takai	• • •	673

Recent advancement of modeling for solidification 1

48	Application of large-scale molecular dynamics simulation to studies of solidification	Y. Shibuta	• • •	674
49	Introduction of thermodynamic-fluctuation-based nucleation to phase-field model	M. Ode	• • •	675
50	Quantitative phase-field simulation of solidification microstructures in steels	M. Ohno	• • •	676
51	Polycrystal competitive growth simulations during directional solidification by phase-field method	T. Takaki	• • •	677

Recent Advancement of modeling for solidification 2

52	Cellular automaton simulation of dendrite growth using multi-grid method	Y. Natsume	• • •	678
53	Analysis for characteristic of solid-liquid co-existing zone based on percolation model	K. Ohsasa	• • •	679
54	Formation mechanism of the stretched center-line segregation	T. Murao	• • •	680

Carbon composite iron ore

55	Reduction mechanism of iron ore and carbon composite by volatile matters in biomass char at low temperature	Y. Takyu	• • •	681
56	Reaction behavior and modeling of iron oxide agglomerate (Development of RCA, reactive coke agglomerate -6)	K. Nishioka	• • •	682
57	Evaluation of the strength properties of carbon composite iron ore briquette	S. Son	• • •	683
58	A strength enhancement of carbon composite iron ore pellet before and after reaction	H. Kim	• • •	684

Fundamentals of blast furnace 1

59	Effect of wettability on shape of liquid holdup among spheres.	T. Kon	• • •	685
60	Characterization of interface shape of melt in poor wettability packed bed	S. Natsui	• • •	686
61	Dynamic contact angle of droplet on non-smooth solid surface	S. Ueda	• • •	687

Fundamentals of blast furnace 2

62	Effect of mixed small coke on permeability in lower part of blast furnace	Y. Kashihara	• • •	688
63	Effect of mixed carbonaceous materials ratio on apparent viscosity of slag packed bed	Y. Morita	• • •	689
64	In-situ observation of the cohesive zone by using the blast furnace simulator with various operating conditions	S. Min	• • •	690

Program of the 168th ISIJ Meeting (Sep. 24-26, 2014)

Fundamentals of blast furnace 3

- 65 Effect of CH₄ injection point on combustion efficiency of pulverized coal A. Murao . . . 691
66 Dispersion characteristics of laterally injected fluid into main stream in packed bed M. Kamata . . . 692
67 The effect of coke quality on the change of coke mean size in the blast furnace J. Lee . . . 693

Properties of liquid materials

- 68 Relationship between structure of borosilicate melts and their thermal conductivity Y. Kim . . . 694
69 Solid-state ¹⁷O NMR for Al₂O₃-SiO₂-R₂O (R=Li, Na, K, Rb, Cs) and Al₂O₃-SiO₂-R'O (R'=Be, Mg, Ca, Sr, Ba) glasses K. Kanehashi . . . 695

CO₂ reduction

- 70 CO gas production from CO₂ gas by electrolysis in molten salt F. Matsuura . . . 696
71 Conversion of CO₂ to CO by electrolysis in molten LiCl-Li₂CO₃ T. Wakamatsu . . . 697
72 Reduction of hematite by silicon base compounds N. Ishikawa . . . 698
73 Investigation on the carbonation kinetics of ladle refining slags J. Yu . . . 699
74 Reduction of CaTiO₃ by molten salt electrolysis H. Hada . . . 700

Slag • Dust treatment 1

- 75 Thermodynamic examination on ettringite formation from slags A. Harashima . . . 701
76 Effect of fluorine on morphology of phosphorus containing phase in steelmaking slag T. Miki . . . 702
77 Effect of slag basicity on the constituent phase and chromium elution behavior H. Fukaya . . . 703

Slag • Dust treatment 2

- 78 Production of low absorption aggregate with blast furnace slag continuous solidification equipment (Development of continuous blast furnace slag solidification process for coarse aggregate-1) H. Tobo . . . 704
79 Water-cooling condition for mold with blast furnace slag continuous solidification equipment (Development of continuous blast furnace slag solidification process for coarse aggregate-2) Y. Ta . . . 705
80 Active cement clinker derived from steel slag by modification and magnetic separation M. Zhang . . . 706

Slag • Dust treatment 3

- 81 canceled
82 Recycling behavior of mill scale in electric arc furnace S. Saberifar . . . 708
83 Effect of binary basicity on phosphate enrichment in CaO-SiO₂-FeO-Fe₂O₃-P₂O₅ slags M. Guo . . . 709

Steel refining and refractories 1

- 84 The effect of microstructure to slag corrosion resistance in MgO-C bricks Y. Miyamoto . . . 710
85 Effects of FeO and MnO on the dissolution rate of alumina brick into CaO-SiO₂-Al₂O₃-MgO system slag Y. Hino . . . 711
86 Aluminum reduction rate of solid MgO and MgO in liquid slag T. Miki . . . 712

Steel refining and refractories 2

- 87 Dissolution behavior of Mg from refractory into molten steel deoxidized by Al S. Kim . . . 713
88 Conditions of Ti₂O₃, MgTi₂O₄ and MgAl₂O₄ formation in Ti-Mg-Al deoxidation of molten iron H. Ono . . . 714
89 Investigation on a abrasion of MgO-C brick by metal steel M. Shiohama . . . 715

Steel refining and refractories 3

- 90 Inclusion removal by bubble floatation in swirling flow S. Shimasaki . . . 716
91 Influence of molten steel on inner bore damage of continuous casting nozzle A. Sasaki . . . 717
92 Development of submerged entry nozzle generating swirling flow M. Ogata . . . 718

Steel refining and refractories 4

- 93 Acoustic emission study for bending fracture of MgO-C bricks in #-point bending test K. Kageyama . . . 719
94 Development of evaluation of material strength properties at high temperature for unburned refractories K. Kawamoto . . . 720
95 Manufacture of precastblcks at YAWATA WORKS S. Sakaki . . . 721

