Academic Staffs

Dr. Shinya KITAMURA (Professor)
- 1978  Graduated from the Dept. of Material Science, Faculty of Eng. Tohoku Univ.
- 1991  Awarded Dr. of Engineering from Kyushu Univ.
- 2001  Transferred to Hikari R&D Lab. (General manager)
- 2003  Joined Nippon Steel & Sumikin Stainless Steel Corp. (Head of R&D center)
- 2005  Joined Tohoku Univ. Institute of Multi-disciplinary Research for Advanced Materials. (Professor)
Academic Societies: The Iron and Steel Institute of Japan (ISIJ), The Japan Institute of Metals (JIM), The mining and Materials Processing Institute of Japan (MMIJ), Association for Iron & Steel Technology (AIST)

Dr. Hiroyuki SHIBATA (Associate Professor)
- 1987  Graduated from the Dept. of Material Processing, Faculty of Eng. Tohoku Univ.
- 1993  Completed Doctoral Degree Program, Graduate School of Engineering, Tohoku Univ., and awarded Doctoral Degree of Engineering (Tohoku University)
- 1993  Research Associate, Institute of Advanced Materials Processing, Tohoku University
- 2002  Visiting Researcher, Center for Iron and Steel Research, Carnegie Mellon University
- 2006  Promoted as a Lecturer, Tohoku University
- 2006  Promoted as a Associate Professor, Tohoku University
Academic Societies: The Iron and Steel Institute of Japan (ISIJ), The Japan Institute of Metals (JIM)

Dr. Nobuhiro MARUOKA (Assistant Professor)
- 2001  Graduated from Osaka Prefecture University (Dept. of Chemical Engineering)
- 2003  Completed Master’s Degree Program, Graduate School of Engineering, Osaka Prefecture University
- 2006  Completed Doctoral Degree Program, Graduate School of Engineering, Hokkaido University
- 2006  Awarded Doctoral Degree of Philosophy (Hokkaido University)
- 2006  Research Associate, Institute of Multidisciplinary Research for Advanced Materials, Tohoku University
Academic Societies: The Iron and Steel Institute of Japan (ISIJ), The Society of Chemical Engineers, Japan (SCEJ), The Japan Institute of Energy (JIE)
Visiting Professor

Dr. Govind Sharan Gupta

1985  B.E. in Metallurgical Engineering from NIT, Nagpur, India
1987  M.Tech. in Metallurgical Engineering from I.I.T. Kanpur, India
1991  Ph.D. in Materials Eng. from The University of Wollongong, Australia
1994  Lecturer, Department of Metallurgy, Indian Institute of Tech, Kharagpur, India
1995  Lecturer-A, Department of Mining & Metallurgy, Uni of Queensland, Australia
1997  Assistant Prof., Dept. of Metallurgy, Indian Institute of Sci.,Bangalore, India
2003  Associate Prof., Dept. of Metallurgy, Indian Institute of Sci., Bangalore, India
2007  Professor, Dept. of Metallurgy, Indian Institute of Sci., Bangalore, India
2011  Visiting Prof. Institute of Multidisciplinary Research for Advanced Materials, Tohoku University (4 months from August)
Students

Doctor course students
3rd year
  Mr. Duk-yong Song
  Mr. Sun-joong Kim
1st year
  Mr. Kyung-Ho Kim
  Mr. Akifumi Harada

Master course students
2nd year
  Mr. Koutaro Ishii
  Mr. Jun Takekawa
  Mr. Hiromune Takeuchi
  Mr. Gaku Miyano
  Ms. Yuka Yokoyama
1st year
  Mr. Shigeru Kaneko
  Mr. Nobuhiro Suetsugu
  Mr. Shintaro Narumi
  Mr. Masanori Numata

Visiting Students
  Mr. Jiang Liu  (6 months from October)
    University of Science and Technology Beijing, China
  Mr. Qiang Liu  (2 months from November)
    Royal Institute of Technology, Sweden
Research Articles

Farshid Pahlevani, Hiroyuki Shibata, Nobuhiro Maruoka, Shin-ya Kitamura and Ryo Inoue
Behavior of Vanadium and Niobium during Hot Metal Dephosphorization by CaO-SiO$_2$-Fe$_2$O Slag
*ISIJ International*, 51(2011), pp.1624-1630

