

AMTC2: Poster Presentations

Interfaces and Grain Boundaries

No.

- | | |
|-----|---|
| 001 | STEM Imaging and High-Resolution Elemental Mapping of La-doped SrTiO ₃ Super Lattice Thin Film

<i>M. Saito, ZC. Wang, S. Tsukimoto, T. Mizoguchi, M. Okude, A. Ohtomo, T. Kita, M. Kawasaki, Y. Ikuhara</i> |
| 002 | Quantum Electron Transport through Functional Interfaces

<i>Z. Wang, S. Tsukimoto, M. Saito, Y. Ikuhara</i> |
| 003 | Local Phonon Thermal Conductivity in the Vicinity of $\Sigma 5$ (310)/[001] Symmetric Tilt Grain Boundary in ZrO ₂

<i>Y. Koashi, M. Yoshiya, M. Tada, Y. Yoshizawa, H. Yasuda</i> |
| 004 | Segregation of Trivalent Impurities and Resultant Ionic Conductivity at $\Sigma 5$ (310)/[001] Symmetric Tilt Grain Boundary of ZrO ₂

<i>Y. Yoshizawa, M. Yoshiya, H. Yasuda</i> |
| 005 | Structure of a Praseodymium-Doped Zinc Oxide Grain Boundary: An Atomic Level Study

<i>Y. Sato, T. Mizoguchi, N. Shibata, T. Yamamoto, T. Hirayama, Y. Ikuhara</i> |
| 006 | Nonstoichiometry and the atomic structures of grain boundaries in SrTiO ₃

<i>H. Lee, T. Mizoguchi, J. Mitsui, T. Yamamoto, S.-J. L. Kang, Y. Ikuhara</i> |
| 007 | Yttrium segregation at alumina grain boundaries

<i>T. H. Kweon, S. Azuma, N. Takahashi, N. Shibata, T. Mizoguchi, T. Yamamoto, Y. Ikuhara</i> |
| 008 | Characterization of ONO structure using Electron Energy Loss Spectrum for Si L edge chemical shifts

<i>N. Hashikawa, M. Kawakami, K. Asayama</i> |
| 009 | Atomic Arrangement at 3C-SiC/Si (100) Interface Analyzed by Aberration-Corrected Transmission Electron Microscopy and <i>Ab Initio</i> Calculations

<i>S. Inamoto, J. Yamasaki, H. Tamaki, K. Okazaki-Maeda, N. Tanaka</i> |
| 010 | Structural Transition of [001] Symmetric Tilt Grain Boundaries in Nb-Doped SrTiO ₃

<i>S.-Y. Choi, T. Mizoguchi, N. Shibata, T. Yamamoto, Y. Ikuhara</i> |
| 011 | Coincidence of Reciprocal Lattice Point Model For General Orientation Relationships in Hetero systems

<i>C. M. Montesa, T. Tohei, N. Shibata, K. Akiyama, Y. Kuromitsu, Y. Ikuhara</i> |
| 012 | Automated Mapping of Lattice Parameters and Lattice Bending Strain Near a SiGe/Si Interface by Using Split HOLZ Lines Patterns

<i>K. Saitoh, Y. Yasuda, M. Hamabe, N. Tanaka</i> |
| 013 | Interface analysis of LiCoO ₂ positive electrode/Li ₇ La ₃ Zr ₂ O ₁₂ solid electrolyte

<i>K. H. Kim, Y. Iriyama, K. Yamamoto, S. Kumazaki, T. Asaka, K. Tanabe, T. Hirayama, R. Murugan, Z. Ogumi</i> |