Steel refining and refractories 5

- 96 Damage mechanism of bottom-blown nozzle on the hot metal pretreatment furnace in Kobe works K. Adachi . . . 722
97 Introduction of out-of-furnace desulfurizing equipment into stainless steelmaking process T. Yoshino . . . 723
98 Investigation of the wear mechanism of Al₂O₃-ZrO₂-C SN plate material by ca treated steel. Y. Kato . . . 724

Program of the 168th ISIJ Meeting (Sep. 24-26, 2014)

Conventional continuous casting

99	Measurement and formulation of friction force between mold and solidified shell	T. Odagaki	• • •	725
100	Lubrication phenomena in upper mold region obtained by infiltration model using reynolds equation	K. Okazawa	• • •	726
101	Heat transfer characteristics of mold powder in continuous casting mold	T. Suzuki	• • •	727

Continuous casting • Solidification

102	Effect of crystal phase included in source material on mould flux crystallization	Y. Tsukaguchi	• • •	728
103	High pressure spray cooling characteristics on moving high temperature steel plate	H. Niitani	• • •	729
104	Deformation behavior analysis of void during reduction of steel	S. Nagai	• • •	730

Solidification and structure control 1

105	Influence of mechanical vibration on morphology of solidified structure.	E. Aritaka	• • •	731
106	Effect of solidification structure on solidification cracking in Al-Cu alloy	Y. Yoshida	• • •	732
107	Analysis of initial solidification grain changing crystallographic orientation	Y. Kataoka	• • •	733
108	Analysis of crystallographic orientation of austenite grains in as-cast 0.2%C steel	N. Ohura	• • •	734

Solidification and structure control 2

109	Influence of Mn and Si to motion velocity of δ/γ interface in the massive-like transformation	T. Nishimura	• • •	735
110	Driving force at δ/γ interface for the massive-like transformation	T. Nishimura	• • •	736
111	Interaction between solid grains in semisolid with high solid fraction	S. Morita	• • •	737
112	Effect of freezing range on formation of channel segregation	T. Sawada	• • •	738

Young engineer session of ironmaking

113	The effect of blast moisture on shaft furnace operation	Y. Iwai	• • •	739
114	Higher steam coal ratio in the operation with high pulverized coal injection.	S. Ozeki	• • •	740
115	Effort to reduce the usage of agglomeration agent on Kakogawa No.1 sinter plant	Y. Yamano	• • •	741

Fundamentals of sinter

116	Effect of increase in hydrogen concentration on reduction behavior of mineral phases in iron ore sinter	H. Wakabayashi	• • •	742
117	Analysis of the initial process of calcium ferrite formation	Y. Fujioka	• • •	743
118	Effect of Al_2O_3 addition on liquid area for the CaO-FeO _x -SiO ₂ system at 1523 K	H. Nishi	• • •	744

Present issues of and perspective for facilitation of slag formation with lime 1

119	Thermodynamics of solid solution between di-calcium silicate and tri-calcium phosphate at 1823 and 1873 K	M. Zhong	• • •	745
120	Investigation on phosphorus-concentrated phase in low basicity steelmaking slag	Y. Uchida	• • •	746
121	Thermochemistry of CaO-SiO ₂ -P ₂ O ₅ -Fe _x O dephosphorization slag toward effective use of solid CaO	K. Miwa	• • •	747

Present issues of and perspective for facilitation of slag formation with lime 2

122	Temperature dependence of dissolution rate of 2CaO • SiO ₂ into molten CaO-FeO-SiO ₂ slag	T. Sadamoto	• • •	748
123	Improvement of hot metal desulfurization by controlling flux addition in mechanical stirring process	T. Sugitani	• • •	749
124	Observation of dissolution behavior of quick lime with CO ₂ into molten slag	N. Maruoka	• • •	750
125	Effect of flux addition method on hot metal dephosphorization	M. Miyata	• • •	751

Present issues of and perspective for facilitation of slag formation with lime 3

126	Acceleration of dissolution rate of solid with ultrasound vibration	K. Okumura	• • •	752
127	Effects of additives (Al_2O_3, MgO, CaF_2) on the dissolution rate of solid CaO into calcium silicate slags	F. Kirihara	• • •	753
128	Evaluation and modeling for rheological behavior of dual-phase fluids	N. Saito	• • •	754
129	Determination of thermal conductivities for dicalcium silicate bearing solid solutions	Y. Kobayashi	• • •	755

Thermodynamics

130	The reaction between iron oxide and gangue minerals in ore	A. Kawakami	• • •	756
131	Activities of P ₂ O ₅ in Ca ₂ SiO ₄ -Ca ₃ P ₂ O ₈ solid solutions determined with a gas-slag-metal equilibrium method	S. Taihei	• • •	757

Program of the 168th ISIJ Meeting (Sep. 24-26, 2014)