Sun-joong Kim, Hiroyuki Shibata, Nobuhiro Maruoka, Shin-ya Kitamura and Katsunori Yamaguchi

Shin-ya Kitamura
Preface to the Special Issue on "Fundamentals and Applications of Non-metallic Inclusions in Solid Steel"
*ISIJ International*, 51(2011), pp.1943

Hiroyuki Shibata, Koichiro Kimura, Tomoko Tanaka and Shin-ya Kitamura
Mechanism of Composition Change in Oxide Inclusions of Fe-Cr alloys de-oxidized with Mn and Si by Heat Treatment at 1473 K

Koichi Takahashi, Keita Utagawa, Hiroyuki Shibata, Shin-ya Kitamura, Naoki Kikuchi and Yasushi Kishimoto
Influence of Solid CaO and Liquid Slag on Hot Metal Desulfurization
*ISIJ International*, 52(2012), pp.10-17

D.Y. Song, N. Maruoka, G. S. Gupta, H. Shibata, S. Kitamura and S.Kamble

Proceedings of International Conferences

S.Kitamura, H.Shibata, S.J.Kim, T.Teradoko, N.Maruoka and K.Yamaguchi
Novel process for recycling valuable elements from steelmaking slag
**H. Shibata, A. Harada and S. Kitamura**  
Change in chemical composition and morphology of deoxidation products in iron based alloy by heat treatment at 1473K.  

**H. Shibata, S. Kitamura** and T. Emi  
Application of confocal scanning laser microscopy to process metallurgy.  

**D.Y. Song, N. Maruoka, H. Shibata, S. Kitamura**  
N.Sasaki, Y.Ogawa and M.Matsuo  
Influence of Metal Phase Density on Emulsion Formulation in Bottom Bubbling Condition.  

**Shin-ya Kitamura, Farshid Pahlevani, Hiroyuki Shibata,** Masaki Miyata, Teppei Tamura and Yoshihiko Higuchi  
Improvement of Kinetic Model for Hot Metal Dephosphorization  

**Shin-ya Kitamura**  
Development of the Japanese Steel Refining Technology in these 15 Years.  

**Nobuhiro Maruoka, Akira Ishikawa, Hiroyuki Shibata and Shin-ya Kitamura**  
Evaluation of the Flux Dissolution Rate in Steelmaking Slag.  

**Nobuhiro Maruoka, Akira Ishikawa, Hiroyuki Shibata and Shin-ya Kitamura**  
Competitive Dissolution of MgO from Flux and Refractory  
Shin-ya Kitamura, Hiroyuki Shibata, Nobuhiro Maruoka and Katsunori Yamaguchi
Strategy to Recover Valuable Elements from Steel Scrap and Steelmaking Slag
Proceedings of Fray International Symposium, Cancun, Mexico, (2011.11), CD-ROM [Keynote]

Sun-Joong Kim, Shin-ya Kitamura, Tetsuro Hotta, Hiroyuki Shibata and Katsunori Yamaguchi
Recovery of Manganese from Steelmaking Slag
Proceedings of Fray International Symposium, Cancun, Mexico, (2011.11), CD-ROM

Shin-ya Kitamura
Improvement of reaction rate in steelmaking process
Proceedings of International Conference on Advanced Materials and Materials Processing,
Kharagpur , India, (2011.12), CD-ROM [Keynote]

Nobuhiro Maruoka, Hiroyuki Shibata, Shin-ya Kitamura and Kouichi Takahashi
Behavior of Sulfur Transfer between Hot Metal and Multi-phase Slag in Hot Metal Pretreatment
Proceedings of International Conference on Advanced Materials and Materials Processing,
Kharagpur , India, (2011.12), CD-ROM [Keynote]

Proceedings of Domestic Conferences

Shin-ya Kitamura, Nobuhiro Maruoka, Akira Ishikawa and Hiroyuki Shibata
Dissolution Rate of Solid Oxide to Molten Slag
Proceedings 19th Committee (Steelmaking), Japan Society for the Promotion of Science, No. 12542, (2011.5) (Japanese)

