

**グローバルCOEプログラム**  
**東北大学「材料インテグレーション国際教育研究拠点」**  
**若手研究者研究報告会**

日時：平成20年3月14日（金）9：30～17：15

場所：金属材料研究所2号館講堂・会議室（仙台市青葉区片平2-1-1）

**プログラム**

9：30～9：40 挨拶 拠点リーダー 東北大学金属材料研究所教授 後藤 孝

9：40～10：20 グローバルCOE活動報告（4名、報告10分） 司会 後藤教授

- |   |             |           |     |       |
|---|-------------|-----------|-----|-------|
| ① | 9：40～9：50   | 工学研究科     | 教授  | 原 信義  |
| ② | 9：50～10：00  | 理学研究科     | 准教授 | 松井 広志 |
| ③ | 10：00～10：10 | 多元物質科学研究所 | 教授  | 蔡 安邦  |
| ④ | 10：10～10：20 | 金属材料研究所   | 教授  | 川崎 雅司 |

10：20～10：30 休憩

10：30～11：45 COEフェローによる研究報告（5名、発表10分・質疑応答5分） 司会 川崎教授

- |   |             |              |  |  |
|---|-------------|--------------|--|--|
| ① | 10：30～10：45 | 田中 優樹        | Shape memory effect and superelasticity due to $\gamma / \alpha'$ thermoelastic martensitic transformation in Fe-Ni-Co-Al based alloys |  |
| ② | 10：45～11：00 | Yanhui LIU   | Intrinsic Ductility of Bulk Metallic Glasses: An Energetic Criterion   |  |
| ③ | 11：00～11：15 | Yuqiao Zeng  | Roles of Minor Element Additions on GFA and Mechanical Properties of High Ni-rich BMGs   |  |
| ④ | 11：15～11：30 | Haiying Wang | Influence of defects on the minority carrier diffusion length in Si multicrystals  |  |
| ⑤ | 11：30～11：45 | 佐藤 豊人        | Synthesis and Characterization of Novel Complex Hydrides   |  |

11：45～13：15 （昼食）

13：15～15：00 COEフェローによる研究報告（7名、発表10分・質疑応答5分） 司会 蔡教授

- |   |             |                      |   |  |
|---|-------------|----------------------|---|--|
| ⑥ | 13：15～13：30 | Hai Wang             | Preparation and characterization of carbon thin films for spin injection experiments                              |  |
| ⑦ | 13：30～13：45 | Justin Jian Ting Ye  | Fabrication and Characterization of Graphene Based Electronic-Double-Layer-Field-Effect-Transistor (EDLT) Devices |  |
| ⑧ | 13：45～14：00 | Can Cui              | Crystal growth of quasicrystal in Ag-In-Yb system by the Bridgman method  |  |
| ⑨ | 14：00～14：15 | Chakraverty Suvankar | Memory in a nano magnetic system  |  |
| ⑩ | 14：15～14：30 | M. A. I. Nahid.      | Large magnetic anisotropy and double switching behavior of Fe <sub>3</sub> Pt alloy thin films                    |  |
| ⑪ | 14：30～14：45 | Jingyu Gan           | Competing orders in self-doped bilayer cuprates   |  |
| ⑫ | 14：45～15：00 | Yansheng Gong        | Microstructure of TiN films prepared by Laser CVD   |  |