132 Oxygen solubility in Fe-Nd alloy	T. Oshino	. . .	758
133 Measurement of carbon solubility in liquids phase of Ni-B-C system	T. Kokudai	. . .	759
Electromagnetic processing of materials 1			
134 Characteristics of newly generated lime at high temperature	J. Feng	. . .	760
135 Recrystallized microstructure in duplex stainless steel by magnetic field annealing	H. Fujii	. . .	761
Electromagnetic processing of materials 2			
136 Evaluation of electrochemical reaction rate enhancement by imposing ultrasound on aqueous solution	Y. Yamakado	. . .	762
137 Effect of electromagnetic vibration on Mn distribution in high manganese steel	F. Murakami	. . .	763
138 Solute distribution in Sn-Pb alloy solidified under imposition of oscillating electromagnetic field	A. Maruyama	. . .	764
139 Concentration boundary-layer thickness under imposition of vibrating electromagnetic field	Y. Yamamoto	. . .	765
Introduction of research topics in novel processing forum			
140 Researches on fundamentals and application of microwave processing to materials and environmental technology (2014)	N. Yoshikawa	. . .	766
141 Heating behaviors of SiC powders by microwave	H. Sugawara	. . .	767
142 Effect of ultrasound on the liquid-liquid dispersion behavior	M. Takama	. . .	768
143 The great east japan earthquake disaster reconstruction by best mix of technologies	K. Kashimura	. . .	769
144 The activity of In-Process technology research group	T. Kozuka	. . .	770
Environmental, Energy and Social Engineering			
Lecture No.			
Plenary Session	Title	Speaker	Page
Green energy (hydrogen) production and utilization			
145 Change of electrode structure in CO ₂ electrolysis using YSZ solid electrolyte and analysis by AC impedance method		Y. Shiomi	. . . 771
146 Effect of anode gas condition on the Nyquist diagram of high temperature CO ₂ electrolysis.		Y. Kashiwaya	. . . 772
147 Effect of temperature on the Nyquist diagram of high temperature CO ₂ electrolysis.		Y. Kashiwaya	. . . 773
148 Development of rapid carbonization process of biomass by using heat storage material		T. Nakamura	. . . 774
Effect of iron- and steelmaking slags on environmental preservation			
149 Influence of soil size on the application effect of fertilizer made by steelmaking slag to paddy field		X. Gao	. . . 775
150 Mechanism of Fe dissolution from steelmaking slag-discussion based on valence of iron ion		R. Inoue	. . . 776
151 Effect of organic acid on dissolution of steelmaking slag into seawater		F. Katabe	. . . 777
Smelting reduction			
152 Reduction experiments of the steelmaking slag using DC smelting arc furnace at MEFOS		T. Harada	. . . 778
153 The slag reduction experiments using 100t scale DC arc furnace in Muroran works		H. Hirata	. . . 779
154 Introduction of material and energy flows in ferronickel smelting process		B. Li	. . . 780
Utilization of waste heat and materials			
155 Waste heat recovery in steelworks by thermoelectric generating system		T. Kuroki	. . . 781
156 Capture characteristics of gaseous mercury by carbonized waste in oxidizing atmosphere		Y. Ueki	. . . 782
157 Recycle of floating oil in rolling mill		T. Kikkawa	. . . 783
Cultural property 1			
158 Outline of the collection associated with iron making from the exhibition room of faculty of engineering, kyushu university		T. Nakanishi	. . . 784
159 Features and origins of iron smelting technology in ancient mongolia		T. Sasada	. . . 785
160 Over-saturated oxygen in steel (Wa-tetu) produced by Tataru and Ookaji without deoxidation process		K. Nagata	. . . 786
Cultural property 2			
161 The restration of Japanese Iron Nails for wooden structure -composition and the role on non-metallic inclusions		Y. Furunushi	. . . 787
162 Analysis of crystallographic structure of a Japanese matchlock gun using pulsed neutron imaging		M. Tanaka	. . . 788
163 Metallographic structure information observation of Japanese sword and thai-coin by bragg-edge analysis of neutron transmission spectroscopy		Y. Shiota	. . . 789

Program of the 168th ISIJ Meeting (Sep. 24-26, 2014)

Instrumentation, Control and System Engineering

Lecture No.	Title	Speaker	Page
Plenary Session			
Control			
164	Development of a dynamic control model in BOF using off gas data	K. Iwamura	790
165	Learning controller for prediction model of rolling load in hot strip mill	S. Kuyama	791
166	Improvement methods of reverse cold mill rolling force control accuracy	D. Zhu	792
System			
167	Scheduling algorithm for product shipping of steel works	S. Tomiyama	793
168	Development and implementation of virtual trial run system in PLC software production	T. Yasunobu	794
169	Development of prediction system for sticker in coke oven	Y. Abe	795
Instrumentation			
170	Measurement and indexation of coke oven wall irregularity	M. Sugiura	796
171	Application of concave and convex defects inspection system on steel sheets to continuous annealing line by magnetic leakage flux testing method	Y. Matsufuji	797
172	System for measuring thickness of multi layers using eddy current probe (Laboratory test result)	J. Yotsuji	798
173	Improvement of detection limit in cyclic stress amplitude by smart stress-memory patch	T. Shiraiwa	799

Processing for Quality Products

Lecture No.	Title	Speaker	Page
Plenary Session			
Control technology for free cutting-9 1			
174	(Invited Lecture)Temperature measurement in cutting by infrared radiation pyrometer	T. Ueda	800
175	Analysis of chip formation for carbon steels at initial stage of tool contact with FEM	M. Hashimura	801
176	Study of power slide condition in lateral vibration cutting (Development of CAE for plasticity processing system with ultrasonic vibration -28)	T. Yoshida	802
Control technology for free cutting-9 2			
177	Effect of alloying elements on tool wear in machining of hardened steel	T. Iwasaki	803
178	Drilling machinability of h-BN precipitated Fe-Mn-Si-Cr shape memory alloy	S. Emura	804
179	Effect of Si addition on boundary failure of turning tool	Y. Sakai	805
180	Effects of strengthening mechanisms and microstructures on machinability of high strength microalloyed steels.	K. Takashi	806
Modeling of various phenomena in metal forming and its application 1			
181	Numerical analysis of shearing behavior in centrifugal casting using particle method.	N. Hirata	807
182	Prediction of ductile fracture in sheet metal forming using the ellipsoidal void model	K. Komori	808
183	Prediction of ductile fracture for steel with surface micro defect	N. Yukawa	809
Modeling of various phenomena in metal forming and its application 2			
184	Development of CAE platform by 2D-CAD (development of CAE platform for industrial education -3)	T. Yoshida	810
185	Study for mechanical anisotropy of rolled strip (Development of simulator for working history -5)	T. Yoshida	811
186	Finite element analysis on V-Bending of thick high strength steel	K. Hayakawa	812
Lubrication and surface			
187	Effect of jet merger on the flatness of slab surface of scarfing machine	B. Li	813
188	Effect of grain size on the tribological behavior of pure Fe under lubrication	K. Toda	814
189	Effects of oxidation progress on self-lubricating tool-steel	S. Ueda	815
190	Coating weight control by a multi-slot gas wiping nozzle	G. Takeda	816
191	Deposition of hard boron nitride films on the substrates containing catalytic metals	K. Teii	817
Joining			
192	Microstructure and hardness distributions in TIG welds of medium carbon steels with various structures in base metals	R. Ueji	818
193	Influence of alloy elements on the reheat cracking susceptibility in weld metal of Cr-Mo steel. (report 2; influence of carbon and boron in weld metal)	M. Yuga	819