014	STEM/TEM analysis of atomic structures in SrTiO ₃ [110] symmetrical tilt grain boundary <i>T. Mitsuma, N. Shibata, T. Mizoguchi, T. Tohei, T. Yamamoto, Y. Ikuhara</i>
015	Atomic Structure and the Oxygen Vacancy Formation in CeO ₂ [100](210) Σ5 Grain Boundary <i>H. Hojo, T. Mizoguchi, H. Ohta, N. Shibata, T. Yamamoto, Y. Ikuhara</i>
016	TEM analysis of thin film electrode/glass ceramic solid-electrolyte interfaces <i>K. Tanabe, Y. Iriyama, K. Yamamoto, T. Asaka, K. H. Kim, T. Hirayama, Z. Ogumi</i>
017	First principles and HAADF-STEM study on [001](310) Σ5 Grain Boundaries of perovskite oxides <i>T. Mizoguchi, M. Imaeda, Y. Sato, H. Lee, T. Yamamoto, Y. Ikuhara</i>
018	Atomic-resolution 3D STEM characterization of individual dopant atoms in ceramic grain boundaries <i>N. Shibata, S. D. Findlay, S. Azuma, T. Mizoguchi, T. Yamamoto, Y. Ikuhara</i>
019	Structural analysis of PLD and MBE grown BaFe ₁₂ O ₁₉ films on SiC <i>V. K. Lazarov, Z. Cai, K. Yoshida, P. Hasnip, K. S. Ziemer</i>
020	Atomic-level structure of a Ti-rich intergranular layer in BaTiO ₃ ceramics revealed by STEM <i>S. Zheng, R. Huang, K. Du, X. Ma, T. Hirayama, Y. Ikuhara</i>
021	WC/Co Interface Structure in Cemented Carbides doped with VC, NbC and ZrC <i>T. Yamamoto, I. Sugiyama, Y. Yamanaka, T. Taniuchi, F. Shirase, T. Tanase, Y. Ikuhara</i>
022	First Principles Calculations of Grain Boundaries in LiCoO ₂ <i>C. A. J. Fisher, R. Huang, A. Kuwabara, H. Moriwake, Y. H. Ikuhara, Y. Ikuhara, H. Oki</i>

Electron Holography, Lorentz Microscopy, and Environmental TEM

No.	
023	TEM observation of structure and growth of the tungsten oxide nanorods <i>T. Tokunaga, T. Kawamoto, K. Tanaka, Y. Hayashi, K. Sasaki, K. Kuroda</i>
024	Fourier Analysis of Deformations of Catalytic Gold Nanoparticles during CO Oxidation <i>T. Kawasaki, T. Miura, T. Tanji</i>
025	Development of an Environmental TEM and specimen holders for a wide range of atmospheres and temperatures <i>T. Yaguchi, A. Watabe, Y. Nagakubo, K. Ueda, M. Fukui, T. Kamino, T. Kawasaki</i>
026	In-situ TEM observation of structure changes of Pt particle on CeO ₂ by exposing gases <i>T. Akita, S. Tanaka, K. Tanaka, M. Kohyama, M. Haruta</i>
027	TEM Characterization of Sintered Copper Nanoparticles Covered by Biopolymer Nanoskin <i>K. Ida, K. Sasaki, Y. ugiyama, Y. Chujyo, T. Tokunaga, M. Tomonari, T. Yonezawa, K. Kuroda</i>
028	Quantitative Magnetization States of Colloidal Systems via Simplified-LLG and Model-based Fitting of Phase Images <i>M. Beleggia, A. Alpers, T. Kasama, H. F. Poulsen, R. E. Dunin Borkowski</i>

- 029 Investigation of sample heater material for super high temperature in-situ TEM observation in oxygen existing atmosphere
T. Tokunaga, K. Kimura, D. Kotani, K. Sasaki, K. Kuroda
- 030 Electron Holographic Observation of Dipolar Ferromagnetic Structures in Magnetic Nanoparticle Monolayers
K. Yamamoto, S. A. Majetich, M. Sachan, S. Yamamuro, M. R. McCartney, T. Hirayama
- 031 Electrostatic potential analysis of ferroelectrics using convergent-beam electron diffraction and electron holography
K. Tsuda, F. Röder, A. Lubk, D. Wolf, D. Geiger, H. Lichte
- 032 Aberration Correction in Dynamic In-situ Studies of Nanoparticles
E. D. Boyes, K. Yoshida, M. Walsh, P. L. Gai

Advanced Microscopy

No.

