

# 4. Publication List

## Former 1A

S.Konno, K.Taniguchi, H.Sagayama and T.Arima

Electrical Control of In-Plane Anisotropy in Charge-Orbital Ordered State of Single-Layered Manganite  $\text{La}_{1/2}\text{Sr}_{3/2}\text{MnO}_4$   
Appl. Phys. Express, **2** (2009) 033004.

H.Nakao, J.Nishimura, Y.Murakami, A.Ohtomo, T.Fukumura, M.Kawasaki, T.Koida, Y.Wakabayashi and H.Sawa

Crystal Structure and Valence Distribution of  $[(\text{LaMnO}_3)_m(\text{SrMnO}_3)_n]$  Artificial Superlattices  
J. Phys. Soc. Jpn., **78** (2009) 024602.

D.Okuyama, Y.Tokunaga, R.Kumai, Y.Taguchi, T.Arima, and Y.Tokura

Lattice-Form-Dependent Orbital Shape and Charge Disproportionation in Charge- and Orbital-Ordered Manganites  
Phys. Rev. B, **80** (2009) 064402.

## Former 1B

T.Tajiri, M.Harazono, T.Kitamura, H.Deguchi, S.Kohiki, M.Mito, A.Kohno and S.Takagi

Magnetic Properties of  $\text{BiMnO}_3$  Nanoparticles in SBA-15 Mesoporous Silica  
J. Phys.: Conf. Ser., **150** (2009) 042198.

Y.Komorida, M.Mito, H.Deguchi, S.Takagi, A.Millan, N.J.O.Silva and F.Palacio

Surface and Core Magnetic Anisotropy in Maghemite Nanoparticles Determined by Pressure Experiments  
Appl. Phys. Lett., **94** (2009) 202503.

F.Mikami, K.Matsuda, H.Kataura and Y.Maniwa

Dielectric Properties of Water Inside Single-Walled Carbon Nanotubes  
ACS Nano, **3** (2009) 1279.

Y.Bando, T.Kawamoto, T.Mori, T.Kakiuchi, H.Sawa, K.Takimiya and T.Otsubo

Organic Superconductivity Enhanced by Asymmetric-Anion Random Potential in  $(\text{MDT-TS})\text{I}_{0.85}\text{Br}_{0.41}$  [MDT-TS = 5H-2-(1,3-diselenole-2-ylidene)-1,3,4,6-tetrathiapentalene]  
Chem. Mater., **21** (2009) 3521.

M.Mito, K.Matsumoto, Y.Komorida, H.Deguchi, S.Takagi, T.Tajiri, T.Iwamoto, T.Kawae, M.Tokita and K.Takeda

Volume Shrinkage Dependence of Ferromagnetic Moment in Lanthanide Ferromagnets Gadolinium, Terbium, Dysprosium, and Holmium  
J. Phys. Chem. Solids, **70** (2009) 1290.

M.Mito, S.Kawagoe, H.Deguchi, S.Takagi, W.Fujita, K.Awaga, R.Kondo and S.Kagoshima

Effects of Hydrostatic Pressure and Uniaxial Strain on Spin-Peierls Transition in an Organic Radical Magnet,  $\text{BBDTA-InCl}_4$   
J. Phys. Soc. Jpn., **78** (2009) 124705.

## Former 1C

K.Edamoto, H.Inomata, T.Shimada, K.Ozawa and S.Otani

Valence and Core-Level Photoelectron Spectroscopy Study of the Electronic Structure of  $\text{Ni}_2\text{P}(0001)$   
e-J. Surf. Sci. Nanotech., **7** (2009) 1.

K.Ozawa, Y.Oba, K.Edamoto, M.Higashiguchi, Y.Miura, K.Tanaka, K.Shimada, H.Namatame and M.Taniguchi

Valence-Band Structure of the Polar  $\text{ZnO}$  Surfaces Studied by Angle-Resolved Photoelectron Spectroscopy  
Phys. Rev. B, **79** (2009) 075314.

M.Takizawa, K.Maekawa, H.Wadati, T.Yoshida, A.Fujimori, H.Kumigashira and M.Oshima

Angle-Resolved Photoemission Study of Nb-Doped  $\text{SrTiO}_3$   
Phys. Rev. B, **79** (2009) 113103.

H.Wadati, A.Chikamatsu, H.Kumigashira, A.Fujimori, M.Oshima, M.Lippmaa, M.Kawasaki and H.Koinuma

*In situ* Photoemission Study of  $\text{Nd}_{1-x}\text{Sr}_x\text{MnO}_3$  Epitaxial Thin Films  
Phys. Rev. B, **79** (2009) 153106.

K.Ozawa, Y.Oba and E.Edamoto

Formation and Characterization of the  $\text{Cu}_2\text{O}$  Overlayer on Zn-Terminated  $\text{ZnO}(0001)$   
Surf. Sci., **603** (2009) 2163.

H.Wadati, A.Chikamatsu, M.Takizawa, H.Kumigashira, T.Yoshida, T.Mizokawa, A.Fujimori, M.Oshima and N.Hamada

Systematic Analysis of ARPES Spectra of Transition-Metal Oxides: Nature of Effective  $d$  Band  
J. Phys. Soc. Jpn., **78** (2009) 094709.