Program of the 168th ISIJ Meeting (Sep. 24-26, 2014)

194	Evaluation of hot tear during electron beam welding of cast steel	M. Ogata	. . .	820
195	Influence of temperature for diffusion bonding strength with thermo-mechanical treatment at austenitic stainless steel	M. Katoh	. . .	821
196	Fatigue crack retardation by fine particle paste infiltration under different cyclic stress conditions	H. Aoki	. . .	822
Cooling				
197	Flow property and heat flux distribution of pipe-laminar flow impinging on a moving plate	Y. Shiramasa	. . .	823
198	Consideration of temperature change at head and tail in space division temperature model for run out table of hot strip mill	H. Kazuhiro	. . .	824
199	Effect of residual water height on heat transfer characteristics issuing from staggered-array water jets on hot steel plate	J. Lee	. . .	825
Oxidation scale				
200	Adhesive strength measurement of oxide scale at high temperature	H. Tanei	. . .	826
201	Effect of temperature on adhesive strength of oxide scale at high temperature	Y. Kondo	. . .	827
202	Characteristics of contact heat transfer between die and material in hot working	S. Ueoka	. . .	828
Rolling				
203	Hot working characteristics of Nb-added carbon steel using processing map	R. Nishiyama	. . .	829
204	Analysis of fracture behavior of Al ₂ O ₃ clusters in steel during hot-rolling	N. Matsuoka	. . .	830
205	Research on the stability of finishing threading in baosteel 1580mm hot rolling plant	Z. Sheng	. . .	831
206	Effect of yield-point phenomena in skin-pass rolling of thin steel sheets with dull finished work rolls	H. Kijima	. . .	832
Microstructure and Properties of Materials				
Lecture No.				
Plenary Session	Title	Speaker	Page	
Precipitation				
207	Behaviors of nano-void formation at the particles and ductile fracture in hard carbide and soft Cu particle dispersion steels	I. Shimoji	. . .	833
208	Effect of isothermal treatment on content of retained austenite in heavy high alloy cast steel	K. Fujio	. . .	834
209	Tempering behavior of Fe-Cr-C martensite studied by neutron diffraction	Y. Tomota	. . .	835
210	Precipitation hardening behavior and mechanical properties of Fe-38Ni-15Cr-2.7Nb-2.2Ti-0.2Al alloy	M. Takahashi	. . .	836
Structure formation				
211	Abnormal grain growth induced by phase transformation in Fe-Mn-Al-Ni alloy	T. Omori	. . .	837
212	In situ measurements of dislocation density and texture by neutron diffraction during high-temperature deformation for Fe-33Ni alloy	Y. Tomota	. . .	838
213	Development of non-uniform deformation texture by cold rolling of ferritic steel sheet	S. Kira	. . .	839
Hydrogen embrittlement 1				
214	Hydrogen absorption to low alloy steels in high pressure gaseous hydrogen environments	T. Omura	. . .	840
215	Study on surface coating with a high barrier property under high-pressure gaseous hydrogen	J. Yamabe	. . .	841
216	Initiation and growth of surface cracks in SSRT of low alloy steel JIS-SCM435 in 115 MPa hydrogen gas	K. Ryota	. . .	842
Hydrogen embrittlement 2				
217	SSRT property and fracture toughness required for strength design of SUH660 in high-temperature gaseous hydrogen	H. Itoga	. . .	843
218	Mechanical property of austenitic stainless steels in high pressure gaseous hydrogen environment	Y. Watanabe	. . .	844
219	Determination of factor causing hydrogen embrittlement of SUS316L stable austenitic stainless steel	M. Arakawa	. . .	845
220	Fatigue life characteristics of carbon steel and low alloy steel in high-pressure hydrogen gas	Y. Ogawa	. . .	846
Ferritic heat resistant steels 1				
221	Microstructural change by repetition of heating in Mod.9Cr-1Mo steel	Y. Masuda	. . .	847
222	Microstructural change by repetition of heating in Mod.9Cr-1Mo steel	K. Sawada	. . .	848
223	Creep damage evaluation of welded joint of modified 9Cr-1Mo steel by positron lifetime spectroscopy	K. Sugita	. . .	849
224	Creep strength property of modified 9Cr-1Mo steel tubes after long-term service	K. Kimura	. . .	850

Program of the 168th ISIJ Meeting (Sep. 24-26, 2014)

Ferritic heat resistant steels 2

225	Creep deformation analysis and prediction of creep strength property of grade T91 steels	K. Kimura	• • •	851
226	Effect of aging on tensile property in modified 9Cr-1Mo steel for long-term design	Y. Nagae	• • •	852
227	Evaluation of long-term creep rupture life of Gr.122 steel by multi-region analysis	K. Maruyama	• • •	853
228	Influence of cold work to creep properties of high strength 9Cr-3W-3Co-Nd-B steel	T. Hamaguchi	• • •	854