15：00～15：15 休憩

15：15～17：00 若手研究者によるポスターセッション（78名）

17：00～17：15 表彰式（講堂）

司会 原教授

## ポスターセッション

- P1 Nittaya Keawprak Thermoelectricity of Sr-Ru-O compounds prepared by SPS
- P2 成田 健吾 Mechanical properties of spinal fixture implant rods made of Ti-29Nb-13Ta-4.6Zr alloy subjected to various heat treatments
- P3 Dongling Wang Magnetization reversal process in nanostructured  $L1_0$ -FePt (001)
- P4 奥出 正樹 Synthesis of Ruddlesden-Popper phase oxide thin films by pulsed laser deposition
- P5 高野 琢 Correlation between  $T_c$  and interlayer spacing in  $Li_xM_yHfNCI$  ( $M$ : molecule) layered superconductors
- P6 高橋 勲 On the origin of generation of sub-grain boundaries in silicon multicrystals
- P7 松尾 元彰 Lithium super-ionic conduction in  $LiBH_4$  accompanied by structural transition
- P8 挽野 真一 Theoretical study of ac Josephson effect in a double barrier Josephson junction
- P9 小山田 隆行 Ab initio interpretation of Hund's rules and the analysis of correlation in consistency with the virial theorem
- P10 Junjie Guo In situ Raman scattering studies of high pressure transition in single crystal silicon
- P11 富尾 悠索 Plasma nitriding behavior of Fe-C-M martensitic steels
- P12 Jinsub Park Fabrication of Periodically Polarity-Inverted ZnO heterostructures
- P13 木村 博充 Influence of impurity doping on the partitioning of ionic species during the growth of  $LiNbO_3$  ionic crystal
- P14 Sungwook Joo In-situ Ellipsometric Analysis of Growth Processes of  $TiO_2$  Nanotube Films Formed by Anodization
- P15 宮村 剛夫 Diffusion behavior of metal/polyimide interface after thermal treatment under various conditions
- P16 真崎 邦崇 Evolution and thermal stability of microstructure in friction stir welded Al alloy
- P17 吉年 規治 The studies of Fe-based bulk metallic glasses synthesized by spark plasma sintering
- P18 宮脇 哲也 Magnetostatic interaction in Fe/Au/Fe trilayer rings in various Au thicknesses
- P19 青木 達也 Current Induced Magnetization Switching for Ferromagnetic Tunnel Junctions Using Ultra-fast Current Pulse
- P20 鮎川 晋也 Search for new superconductors in perovskite-type hydrides

- P21 知念 響 Phase equilibria in Co-Mo-Ti and Co-W-Ti ternary systems
- P22 Seongho Seok Equilibrium relation between  $T_i$  and  $Q$  in molten Fe-Ni alloy at 1873K
- P23 平田 直哉 Fluid flow and solidification simulation using particle method
- P24 最上 讓二 Effect of polymers as water structure maker or breaker on the visible light absorption spectra of phenol red solution
- P25 赤尾 慎吾 Study of Material Processing for Multiple-Gas Sensor System
- P26 柴田 顕弘 Comparison of Mg-Al-Ca-Mn Alloys and  $Mg_{96}Zn_2Y_2$  Alloy Produced by Thixomolding®
- P27 森 龍也 Terahertz time-domain spectroscopy of  $MgB_2$  thin film
- P28 矢野 貴明 Analysis of microstructure and deformation behavior in Gum Metal by advanced TEM
- P29 Sang-Hwui Hong Growth of high quality zinc oxide single crystal
- P30 田邊 豊和 Al-Cu-Fe quasi-crystal as a precursor of catalyst for steam reforming of methanol
- P31 G. B. Chon Characterization of Crystal Structure and Magnetic Properties of FCC-and HCP-Ni Powders Synthesized by using the Polyol Process
- P32 下位 法弘 Carbon Nanofiber Bundle Grown by Plasma Enhanced Chemical Vapor Deposition
- P33 Ragam Srinivasa Rao CW THz wave generation system based on pumping with narrow line-width diode lasers
- P34 新井 宏忠 Model Experiment on Turbulent Coagulation and Bubble Flotation of Inclusion Particles in Molten Metal
- P35 Jongbeom Lee Microstructure change and Texture evolution of magnesium alloys during differential speed rolling process
- P36 Subrojati Bosu Strong biquadratic coupling in  $Co_2MnSi$  based trilayer structures
- P37 杉原 敦 Structural characterization of NiO thin films prepared by reactive sputtering
- P38 郡司 遼佑 PEDOT:PSS Schottky contact on protected -c surface of ZnO by silane-coupling agent
- P39 東海林 雅俊 The effect of constitutional supercooling on the growth of Si faceted dendrite
- P40 He Men Soft Magnetic FeSiBPCu Hetero-amorphous Alloys with High Fe Content Exceeding the Limit of the Formation for a Single Amorphous Phase