- 033 Dynamics of Annular Bright Field Scanning Transmission Electron Microscopy Imaging
S. D. Findlay, N. Shibata, H. Sawada, E. Okunishi, Y. Kondo, Y. Ikuhara
- 034 Recent development in EELS spectrometer technology
A. Maigne, M. Rabara
- 035 Optimisation of the TEM Sample Preparation from Diamond Using Focused Ion Beam Technique
S. Rubanov
- 036 Charge transfer analysis by EELS
A. Maigne, R. Yuge
- 037 Development of a double-tilt stage-scanning sample holder for scanning confocal electron microscopy of single crystal samples
M. Takeguchi, A. Hashimoto, K. Mitsuishi, X. Zhang, M. Shimojo, T. Ishikawa, S. Deguchi, T. Naruse, Y. Kondo
- 038 Development of a new segmented STEM detector system
Y. Kohno, N. Shibata, H. Sawada, S. D. Findlay, Y. Kondo, Y. Ikuhara
- 039 Three-Dimensional Analysis of Nanoparticles using Annular Dark-Field Scanning Confocal Electron Microscopy Established in a Double Aberration-Corrected Microscope
A. Hashimoto, P. Wang, M. Shimojo, K. Mitsuishi, A. I. Kirkland, P. D. Nellist, M. Takeguchi
- 040 Reconstruction of Crystalline Structures by Electron Diffractive Imaging
S. Morishita, J. Yamasaki, T. Kato, N. Tanaka
- 041 Geometrical Electron Optics of the Shadow Image Distortion Method in a Transmission Electron Microscope
K. Sasaki, N. Tanaka, H. Mori, H. Murata, C. Morita, H. Shimoyama, K. Kuroda
- 042 Determination of a Lattice Strain Field by Iterative Phase Retrieval of Rocking Curves of HOLZ Reflections
K. Saitoh, M. Hamabe, S. Morishita, J. Yamasaki, N. Tanaka

- 043 Development and Performance of an Aberration-corrected 30-60 kV TEM/STEM with a Cold Field Emission Gun
T. Sasaki, H. Sawada, F. Hosokawa, Y. Kohno, T. Tomita, T. Kaneyama, Y. Kondo, K. Kimoto, Y. Sato, K. Suenaga
- 044 Observation of Anomalous Kikuchi Patterns by Column-by-Column CBED
Y. Tatara, K. Saitoh, N. Tanaka
- 045 Quantitative Measurements of Porous Titania Photocatalysts by Advanced Electron Microscope
K. Yoshida, E. D. Boyes, P. L. Gai, N. Tanaka
- 046 Three-Dimensional Nanostructure of Size-controlled Metallic Nanodots on Sintered Titania Photocatalysts
K. Yoshida, S. Sueda, N. Tanaka
- 047 Observations of Atomic Columns in Compounds by Image Subtraction & Deconvolution Processing of Aberration-Corrected HRTEM Images
J. Yamasaki, S. Inamoto, H. Tamaki, N. Tanaka
- 048 Structural Analysis of Si₃N₄ by ABF-STEM Technique
K. Fukunaga, T. Saito, T. Hirayama, Y. Ikuhara
- 049 High Angle Resolution Site-selective EELS by Incident Beam Rocking
K. Tatsumi, I. Nishida, S. Muto, J. Ruz
- 050 Observation of the Anisotropy of Inelastic Scattering Cross-Section of the Boron K-shell Excitation of MgB₂
K. Momonoi, K. Saitoh, N. Tanaka

Modeling and Simulations

No.

- 051 First principles and classical molecular dynamics studies for oxygen grain boundary diffusion in sapphire
N. Takahashi, T. Mizoguchi, T. Nakagawa, T. Yamamoto, Y. Ikuhara
- 052 First-principles Analysis of Carbon Diffusion in Ferromagnetic bcc-Fe
M. Ikeda, T. Yamasaki, C. Kaneta
- 053 Density Functional Study of Ti Antisites in SrTiO₃, BaTiO₃, and PbTiO₃
M. Choi, F. Oba, I. Tanaka
- 054 First-Principles Study of Magnetism and Electronic Structure in Eu²⁺ Perovskite Oxides
H. Akamatsu, Y. Kumagai, F. Oba, K. Fujita, K. Tanaka, I. Tanaka
- 055 Electronic Structure of Mg-Doped SrTiO₃ from First Principles
W. Zeng, T. Liu, Z. Wang, S. Tsukimoto, Y. Ikuhara
- 056 Cluster Model Calculation of Ni-rich Al-Co-Ni Quasicrystal
K. Soda, M. Inukai, M. Kato, S. Yagi
- 057 Local distortion in defective fluorite Bi₂O₃ derived by first principles lattice dynamics calculations
A. Matsumoto, Y. Koyama, I. Tanaka