Austenitic heat resistant steels

229	Creep strength property and microstructural evolution of type 316L(N) stainless steel	K. Kimura	• • •	855
230	Change in creep life by impurities and fundamental creep strength of 300 series stainless steels	F. Abe	• • •	856
231	TEM observation of nucleation of grain boundary laves phase in novel Fe-Cr-Ni-Nb austenitic heat resistant steels	F. Gao	• • •	857
232	3D microstructure analysis of grain-boundary laves phase in Fe-20Cr-30Ni-2Nb by tribeam system	M. Yoshihara	• • •	858
233	Phase equilibria among $\gamma/\alpha/\sigma$ phases in Fe-Cr-Ni-Mn quaternary system at elevated temperatures	Y. Kumagai	• • •	859

Ni based alloys

234	Effect of stress relief heat treatment on microstructure and strength in Alloy263 weld joints	K. Kubushiro	• • •	860
235	Phase-field simulation of the rafting in turbine blades of Ni-based single crystal superalloys	S. Morimoto	• • •	861
236	Change in the gamma ' morphology in NKH71 nickel based single crystalsuperalloy with heat treatment conditions	T. Kanzaki	• • •	862
237	Morphological change in gamma' precipitates with creep deformation of a non re content single crystal Ni-based superalloy NKH71 at 1273K	N. Miura	• • •	863
238	Microstructure of a single crystal Ni-based superalloy PWA1480 with high stress compression crept at 1273K	S. Kudo	• • •	864

Deformation behaviour 1

239	Anisotropic behavior of strain age hardening by pre-strain direction in low carbon steel	M. Kameya	• • •	865
240	Quantitative analysis of tensile deformation behavior for ferritic steels containing second phase particles by in-situ neutron diffraction	S. Morooka	• • •	866
241	Effects of grain diameter and strain rate on local deformation energy for pure iron (Ductile fracture mechanism of steel-5)	T. Hirashima	• • •	867
242	Temperature-strain rate dependence of flow stress in steels with nano-precipitates	N. Kamikawa	• • •	868

Deformation behaviour 2

243	Local stress measurement of Fe-Ga Alloy by White X-ray diffraction	Y. Onuki	• • •	869
244	Finite element analyses of elasto-plastic deformation in the vicinity of pearlite colony boundary	L. Roslan	• • •	870
245	Crystal plasticity analyses of ferrite/cementite fine lamellar structure with the effects of the lamellar thickness and direction of dislocation movement	Y. Yasuda	• • •	871
246	Effect of microscopic deformation behavior on strain hardenability of dual phase steel	K. Yasuda	• • •	872

Deformation behaviour 3

247	Crystal rotation and substructure formation during tensile deformation of high-purity iron	Y. Onuki	• • •	873
248	Behavior of retained austenite at the brittle crack initiation point in nickel bearing cryogenic steel	H. Furuya	• • •	874
249	Deformation of drawn pearlitic steel	M. Yasumaru	• • •	875
250	Inhomogeneous deformation and mechanical property in austenite-ferrite steels with transformation induced plasticity	R. Mauchi	• • •	876

Fatigue

251	Low- and high-cycle fatigue properties of SUS630 precipitation hardening stainless steel.	H. Hirukawa	• • •	877
252	Relationship between stress errors and resonance frequencies in ultrasonic fatigue testing	Y. Furuya	• • •	878
253	Calculation method for exceedance probability of fatigue strength due to internal fatigue fracture 1st report	H. Shimanuki	• • •	879
254	Vacancy cluster formation during fatigue process of AISI316 stainless steel studied by positron lifetime spectroscopy	H. Kadono	• • •	880
255	Effects of fine particle peening on torsional fatigue strength of a high-strength low alloy TRIP-aided steel	M. Yuta	• • •	881

Cold-rolled • Hot-rolled steel sheet

256	Effects of morphology of martensite on hole expanding ratio of DP type cold-rolled steel sheets	K. Takashima	• • •	882
257	Influence of tempering on the microstructure and mechanical properties of ferrite and martensite dual phase steel	H. Li	• • •	883

Program of the 168th ISIJ Meeting (Sep. 24-26, 2014)