M.Takizawa, M.Minohara, H.Kumigashira, D.Toyota, M.Oshima, H.Wadati, T.Yoshida, A.Fujimori, M.Lippmaa, M.Kawasaki, H.Koinuma, G.Sordi and M.Rozenberg

Coherent and Incoherent  $d$  Band Dispersions in  $\text{SrVO}_3$   
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## 2C

H.Niwa, K.Horiba, Y.Harada, M.Oshima, T.Ikeda, K.Terakura, J.Ozaki and S.Miyata

X-Ray Absorption Analysis of Nitrogen Contribution to Oxygen Reduction Reaction in Carbon Alloy Cathode Catalysts for Polymer Electrolyte Fuel Cells  
J. Power Sources, **187** (2009) 93.

H.Wadati, A.Chikamatsu, H.Kumigashira, A.Fujimori, M.Oshima, M.Lippmaa, M.Kawasaki and H.Koinuma

*In situ* Photoemission Study of  $\text{Nd}_{1-x}\text{Sr}_x\text{MnO}_3$  Epitaxial Thin Films  
Phys. Rev. B, **79** (2009) 153106.

A.Sugishima, K.Nagaya, H.Iwayama, M.Yao, J.Adachi, Y.Kimura, M.Yamazaki and A.Yagishita

Dissociation Dynamics of  $\text{C}_6\text{H}_6$  and  $\text{C}_6\text{H}_5\text{F}$  Molecules Following Carbon  $1s$  and Fluorine  $1s$  Photoionization Studied by Three-Dimensional Momentum Imaging Method  
J. Chem. Phys., **131** (2009) 114309.

K.Yoshimatsu, K.Horiba, H.Kumigashira, E.Ikenaga and M.Oshima

Thickness Dependent Electronic Structure of  $\text{La}_{0.6}\text{Sr}_{0.4}\text{MnO}_3$  Layer in  $\text{SrTiO}_3/\text{La}_{0.6}\text{Sr}_{0.4}\text{MnO}_3/\text{SrTiO}_3$  Heterostructures Studied by Hard X-Ray Photoemission Spectroscopy  
Appl. Phys. Lett., **94** (2009) 071901.

M.Minohara, Y.Furukawa, R.Yasuhara, H.Kumigashira and M.Oshima

Orientation Dependence of the Schottky Barrier Height for  $\text{La}_{0.6}\text{Sr}_{0.4}\text{MnO}_3/\text{SrTiO}_3$  Heterojunctions  
Appl. Phys. Lett., **94** (2009) 242106.

R.Yasuhara, K.Fujiwara, K.Horiba, H.Kumigashira, M.Kotsugi, M.Oshima and H.Takagi

Inhomogeneous Chemical States in Resistance-Switching Devices with a Planar-Type  $\text{Pt}/\text{CuO}/\text{Pt}$  Structure  
Appl. Phys. Lett., **95** (2009) 012110.

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M.Kitamura, I.Ohkubo, M.Matsunami, K.Horiba, H.Kumigashira, Y.Matsumoto, H.Koinuma and M.Oshima

Electronic Structure Characterization of  $\text{La}_2\text{NiMnO}_6$  Epitaxial Thin Films using Synchrotron-Radiation Photoelectron Spectroscopy and Optical Spectroscopy  
Appl. Phys. Lett., **94** (2009) 262503.

K.Horiba, A.Maniwa, A.Chikamatsu, K.Yoshimatsu, H.Kumigashira, H.Wadati, A.Fujimori, D.Nomoto, S.Ueda, H.Yoshikawa, E.Ikenaga, J.J.Kim, K.Kobayashi and M.Oshima

Pressure-Induced Change in the Electronic Structure of Epitaxially Strained  $\text{La}_{1-x}\text{Sr}_x\text{MnO}_3$  Thin Films  
Phys. Rev. B, **80** (2009) 132406.

M.Matvejeff, K.Yoshimatsu, H.Kumigashira, M.Oshima and M.Lippmaa

Chemical Stability and Transport Properties of Ultrathin  $\text{La}_{1.2}\text{Sr}_{1.8}\text{Mn}_2\text{O}_7$  Ruddlesden-Popper Films  
Appl. Phys. Lett., **95** (2009) 152110.

M.Takizawa, M.Minohara, H.Kumigashira, D.Toyota, M.Oshima, H.Wadati, T.Yoshida, A.Fujimori, M.Lippmaa, M.Kawasaki, H.Koinuma, G.Sordi and M.Rozenberg

Coherent and Incoherent  $d$  Band Dispersions in  $\text{SrVO}_3$   
Phys. Rev. B, **80** (2009) 235104.

J.Adachi, M.Yamazaki, M.Kazama, Y.Ohori, T.Teramoto, Y.Kimura, A.Yagishita and T.Fujikawa

Low Kinetic Energy Photoelectron Diffractions for C 1s and O 1s Electrons of Free CO Molecules in the EXAFS Region  
J. Phys.: Conf. Ser., **190** (2009) 012049.

