

## ( 2 ) Laboratory for Advanced Materials

N : New / C : Continued

| No  | N or C | Titile                                                                                                                                                                | Leader                                              |               |                     | Host<br>Researcher                 |
|-----|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|---------------|---------------------|------------------------------------|
|     |        |                                                                                                                                                                       | Institution                                         | Status        | Name                |                                    |
| 101 | N      | Formation of oxide films by surface modification for new electrolytic capacitors                                                                                      | Grad. Sch. of Engin., Hokkaido Univ.                | Prof.         | Hideaki Takahashi   | Shinji Nagata                      |
| 102 | N      | Structural change and improve of reaction rate for $\text{NaAlSi}_3\text{O}_8$ and $\text{KAlSi}_3\text{O}_8$ crystals by shock-wave compression and mechanical grind | Fac. of Sci., Kanazawa Univ.                        | Prof.         | Masayuki Okuno      | Toshiyuki Atou                     |
| 103 | N      | Shock-Recovery Experiments of Mullite Ceramics                                                                                                                        | Mat. and Structures Lab., Tokyo Inst of Tech.       | Prof.         | Kenichi Kondo       | Toshiyuki Atou                     |
| 104 | C      | The preparation of the W-Cr alloy from mixed particles by shock compaction method                                                                                     | Fac. of engin., Tokyo Univ. of Tech.                | Associ. Prof. | Hiroshi Kedula      | Toshiyuki Atou                     |
| 105 | N      | Study of crystalization mechanism of amorphous semiconductors through metallic or Silicide phases                                                                     | Osaka Pref. Univ.                                   | Prof.         | Toyohiko Konno      | Koki Takanashi                     |
| 106 | C      | Low-temperature fabrication and domain structure observation of highly coercive FePt alloy films                                                                      | Akita Univ.                                         | Prof.         | Shunji Ishio        | Koki Takanashi,<br>Katsuhiko Asami |
| 107 | C      | Structure and properties of exchange spring magnet films and magnetic granular thin films                                                                             | Nat. Inst. for Mat. Sci.                            | Dir.          | Kazuhiro Hono       | Koki Takanashi                     |
| 108 | C      | Magnetism and transport properties of nanometer-sized ferromagnets under high pressure                                                                                | Kyushu Univ.                                        | Prof.         | Gendo Oomi          | Koki Takanashi                     |
| 109 | C      | Preparation of methanol steam reforming catalysts from amorphous alloy                                                                                                | Dept. of Appl. Chem. & Chem.Engin., Kagoshima Univ. | Prof.         | Takeshige Takahashi | Akihisa Inoue                      |
| 110 | C      | Spin fluctuation of $\text{R}_6(\text{Mn}_{1-x}\text{Si}_x)_{23}$ compounds in the temperature range of paramagnetism                                                 | Tohoku Univ.                                        | Prof.         | Kazuaki Fukamichi   | Koki Takanashi                     |
| 111 | C      | Research on bulk composite of rapid solidification sensor actuator material                                                                                           | Fac. of Sci. and Tech., Hirosaki Univ.              | Prof.         | Yasubumi Furuya     | Hisamichi Kimura,<br>Akihisa Inoue |
| 112 | N      | Bulk metallic glasses with high fatigue strength and toughness                                                                                                        | Ube Nat. Coll. of Tech.                             | Prof.         | Kazutaka Fujita     | Katsuhiko Asami,<br>Akihisa Inoue  |
| 113 | N      | Spark plasma sintering of sintering-hard biomaterials and their evaluation                                                                                            | Hokkaido Univ. Grad. Sch. of Dental Med.            | Prof.         | Fumio Watari        | Hisamichi Kimura                   |
| 114 | N      | Structural relaxation behavior of bulk Zr-based metallic glasses                                                                                                      | Fac. of Sci. and Tech., Tokyo Univ. of Sci.         | Prof.         | Osami Haruyama      | Akihisa Inoue                      |
| 115 | N      | Growth of new advanced crystals and development of these applications                                                                                                 | Fac. of Engin., Yamaguchi Univ.                     | Assoc. Prof.  | Ryuichi Komatsu     | Toetsu Shishido                    |