258	Effects of initial microstructure and annealing time of 0.2C-2Si-5Mn(%) steel	N. Hirokazu	• • •	884
259	Relationship between mechanism of interphase precipitation and change of row spacing in hot-rolled steel sheet.	N. Kosaka	• • •	885
260	Effect of cooling condition on the strength and formability for precipitation hardened hot rolled steel sheet	T. Yokoyama	• • •	886
TRIP steel				
261	Effects of Mn content on impact toughness of a TRIP-aided martensitic steel	H. Tanino	• • •	887
262	Effect of Nb, Ti, V addition on the microstructure and mechanical properties of TWIP steels	K. Son	• • •	888
263	Microstructure and mechanical properties of microalloyed TWIP steels	D. Kim	• • •	889
Strengthening mechanism				
264	Strength evaluation in solid solution alloys using 3D dislocation tomography	M. Mitsuhashi	• • •	890
265	Effect of particle shape on Orowan stress	H. Kaido	• • •	891
266	Effect of NiAl precipitates on strength and damping capacity of Fe-Cr-Al alloy	M. Morita	• • •	892
Martensite				
267	Difference in martensitic transformation behavior between carbon- and nitrogen-added metastable austenitic stainless steels	T. Masumura	• • •	893
268	Difference between carbon and nitrogen in the effectivity for quenching and partitioning heat treatment of martensitic stainless steel	T. Junya	• • •	894
269	Hydrostatic stress generated by martensitic transformation in untransformed austenite	Y. Ishibashi	• • •	895
270	Effect of molybdenum on reverse transformation behavior from tempered martensite in medium carbon steel	Y. Ueda	• • •	896
Electrical steel 1				
271	Effects of temperature and strain rate on deformation twinning in Fe-high Si alloy	T. Mizuguchi	• • •	897
272	Relationship between {411}<148> recrystallization and cold rolling texture in Fe-3%Si	H. Atsumi	• • •	898
273	Influence of grain size on hysteresis loss of non-oriented electrical steel sheet	H. Tada	• • •	899
Electrical steel 2				
274	Secondary recrystallization of {100}<001> oriented grains produced by using warm rolling in high purity 3%Si steel	Y. Hayakawa	• • •	900
275	Improvement of magnetic properties of 6.5%Si steel sheet by texture control	T. Okubo	• • •	901
276	Magnetic properties of Si-gradient steel sheet siliconized in gamma phase	T. Hiratani	• • •	902
Stainless steels 1				
277	Microelectrochemical study on pitting behavior of delta/gamma grain boundary of stainless cast steels	A. Otake	• • •	903
278	Influence of delta-ferrite on the sensitization of austenitic stainless steel weld metals	A. Seki	• • •	904
279	Effect of alloying additives to martensitic stainless steel on corrosion resistance to formic acid.	M. Miyoseta	• • •	905
280	Influence of Mo on high temperature oxidation behavior of La doped 20Cr-6Al ferritic stainless steel.	A. Mizutani	• • •	906
Stainless steels 2				
281	Effect of nitrogen on age-hardening of metastable austenitic stainless steel after cold drawing	S. Yamasaki	• • •	907
282	Three-dimensional characterization of intragranular precipitates in SUS347	K. Rika	• • •	908
283	Effect of S on hot workability of EN1.4362 duplex stainless steel	K. Sato	• • •	909
284	In-situ observation of widmanstatten-austenite growth in duplex stainless steel	Y. Iwasaki	• • •	910
Simulation				
285	Gamma/alpha transformation behaviors and local equilibrium in the C composition gradient Fe-C-Ni diffusion couples	T. Nakagawa	• • •	911
286	Effect of dislocation slip on the formation of martensite phase in steels	T. Harada	• • •	912
287	Simulation of austenite-to-ferrite transformation in Fe-C-Mn alloy using non-equilibrium multi-phase-field model coupled with thermodynamic database	M. Segawa	• • •	913
288	Crystal plasticity fast fourier transformation simulation of stress and strain partitioning in dual-phase steel during uniaxial tensile deformation	A. Yamanaka	• • •	914
Calculation • Modeling				
289	Behavior of C and N in vicinity of Cr in alpha iron: first principles study	M. Souissi	• • •	915

Program of the 168th ISIJ Meeting (Sep. 24-26, 2014)

290	First principles calculation of the effects of substitutional alloying elements on physical properties of steels	H. Ohtsuka	• • •	916
291	First-principles study on surface phase stability of Fe-based alloys	K. Yuge	• • •	917
292	Effect of cooling rate on tetragonality in as-quenched carbon steel martensite	D. Akama	• • •	918
Fracture				
293	Effects of martensite substructure on fracture behavior of dual phase steels	T. Murakami	• • •	919
294	Micromechanical testing of DP steel subjected to pre-straining	Y. Mine	• • •	920
295	Effect of plastic working on tensile deformation behavior of DP steel	K. Ikeda	• • •	921
296	The effect of microstructure on low-temperature embrittlement in low-carbon bainitic steel	M. Tsuboi	• • •	922
297	Effect of carbon content on the charpy impact properties in Air-Cooled 0.1C-5Mn martensitic steel	T. Hanamura	• • •	923
Stainless steels 3				
298	Influence of Ni, Al contents on mechanical properties of PH13-8Mo	H. Takabayashi	• • •	924
299	Influence of strain on grain growth of ferritic stainless steel.	K. Matsuda	• • •	925
300	Influence of Carbo-Nitride precipitation on hardness in ferritic stainless steels	Y. Yakushijin	• • •	926
Stainless steels 4				
301	Mechanical properties and corrosion resistance in Si added semi-ferritic stainless steel	S. Kim	• • •	927
302	Effect of Ti and Nb on grain boundary segregation of P and Sn in 17%Cr stainless steels	S. Teraoka	• • •	928
303	Microstructure change and corrosion resistance of solution nitrided ferritic-stainless steel	Y. Hayashi	• • •	929
Structure steel, steel plate and pipe				
304	Effect of oxidation treatment on carburizing performance of sicc steel	T. Sugiura	• • •	930
305	The configuration of as-carburized abnormal surface layer and its influence on the property of pitting resistance for Si,Cr-added steel.	T. Maruyama	• • •	931
306	Effect of Si content on work hardening in TMCP heavy-plate steel	S. Tsunegi	• • •	932
307	Analysis of toughness scatter by local approach considering strain effect	S. Yoshizu	• • •	933
308	Numerical simulation of unstable ductile fracture in high pressure gas pipelines based on CTOA	K. Miyamoto	• • •	934
Deformation behaviour 4				
309	The effect of grain refining and intragranular dislocation on dislocation motion in ferrite steel	K. Hata	• • •	935
310	Effect of strain rate on true stress-true strain relationship in low carbon ultrafine-grained ferrite-cementite steels	H. Nakano	• • •	936
311	Effect of cementite volume fraction on true stress-true strain relationship up to the plastic deformation limit in ultrafine-grained ferrite-cementite steels.	S. Ueno	• • •	937
Deformation behaviour 5				
312	Analysis of spring back behavior of the steel sheet for cans in consideration of a stress distribution change	M. Suto	• • •	938
313	Crystal plasticity analysis of the Bauschinger effect in two-phase alloys with dispersion of hard fine spherical particles	Y. Okuyama	• • •	939
314	Mechanical instability of body-centered cubic crystals under finite deformation	R. Tarumi	• • •	940
315	First principles calculations of elastic properties of FeC and FeN martensites	M. Souissi	• • •	941
316	Prediction of fracture point in tension test	R. Morimoto	• • •	942
Hydrogen embrittlement 3				
317	Effect of Si and Mn content on rolling contact fatigue phenomena due to hydrogen embrittlement of carbo-nitrided steel	T. Kinami	• • •	943
318	Frequency dependence of fatigue crack acceleration due to hydrogen in cold-rolled type 304 steel	T. Nakashima	• • •	944
319	Fatigue crack growth properties and fracture toughness of SNCM439 in 0.7 MPa hydrogen gas	H. Mitsuhiro	• • •	945
Hydrogen embrittlement 4				
320	Fractography of fatigue fracture surfaces of Cr-Mo steel pressure vessels after cycle testing with high pressure hydrogen gas	T. Awane	• • •	946
321	Fatigue behavior of ultra-high strength mooring chain in sea water—report 3 of EAC of offshore mooring chain	J. Yin	• • •	947
322	Effect of matrix structure on hydrogen embrittlement susceptibility in low alloy steel	Y. Sakiyama	• • •	948
323	Hydrogen states and hydrogen embrittlement susceptibility of high carbon chromium bearing steel SUJ2	T. Nagase	• • •	949