Shin-ya Kitamura, Duk-Yong Song, Nobuhiro Maruoka, Govind S. Gupta, Hiroyuki Shibata,
Naoto Sasaki, Yuji Ogawa and Michitaka Matsuo
Formation of Metal Emulsion in Al-ally and Molten Salt System.
Proceedings 19th Committee (Steelmaking), Japan Society for the Promotion of Science, No. 12596, (2012.1)

Sun-Joong Kim, Hiroyuki Shibata, Shin-ya Kitamura and Katsunori Yamaguchi
Evaluation for the activity of MnS and FeS, and the distribution of Fe and Mn between Fe-Mn-O-S melts and molten slags
Proceedings of the 162nd Autumn Meeting of Iron & Steel Institute of Japan, CAMP-ISIJ, 24(2011), 759 (Japanese)
Nobuhiro Maruoka, Shin-ya Kitamura, Hiroyuki Shibata and Shinpei Ono
Phosphorous distribution ratio between solid iron and molten slag in hydrogen direct steelmaking
Proceedings of the 162\textsuperscript{nd} Autumn Meeting of Iron & Steel Institute of Japan, CAMP-ISIJ, 24(2011), 580 (Japanese)

Takaya Furuwatari, Yuuki Hasegawa, Yasuhiro Shiraki, Hiromichi Oota and Hiroyuki Shibata
The relation between thermal conductivity and NBO/T for R-Na\textsubscript{2}O-SiO\textsubscript{2}\textsubscript{2} (R=Al\textsubscript{2}O\textsubscript{3},CaO) melts
Proceedings of the 162\textsuperscript{nd} Autumn Meeting of Iron & Steel Institute of Japan, CAMP-ISIJ, 24(2011), 829 (Japanese)

Nobuhiro Maruoka, Akira Ishikawa, Hiroyuki Shibata and Shin-ya Kitamura
Influence of formation layer around CaO on the dissolution rate in steelmaking slag
Proceedings of the 163\textsuperscript{rd} Spring Meeting of Iron & Steel Institute of Japan, CAMP-ISIJ, 25(2012), 217

Akifumi Harada, Shin-ya Kitamura, Hiroyuki Shibata and Nobuhiro Maruoka
Development of the kinetic model between metal, slag, refractory and inclusion during ladle refining
Proceedings of the 163\textsuperscript{rd} Spring Meeting of Iron & Steel Institute of Japan, CAMP-ISIJ, 25(2012), 236(Japanese)

Sun-Joong Kim, Hiroyuki Shibata, Shin-ya Kitamura and Katsunori Yamaguchi
Influence of slag basicity on Mn and Fe equilibrium distribution between liquid Fe-Mn-Ca oxysulfide system and molten slags
Proceedings of the 163\textsuperscript{rd} Spring Meeting of Iron & Steel Institute of Japan, CAMP-ISIJ, 25(2012), 242(Japanese)

Duk-Yong Song, Nobuhiro Maruoka, Hiroyuki Shibata, Shin-ya Kitamura, Govind.S.Gupta and S.Kamble
Model analysis of emulsified droplet velocity in Pb-Salt system
Proceedings of the 163\textsuperscript{rd} Spring Meeting of Iron & Steel Institute of Japan, CAMP-ISIJ, 25(2012), 254

D.Y.Song, Nobuhiro Maruoka, Hiroyuki Shibata, Shin-ya Kitamura, Naoto Sasaki and Yuji Ogawa
Influence of bottom bubbling rate on formation of metal emulsion in Al-Cu alloy / salt system
Proceedings of the 163\textsuperscript{rd} Spring Meeting of Iron & Steel Institute of Japan, CAMP-ISIJ, 25(2012), 312
Thesis

Master Course

Koutaro Ishii
Interfacial tension between low melting point metal and molten salt/oxide for investigating the formation of metal emulsion

Hiromune Takeuchi
Dephosphorization Behavior of Hot Metals by using Multiphase Fluxes

Jun Takekawa
Equilibrium between (CaO)-SiO₂-MgO-FeO-MnO-P₂O₅ slag and Fe-Mn oxysulfide

Gaku Miyano
Composition change of inclusion by Slag-Molten Steel Reaction

Patent

Shin-ya Kitamura
Methods and equipment to extract phosphorus in steelmaking slag
Filing Number of Application; P20100338, 特願 2011−103597