- 058 Phase-Field Modeling of Microstructure Changes in FePt Nano-Granular Structure and Calculation of Magnetic Property
T. Koyama
- 059 Local Environment Study of Dopants in Hydroxyapatite Using XANES and First-Principles Calculations
H. Murata, K. Shitara, Y. Emi, X. Wang, I. Tanaka, T. Mizoguchi, A. Nakahira, K. Matsunaga
- 060 Multiscale Analysis of Crack Propagation Using the Hybrid MD-CGP Method
R. Kobayashi, T. Nakamura, S. Ogata
- 061 Defect complex of trivalent dopant and resultant proton in BaZrO₃ by first principles calculations with an aid of force-field calculations
K. Nakano, M. Yoshiya, T. Okabayashi, H. Yasuda
- 062 Material design for high temperature use ultrasonic probe material by first principles calculation
K. Nakamura, S. Higuchi, T. Ohnuma T. Ogata
- 063 Ground-State Structures in MgO-NiO Crystalline Solutions
Y. Kumagai, A. Seko, F. Oba, I. Tanaka
- 064 Phase Field Calculations of Domain Selection Following Order-Disorder Transition in FePd under External Field
N. Ueshima, M. Yoshiya, H. Yasuda
- 065 Mechanism of point defect formation in Na_xCoO₂ by first principle calculation with GGA+U
T. Okabayashi, M. Tada, M. Yoshiya
- 066 Electronic and Optical Properties of Polycrystalline Metal-oxide Materials
K. P. McKenna, A. L. Shluger
- 067 Theoretical calculation of structures and stability of layered titanates as precursor of nanotubes
M. Mori, Y. Kumagai, K. Matsunaga, I. Tanaka
- 068 Numerical Analyses on Realization of Low Thermal Conductivity without Degrading High Electronic Conductivity in Na_{0.5}CoO₂
M. Tada, M. Yoshiya, H. Yasuda
- 069 First-principles calculations of EELS spectra by the PAW method
S. Tanaka, T. Tamura, S. Ishibashi, M. Kohyama
- 070 Quantitative Analysis of Point Defects in an Ideal Quasicrystal with Aberration-Corrected STEM and First-Principles Calculations
T. Seki, E. Abe, S. J. Pennycook
- 071 First-principles calculations of Li migration in LiCoO₂ using the GGA+U approach
H. Moriwake, A. Kuwabara, C. A. J. Fisher, R. Huang, Y. H. Ikuhara, Y. Ikuhara, H. Oki
- 072 Electrochemical Potential Windows of Supercapacitor Electrolytes from First-Principles Calculations
H. Maeshima, C. A. J. Fisher, A. Kuwabara, H. Moriwake
- 073 First Principles Calculations of Charge-Ordered LiNi₂O₄ Spinel
A. Kuwabara, C. A. J. Fisher, R. Huang, Y. H. Ikuhara, H. Moriwake, Y. Ikuhara, H. Oki

AMTC2 Special: Frontiers of Materials Science

No.

- 074 Access semiconductor bandgaps at atomic resolution?
L. Gu, W. Sigle, P. A. van Aken, S. Tsukimoto, Y. Ikuhara
- 075 Direct Imaging of Interstitials in $(\text{La}_{0.6}\text{Er}_{0.4})_5\text{Ni}_{19}$ Complex Compound
R. Ishikawa, E. Abe
- 076 HRTEM Observations of Stacking Fault on the {1-100} Planes in Sapphire ($\alpha\text{-Al}_2\text{O}_3$)
E. Tochigi, N. Shibata, A. Nakamura, T. Mizoguchi, T. Yamamoto, Y. Ikuhara
- 077 Determination of a Unique Long-period Ordered Structure in a $\text{Mg}_{97}\text{Zn}_1\text{Er}_2$ Alloy by Aberration-corrected STEM
D. Egusa, E. Abe
- 078 Stability of Dislocations and Propagation of Shear Transformation Zone in a Model Metallic Glass
A. Nakamura, T. Yoshihara, Y. Kamimura, K. Edagawa, S. Takeuchi
- 079 Effect of Doping Elements on Mass Transfer in Alumina Ceramics under Oxygen Potential Gradients at Ultra-High Temperatures
S. Kitaoka, T. Matsudaira, M. Wada
- 080 Quantitative Site Occupancy Determination of Multi-Rare-Earth Elements Doped in Ca_2SnO_4 Phosphor by Electron Channeling Microanalysis
Y. Fujimichi, S. Muto, K. Tatsumi, H. Yamane, T. Kawano
- 081 Formation of Fe nanowires along dislocations in Si
R. Takenaka, Y. Kamimura, K. Edagawa, I. Yonenaga
- 082 Microstructure and Thermal Stability of (Fe-Co-Si)-(Al-F) Nanogranular Thin Films with Tunnel-Type Magnetoresistance
S. Tsukimoto, N. Kobayashi, M. Saito, K. I. Arai, Y. Ikuhara, T. Masumoto
- 083 Synthesis of Mn-doped Ga_2O_3 Epitaxial Thin Film with Spinel Structure
H. Hayashi, R. Huang, X. Wang, F. Oba, T. Hirayama, I. Tanaka
- 084 Microstructural Characterization of Oxide Scales Thermally Formed on Single Crystal Silicon Carbide
B. Chayasombat, T. Kato, T. Hirayama, T. Tokunaga, K. Sasaki, K. Kuroda
- 085 Consideration on the optimum implantation conditions of nitrogen for visible light responsive TiO_2 photocatalyst
E. Kuda, T. Yoshida, S. Muto
- 086 Growth and Characterization of Zn/ZnO Coreshell Nanowires by Plasma-Assisted Molecular Beam Epitaxy
T. Iijima, B. Jang, T. Tokunaga, Y. Hayashi, R. A. Afre, C. W. Tan, B. K. Tay, M. Tanemura, T. Soga, K. Kuroda
- 087 TEM analysis of SiC crystal grown on (001) 3C-SiC CVD substrate by solution growth
K. Morimoto, R. Tanaka, K. Seki, T. Tokunaga, T. Ujihara, K. Sasaki, Y. Takeda, K. Kuroda