Program of the 168th ISIJ Meeting (Sep. 24-26, 2014)

Hydrogen embrittlement 5

- 324 The applicability of numerical analysis of stress induced hydrogen diffusion to structural simulation M. Ishikawa . . . 950
- 325 Effects of martensite fraction on hydrogen embrittlement behavior for ultra-high strength dual-phase steel sheet under sustained tensile-loading test Y. Yoshioka . . . 951
- 326 Positron lifetime study of vacancy cluster behavior in hydrogen-charged steel under tensile deformation Y. Muto . . . 952
- 327 Effect of grain size on hydrogen embrittlement behaviors in 22Mn-0.6C TWIP steel Y. Bai . . . 953

Hydrogen embrittlement 6

- 328 Behavior of vacancy, hydrogen and solid solution carbon in α -iron under various aging times N. Kurihara . . . 954
- 329 Hydrogen trapping sites in tempered martensitic steel using thermal desorption spectrometry detected from low-temperature K. Saito . . . 955
- 330 Effect of hydrogen on deformation behavior in tempered martensitic steel A. Imai . . . 956
- 331 Role of lattice defects and hydrogen on hydrogen embrittlement of tempered martensitic steel N. Nozaki . . . 957

Diffusional transformation 1

- 332 Effect of crystallographic orientation relationship between neighboring austenite grains on nucleation and orientation of grain boundary ferrite T. Tanaka . . . 958
- 333 Effect of Mn on growth kinetics of ferrite sideplates H. Usuki . . . 959
- 334 Variant selection of bainite nucleated at austenite grain boundaries in Fe-2Mn-C alloys T. Kaneshita . . . 960

Diffusional transformation 2

- 335 Dynamic ferrite transformation behaviors in 2Mn-0.1C steel S. Yamazaki . . . 961
- 336 Effect of austenite condition on strength after cooling T. Fukushi . . . 962
- 337 Effect of pearlite on lattice strain in ferrite evaluated by X-ray diffractometry Y. Tanaka . . . 963
- 338 Effect of elastic strain on strength in pearlitic steel N. Nakada . . . 964
- 339 Statistical measurement of cementite and ferrite thickness of pearlitic steels using SEM with deep etching T. Sirithanakorn . . . 965

Properties evaluation

- 340 Extension the range of applicable thickness of existing formula for estimation of hardenability from chemical compositions F. Takamine . . . 966
- 341 Effect of minor alloying elements on the coefficient of thermal expansion and curie temperature of 42% Ni-Fe alloy K. Takimoto . . . 967
- 342 NDE of high-temperature degradation of stainless steels based on the measurement of physical properties Y. Kamada . . . 968
- 343 Flow rate dependency of hydrogen permeation in steel sheet Y. Yamamoto . . . 969

Nitrogen steel

- 344 Effect of deformation on nitriding behavior of Fe-M binary alloys F. Meng . . . 970
- 345 Microstructure and hardness of high nitrogen martensite formed in Fe-N binary alloy K. Inoue . . . 971
- 346 Isothermal transformation behavior of hypereutectoid nitrogen austenite T. Koyano . . . 972

Resistance to corrosion

- 347 Electrochemical characteristics of steel mechanically plated with zinc-powder-blasting method H. Shiraga . . . 973
- 348 Corrosion mechanism of steel on Zn-Fe metal projection coating by electrochemistry measurement Y. Kaku . . . 974
- 349 Hi corrosion resistance treatment for mechanical plating R. Ehara . . . 975

Mechanism of corrosion and corrosion protection

- 350 Hydrogen absorption into steels with different additional element Y. Nii . . . 976
- 351 Pitting of 13Cr steel in the simulated boiler water added Cl^- and SO_4^{2-} L. Niu . . . 977
- 352 Microelectrochemical properties of Ti(C,N) inclusions under weak acid conditions Y. Watanabe . . . 978

Hot dip coating

- 353 Influence of carbon content on the Fe oxides formation on the steel M. Tanaka . . . 979
- 354 Effect of annealing conditions on galvanizing properties in TWIP steel with Ni pre-plating S. Jeon . . . 980
- 355 Measurement of Fe/Zn sliding interface temperature H. Takebayashi . . . 981
- 356 Influence of the height of burr on the edge corrosion resistance of painted zinc coated steel sheets T. Yasui . . . 982

Program of the 168th ISIJ Meeting (Sep. 24-26, 2014)

Functional treatment

357	Cu electrodeposition on steel plate using complex baths	I. Saeki	• • •	983
358	Newly developed antibacterial assay of metal applying the nano-layer coating process	Y. Miyano	• • •	984
359	Development of aluminide layers with gradually changed compositions on SUS430 by 2 step heat treatments	K. Niinobe	• • •	985

Process Evaluation and Material Characterization

Lecture No.