- P41 Seunghwan Park Incorporation kinetics of nitrogen atoms into P-MBE grown ZnO
- P42 Hyun-Jae Lee Fabrication of free-standing GaN substrate using self-separation technique
- P43 瀧川 俊介 Corrosion mechanism of pure magnesium under atmospheric condition
- P44 ZhenHua Dan An electrochemical study on initiation of atmospheric corrosion on aluminum alloy 6061 in a cyclic wet-dry condition
- P45 Yu Zhang Microstructural characteristics and mechanical properties of Ti-6Al-4V friction stir welds
- P46 Uceu Fuad Hasan Suhuddin Effect of tool shoulder diameter on texture formation during friction stir welding
- P47 H. Kwon Fabrication of Carbon Nanotubes Reinforced Aluminum Composites
- P48 窪田 崇秀 Magnetic properties of epitaxial Heusler alloy thin films
- P49 家形 諭 The Estimation of Spin-penetration Depth in Ferromagnetic Metals
- P50 田邊 洋一 Possible microscopic phase separation in both underdoped and overdoped regimes of  $\text{La}_{2-x}\text{Sr}_x\text{CuO}_4$
- P51 石川 博康 Martensitic Transformations and Magnetic properties in Pd-In-Fe shape memory alloys
- P52 Sundararajan.B Patch antenna coupled GaAs TUNNETT oscillators grown by molecular layer epitaxy
- P53 丹野 則彦 Hydration Characteristics of Charged Polymer in Water
- P54 Hassan Ghassemi Armaki Assessment of premature creep failure of advanced high Cr ferritic steels
- P55 常包 将史 TEM observation of vacancy clustering process in FeAl single crystal
- P56 Ki Hyun Kim Evaluation of charging effect on non-conductive materials by electron holography
- P57 片岡 理樹 High Pressure Synthesis of Novel Hydride in Li-RE systems (RE = Y, La)
- P58 小澤 祐市 Transverse mode conversion by second harmonic generation using axially symmetric, polarized laser beams
- P59 Seung-Min Chung Effects of pore size, porosity and surface treatment on the self-forming barrier process in porous SiOCH with Cu-Mn alloys
- P60 佐藤 嘉 Effect of Nitrogen addition on the Microstructure in Hot-Pressed Co-Cr-Mo alloy compacts

- P61 相馬 康孝 Electrochemical Properties of Titanium in PEFC Separator Environment
- P62 澤田 朋樹 Modeling for numerical analysis of macro segregation in directional solidification
- P63 安藤 佳祐 High Temperature Shape Memory Effect in Co-Al Based Ternary Alloys with HCP Stabilizing Elements
- P64 Xue Li EFFECT OF Cr ADDITION ON THE PROPERTIES OF  $(\text{Fe}_{0.76}\text{P}_{0.048}\text{B}_{0.096}\text{Si}_{0.096})_{100-x}\text{Cr}_x$  ( $x=0\sim 6$  at %) BULK METALLIC GLASSES: THE GLASS-FORMING ABILITY, MAGNETIC, MECHANICAL AND CORROSION PROPERTIES
- P65 上田 恭介 Evaluation of calcium phosphate films coated on titanium using RF magnetron sputtering
- P66 黒須 信吾 Isothermal Transformation from FCC to HCP in Co-29Cr-6Mo Alloy
- P67 中野 匡規 Conducting polymer / ZnO Schottky junctions and their applications
- P68 伊東 航 Magnetic and electric properties under high magnetic field in NiCoMnIn metamagnetic shape memory alloy
- P69 佐藤 充孝 Apatite formation behavior of bio-ceramic films prepared by MOCVD
- P70 Lee GwangSeop Purification of  $\text{LaCl}_3$  by extraction chromatography using the D2EHPA impregnated resin
- P71 Xinyan Yue Effect of Foreign Element Substitution on the Dielectric Properties of  $\text{BaTi}_2\text{O}_5$  Prepared by Melt-Solidification
- P72 加藤 拓也 Hydrodynamic behaviors of inclusion particles in Molten Metal
- P73 柏倉 俊介 Speciation and Leaching Behavior Analysis of Environmental Regulated Substances in Coal Fly Ash
- P74 Yong Shao Corrosion Behaviour of  $[(\text{Fe}_{0.6}\text{Co}_{0.4})_{0.75}\text{B}_{0.2}\text{Si}_{0.05}]_{96}\text{Nb}_4$  Bulk Glassy Alloy in Sulphuric Acid Solutions
- P75 久保 裕也 Recovery of phosphorus from steelmaking slag with magnetic field
- P76 Hai Guo Synthesis and Thermal Stability of Au-based Bulk Metallic Glasses with Low Au Concentration
- P77 Yong-Soo Jeong Material Flow Analysis of Phosphorus with Korea Steel Industry
- P78 Gao Feng Experimental Investigation and Thermodynamic Assessment of Phase Equilibria in the Sn-Au-Bi System