- 088 Local chemical changes associated with cycling tests in $\text{LiNi}_{0.8}\text{Co}_{0.15}\text{Al}_{0.05}\text{O}_2$ studied by STEM-EELS
Y. Kojima, S. Muto, K. Tatsumi, H. Kondo, K. Horibuchi, Y. Takeuchi
- 089 Influences of the titanium doping on 2° tilt grain boundaries in LiNbO_3
A. Nakamura, I. Okawa, J. Nakamura, E. Tochigi, I. Kishida, Y. Yokogawa
- 090 Fabrication and Characterization of Mo-SiO₂ Composite
H. Razavi, K. Yamada, T. Katayama, N. Saito, K. Nakashima, K. Kaneko
- 091 STEM observation of LiMn_2O_4 nanopowder made by chemical solution method
*R. Huang, Y. H. Ikuhara, T. Mizoguchi, S. D. Findlay, A. Kuwabara,
 C. A. J. Fisher, H. Moriwake, H. Oki, T. Hirayama, Y. Ikuhara*
- 092 Visualization of Invisible Fluorine Dopants in $\text{LaFeAsO}_{1-x}\text{F}_x$ by Atomic Scale EELS Spectrum Imaging
T. Tohei, T. Mizoguchi, H. Hiramatsu, Y. Kamihara, H. Hosono, Y. Ikuhara
- 093 Direct observation of carbon nanotubes growth
M. Lin, J. T. P. Ying, Y. L. Foo, J. Zhang, P. Wu
- 094 Transmission Electron Microscopy Study of $\text{Y}_x\text{Sm}_{1-x}\text{Ba}_2\text{Cu}_3\text{O}_y$ Coated Conductors Containing BaZrO_3 Particles
*T. Kato, R. Yoshida, T. Hirayama, M. Miura, M. Yoshizumi,
 Y. Yamada, T. Izumi, Y. Shiohara*
- 095 Ag-Cluster Formation by High Energy Corpuscular Irradiation of Ag-Zeolites
Y. Sasaki, M. Kobayashi, H. Kita, S. Okayasu
- 096 HRTEM and HAADF-STEM Observation of Ni-Nanoparticle-Dispersed Amorphous Silica
Y. H. Ikuhara, T. Saito, Y. Sasaki, S. Takahashi, T. Hirayama
- 097 XANES analysis of the valence states of Mn ions in $\text{Pr}_{1-x}\text{A}_x\text{MnO}_{3-\delta}$ (A=Ca, Sr)
H. Kanamori, K. Hirose, T. Yamamoto
- 098 3D analysis of pinning centers in superconductive $\text{GdBa}_2\text{Cu}_3\text{O}_{7-\delta}$
*K. Kaneko, K. Yamada, K. Furuya, S. Sadayama, J. S. Barnard,
 P. A. Midgley, T. Kato, T. Hirayama, M. Kiuchi,
 T. Matsushita, Y. Yamada, T. Izumi, Y. Shiohara*
- 099 Microstructure in MgB_2/Ni Alternately-Layered Superconducting Film
*S. Hata, H. Sosiati, Y. Shimada, T. Doi, A. Matsumoto,
 H. Kitaguchi, K. Ikeda, H. Nakashima*
- 100 Electrolytic synthesis of Al-doped ZnO powders with low electrical resistivity
*T. Takaki, K. Kurosawa, S. Sukenaga, N. Saito, H. Razavi, K. Kaneko,
 K. Nakashima, E. Okunishi, T. Hiraaki*