Plenary Session	Title	Speaker		Page
Crystal structure analysis				
360	Characterization of precipitates and crystal grain in Cu-V steel by small-angle neutron scattering and bragg-edge simultaneous analysis	Y. Oba	• • •	986
361	Analysis of precipitation behaviour of age-hardening electromagnetic stainless steel by small angle X-ray scattering	K. Satoh	• • •	987
362	High-temperature XRD line-profile analysis for dislocation recovery of cold-drawn pearlitic steels	S. Sato	• • •	988
363	In-situ measurements of X-ray absorption spectra of green rust during oxidation in aqueous solution containing phosphorous ions	S. Fujieda	• • •	989

Precipitate & inclusion analysis

364	Development of standard metal sample containing a defined size particles by the sandwich spark discharge emission spectrometry	K. Mizukami	• • •	990
365	Spark discharge optical emission spectrometric analysis of inclusions assisted by particles adhering to sample surface	H. Kurayasu	• • •	991
366	3D distribution analysis of alumina inclusions by using laser-induced plasma spectrometry in single-shot scanning mode	K. Wagatsuma	• • •	992
367	Effect of different deoxidizer on the evolution of nonmetallic inclusions in CrMo drill pipe steel during steelmaking process	Y. Sui	• • •	993

Elemental analysis

368	Development of analytical method for free-MgO in steel slag	M. Inose	• • •	994
369	Analysis of cementite dissolution behavior of pearlitic steels in cold-drawing process using electrolytic extraction analysis	H. Ogawa	• • •	995
370	Solid state NMR qualitative and quantitative analysis of fluorine chemical structure in inorganic materials	T. Takahashi	• • •	996

ISIJ and JIM Joint Session

Lecture No.

Plenary Session	Title	Speaker		Page
Titanium and titanium alloys 1				
J1	Effects of thickness and grain size on tensile properties of pure titanium thin sheets	H. Takebe	• • •	997
J2	Influence of the initial structure on high-temperature yield strength in near alpha titanium alloy	T. Sakamoto	• • •	998
J3	Microstructure of anodic titanium oxide was reduced and carbonitrided by iron powder pack technique	S. Agawa	• • •	999
J4	Phase transformation and abnormal grain growth in electron beam melting of commercially pure titanium	K. Yamanaka	• • •	1000
Titanium and titanium alloys 2				
J5	Production of high-strength titanium alloy plate by prealloyed powder metallurgy	N. Fukada	• • •	1001
J6	Production of high-strength titanium alloy bar by prealloyed powder metallurgy	M. Hayakawa	• • •	1002
J7	Hot deformation behaviors of Si-added Ti-5Al-1Fe	T. Kitaura	• • •	1003
J8	Effect of compositions on microstructures transformed during continuous cooling from beta region in Ti-Al-Fe-Mo based alpha plus beta titanium alloys	Y. Tatsuzawa	• • •	1004
Titanium and titanium alloys 3				
J9	Flow behavior of Ti-6Al-4V alloy with an ultrafine-grained microstructure during superplastic deformation	H. Matsumoto	• • •	1005
J10	Effect of oxygen on heterogeneous plastic deformation of ($\alpha+\beta$) type Ti-4Cr alloy	A. Okamoto	• • •	1006
J11	Improvement in fatigue strength of Ti-6Al-4V alloy by hybrid treatment composed of plasma nitriding, short-time heat treatment and fine particle bombarding	C. Tsuda	• • •	1007
J12	Microstructure and wear resistance of Ti-6Al-4V alloy irradiated in air by laser	S. Kariya	• • •	1008

Program of the 168th ISIJ Meeting (Sep. 24-26, 2014)

Titanium and titanium alloys 4

J13	Effect of Si and Ge on the structure of alpha-beta interface and globularization in titanium alloys	S. Kondi	• • •	1009
J14	Effects of heat treatment of Ti-6Al-7Nb processed by HPT on microstructure and mechanical properties	M. Ashida	• • •	1010
J15	Microstructure evolution in Ti-10Al-2Nb alloy processed by severe deformation	A. Jastrzebska	• • •	1011
J16	Evaluation of torsion fatigue property of circumferentially notched bars of Ti-6Al-4V alloy	S. Watanabe	• • •	1012

Titanium and titanium alloys 5

J17	A first principles study of the electronic properties and phase stability in beta type titanium alloys	R. Sahara	• • •	1013
J18	Effect of interstitial atoms on viscoelastic properties of gum metal	Y. Nishiyama	• • •	1014
J19	Tensile stress-strain behavior in Ti-12Mo alloy with heterogeneous Mo distribution	X. Ji	• • •	1015
J20	Phase stability and structural changes of beta-type titanium alloys with high local deformability	Y. Mantani	• • •	1016

Titanium and titanium alloys 6

J21	Durability of spinal fixation devices made of Ti-29Nb-13Ta-4.6Zr alloy subjected to cavitation peening	M. Nakai	• • •	1017
J22	Changeable young's modulus with good ductility achieved in a beta-type titanium alloy for spinal fixation applications	H. Liu	• • •	1018
J23	Relationship between microstructure and fatigue properties of cold-rolled Ti-15V-3Cr-3Sn-3Al alloy	N. Ide	• • •	1019

Ultrafine grained materials -fundamental aspects for ultrafine grained structures 1

J24	Enhancement in tensile strength of bulk nanocrystalline Fe-Ni alloys electrodeposited using carboxylic acid	H. Mori	• • •	1020
J25	Effect of annealing behavior on pitting corrosion resistance and tensile properties of ultrafine grained low-C,N Fe-20%Cr steels by ECAP	M. Rifai	• • •	1021
J26	Precipitation during HPT deformation and subsequent ageing in Mg - 3.4 mol% Zn alloy	J. Rosalie	• • •	1022

Ultrafine grained materials -fundamental aspects for ultrafine grained structures 2

J27	Deformation behavior of harmonic structure designed Co-Cr-Mo alloy at room temperature	O. Yamaguchi	• • •	1023
J28	Microstructure and mechanical properties of pure-Ti harmonic structure compacts fabricated by jet milling process	K. Kurokawa	• • •	1024
J29	Harmonic structure design of Ti-6Al-4V alloy compacts by jet milling process	T. Watanabe	• • •	1025