| No  | N or C | Title                                                                                                                                                                           | Leader                                                                |              |                    | Host Researcher                                 |
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|     |        |                                                                                                                                                                                 | Institution                                                           | Status       | Name               |                                                 |
| 116 | N      | Physical and chemical reaction between metal-ceramics interface of bioimplant in simulated body fluid                                                                           | Engin. Tohoku. U.                                                     | Prof.        | Hisayuki Narushima | Katsuhiko Asami                                 |
| 117 | N      | Influence of hydrogen in hydrogenated amorphous silicon film on photo reaction of organic color pigment                                                                         | Engin. Akita U.                                                       | Lectr.       | Yutaka Tsujiuchi   | Takashi Goto                                    |
| 118 | N      | Ferroelectric thin films for optical memory                                                                                                                                     | Hachinohe Inst. Tech.                                                 | Prof.        | Yoichiro Masuda    | Takashi Goto                                    |
| 119 | N      | Deposition of Cu films for LSI interconnects using plasma CVD                                                                                                                   | Inst. of Fl. Sci., Tohoku Univ.                                       | Prof.        | Seiji Sabukawa     | Masaoki Oku                                     |
| 120 | C      | Study on the relationship between the structural fluctuations and magnetism in ternary alloys CuMPt <sub>6</sub> (M=3d metals)                                                  | Grad. Sch. of Pure and Appl. Sci.s, Univ. of Tsukuba                  | Prof.        | Kenichi Ohshima    | Toetsu Shishido                                 |
| 121 | C      | Physical properties of high purified glassy alloy                                                                                                                               | Fac. of Engin., Himeji Inst. of Tech.                                 | Lectr.       | Yoshihiko Yokoyama | Toetsu Shishido                                 |
| 122 | C      | Preparation and Characterization of indium oxide transparent conducting crystals                                                                                                | Dept. of Indus. Chem., Master Sch. of Engin., Tokyo Polytechnic Univ. | Prof.        | Yutaka Sawada      | Toetsu Shishido                                 |
| 123 | N      | Crystal growth and physico-chemical properties of higher borides with alkali metals                                                                                             | Fac. of Engin., Kokushikan Univ.                                      | Prof.        | Shigeru Okada      | Toetsu Shishido                                 |
| 124 | N      | Preparation of transparent and conductive magnetic-In <sub>2</sub> O <sub>3</sub> by doping of M (M: Fe, Mn, Ho, Eu)                                                            | Depat. of Mat. Sci., Kyusyu Inst. of Tech.                            | Prof.        | Shigemi Kohiki     | Toetsu Shishido                                 |
| 125 | N      | Ratio of boron and carbon in Perovskite-type borocarbide and its relation with mechanical, electrical and thermal property                                                      | Fac. of Engin., Kanagawa Univ.                                        | Lectr.       | Kunio Kudou        | Toetsu Shishido                                 |
| 126 | N      | Growth of calcium molybdate whiskers from a sodium chloride flux                                                                                                                | Fac. of Engin., Shinshu Univ.                                         | Prof.        | Shuji Oishi        | Toetsu Shishido                                 |
| 127 | N      | Transport phenomena of perovskite type YRh <sub>3</sub> B <sub>x</sub> C <sub>1-x</sub> compound                                                                                | Iwaki Meisei Univ.                                                    | Prof.        | Yoshio Ishizawa    | Toetsu Shishido                                 |
| 128 | N      | Optical application of single crystals and nanoparticles of ZnO and Ga <sub>2</sub> O <sub>3</sub>                                                                              | NanoMaterials Lab., Nat. Inst. for Mat. Res.                          | Gr. Dir.     | Takashi Sekiguchi  | Toetsu Shishido                                 |
| 129 | N      | Development of next-generation ultrafast scintillator materials                                                                                                                 | Inst. for Mat. Res., Tohoku Univ.                                     | Assoc. Prof. | Akira Yoshikawa    | Syuji Hanada, Katsuhiko Asami, Toetsu Shishido  |
| 130 | N      | Characterization of proton conducting films prepared slurry coating method                                                                                                      | Res. Inst., Chiba Inst. of Tech.                                      | Prof.        | Sadae Yamaguchi    | Katsuhiko Asami, Shinji Nagata, Toetsu Shishido |
| 131 | N      | Analysis of chemical bonding for ScRh <sub>3</sub> B <sub>x</sub> by electron density analysis using synchrotron radiation X-ray powder diffraction and theoretical calculation | WEBRAM, Nat. Inst. for Mat. Sci.                                      | Chief Engr.  | Masahiko Tanaka    | Toetsu Shishido                                 |

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| 132 | C      | Structural Properties of Perovskite-type $\text{ABO}_3$ due to Ionic Substitution                                                             | Fac. of Education, Hirosaki Univ.                                                                                            | Prof.        | Hiroyuki Horiuchi | Toetsu Shishido                |
| 133 | N      | Growth of single crystals of manganite complex oxides                                                                                         | Dept. of Mat. Sci., Toyohashi Univ. of Tech.                                                                                 | Prof.        | Naoki Kamegashira | Toetsu Shishido                |
| 134 | N      | Epitaxial growth of ZnO films on hydrothermal ZnO substrate by MO-CVD                                                                         | Sendai Nat. Coll. of Tech.                                                                                                   | Prof.        | Koichi Haga       | Toetsu Shishido                |
| 135 | N      | Growth and characterization of stoichiometric rare-earth sulfide and oxide single crystals                                                    | Nagaoka Univ. of Tech.                                                                                                       | Res. Assoc.  | Ariyuki Kato      | Toetsu Shishido                |
| 136 | N      | Investigation of hysteresis minor loop in plastically deformed ferromagnetic-metal single crystals                                            | Fac. of Engin., Iwate Univ.                                                                                                  | Prof.        | Seiki Takahashi   | Toetsu Shishido                |
| 137 | N      | Preparation of isotope-modified higher borides and control of their electrical transport properties                                           | Dept. Elect. and Inf Engin., Kinki Univ. Tech. Coll.                                                                         | Assoc. Prof. | Naoyuki Nogi      | Toetsu Shishido                |
| 138 | N      | Research and development of visible light sensitive photocatalysts                                                                            | Nat. Inst. for Mat. Sci.                                                                                                     | Assoc. Dir.  | Jinhua Ye         | Toetsu Shishido                |
| 139 | C      | Study on fabrication of tungsten alloys for study of transmutation effects of tungsten under fusion reactor and study of irradiation behavior | Grad. Sch. of Engin., Tohoku Univ.                                                                                           | Assoc. Prof. | Akira Hasegawa    | Toetsu Shishido                |
| 140 | N      | Growth and scintillation characteristics of new single crystal materials                                                                      | ZAIKEN, Waseda Univ.                                                                                                         | Dir.         | Noboru Ichinose   | Toetsu Shishido                |
| 141 | N      | Formation of amorphous anodic titania and its application to solid capacitor                                                                  | Grad. Sch. of Engin., Hokkaido Univ.                                                                                         | Assoc. Prof. | Hiroki Habazaki   | Katsuhiko Asami, Shinji Nagata |
| 142 | N      | Preparation of standard materials for electron probe micro X-ray analysis                                                                     | Dept. of Appl. Chemi., Grad. Sch. of Engin., Osaka City Univ.                                                                | Assoc. Prof. | Kouichi Tsuji     | Katsuhiko Asami                |
| 143 | N      | Development and surface characterization of dental casting titanium alloys                                                                    | Dept. of Dental Mat. Sci., Tokyo Dental Coll.                                                                                | Res. Assoc.  | Shinji Takemoto   | Masaoki Oku, Katsuhiko Asami   |
| 144 | C      | Electric conduction and magnetic property for chromium chalcogenides                                                                          | Fac. of Engin., Yamagata Univ.                                                                                               | Assoc. Prof. | Yoshiya Adachi    | Katsuhiko Asami                |
| 145 | N      | Designing of nitride hard materials and synthesis by PVD method                                                                               | Joining and Welding Res. Inst., Osaka Univ.                                                                                  | Assoc. Prof. | Yukio Makino      | Katsuhiko Asami                |
| 146 | C      | Development of bulk metallic glassy brazing filler for Ti-based biomaterials                                                                  | Dept. of Developmental and Reconstructive Med. Course of Medi. and Dental Sci., Grad. Sch. of Biomedical Sci. Nagasaki Univ. | Res. Assoc.  | Eri Miura         | Katsuhiko Asami                |
| 147 | N      | Microstructure and magnetic properties for the Co-based alloy films with composite under-layer of controlled surface energy                   | Fac. of Engin., Yamagata Univ.                                                                                               | Res. Assoc.  | Kunihiro Koike    | Katsuhiko Asami                |

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| 148 | C      | Development of biocompatible surface on metallic materials using sputtering techonique | Inst. of BioMat. and Bioengineering, Tokyo Medi. and Dental Univ. | Vice-Head of Center | Takao Hanawa    | Katsuhiko Asami, Masaaki Oku                |
| 149 | C      | Preparation of highly corrosion-resistant compositionally graded coatings              | The Oarai Branch, Inst. for Mat. Res., Tohoku Univ.               | Assoc. Prof.        | Asahi Kawashima | Katsuhiko Asami, Masaaki Oku, Akihisa Inoue |