M.Yamazaki, J.Adachi, T.Teramoto, A.Yagishita, M.Sterner and P.Declève

3D Mapping of Photoemission from a Single Oriented H<sub>2</sub>O Molecule  
J. Phys. B, **42** (2009) 051001.

H.Wadati, A.Maniwa, A.Chikamatsu, H.Kumigashira, M.Oshima, T.Mizokawa, A.Fujimori and G.A.Sawatzky

Madelung Potentials and Covalency Effect in Strained La<sub>1-x</sub>Sr<sub>x</sub>MnO<sub>3</sub> Thin Films Studied by Core-Level Photoemission Spectroscopy  
Phys. Rev. B, **80** (2009) 125107.

M.Inukai, K.Soda, M.Kato, S.Yagi and Y.Yokoyama

Cluster Study of Al-Co-Ni Decagonal Quasicrystal  
Z. Kristallogr., **223** (2009) 851.

K.J.Zhou, Y.TeZuka, M.Q.Cui, J.Zhao, X.C.Liu, Z.Z.Chen and Z.Y.Wu

The Mechanism of Al Donor Defects in (Zn, Co)O:Al: a View from Resonant X-Ray Spectroscopies  
J. Phys.: Condens. Matter, **21** (2009) 495502.

G.He, S.Toyoda, Y.Shimogaki and M.Oshima

Chemical Bonding States and Band Alignment of Ultrathin AlO<sub>x</sub>N<sub>y</sub>/Si Gate Stacks Grown by Metalorganic Chemical Vapor Deposition  
Appl. Phys. Express, **2** (2009) 075503.

T.Tanimura, H.Kamada, S.Toyoda, H.Kumigashira, M.Oshima, G.L.Liu, Z.Liu and K.Ikeda

Effects of Thermal Annealing on Charge Density and N Chemical States in HfSiON Films  
Appl. Phys. Lett., **94** (2009) 082903.

T.Tanimura, S.Toyoda, H.Kamada, H.Kumigashira, M.Oshima, G.L.Liu, Z.Liu and K.Ikeda

Relationship between Band Alignment and Chemical States upon Annealing in HfSiON/SiON Stacked Films on Si Substrates  
Appl. Phys. Lett., **95** (2009) 183113.

T.Ando, T.Shimura, H.Watanabe, T.Hirano, S.Yoshida, K.Tai, S.Yamaguchi, H.Iwamoto, S.Kadomura, S.Toyoda, H.Kumigashira and M.Oshima

Mechanism of Carrier Mobility Degradation Induced by Crystallization of HfO<sub>2</sub> Gate Dielectrics  
Appl. Phys. Express, **2** (2009) 071402.

S.Toyoda, H.Kumigashira, M.Oshima, G.L.Liu, Z.Liu and K.Ikeda

In-Depth Profile of Hf-Based Gate Insulator Films on Si Substrates Studied by Angle-Resolved Photoelectron Spectroscopy using Synchrotron Radiation  
J. Surf. Anal., **15** (2009) 299.

### 3A

T.Arima

Diffraction Studies on the Origin of Giant Magneto-Electric Effects in Multiferroics  
J. Jpn. Soc. Synchrotron Rad. Res., **1** (2009) 3. (in Japanese).

T.Takahashi, T.Shirasawa, K.Sekiguchi and W.Voegeli

Study of the Interface Structure of Epitaxial Ultra-Thin Film by an X-Ray Holographic Imaging Method  
e-J. Surf. Sci. Nanotech., **7** (2009) 525.

T.Shirasawa, K.Sekiguchi, Y.Iwasawa, W.Voegeli, T.Takahashi, K.Hattori, A.N.Hattori, H.Daimon and Y.Wakabayashi

Interface Structure of an Epitaxial Iron Silicide on Si(111) Studied with X-Ray Diffraction  
e-J. Surf. Sci. Nanotech., **7** (2009) 513.

Y.Wakabayashi, H.Sagayama, T.Arima, M.Nakamura, Y.Ogimoto, Y.Kubo, K.Miyano and H.Sawa

Size of Orbital Ordering Domain Controlled by the Itinerancy of the 3d Electrons in a Manganite Thin Film  
Phys. Rev. B, **79** (2009) 220403(R).

K.Kimura, T.Otani, H.Nakamura, Y.Wakabayashi and T.Kimura

Lattice Distortion Coupled with Magnetic Ordering in a Triangular Lattice Antiferromagnet CuCrO<sub>2</sub>  
J. Phys. Soc. Jpn., **78** (2009) 113710.

S.Danjoh, J.-S.Jung, H.Nakamura, Y.Wakabayashi and T.Kimura

Anomalous Induction of Ferroelectric Polarization by Magnetization Reversal in the Phase-Separated Multiferroic Manganite Eu<sub>0.8</sub>Y<sub>0.2</sub>MnO<sub>3</sub>  
Phys. Rev. B, **80** (2009) 180408.

H.Nakao and Y.Murakami

Charge and Orbital Ordering in Strongly Correlated Electron System  
Kotai Butsuri, **44** (2009) 767. (in Japanese).

D.Okuyama, M.Nakamura, Y.Wakabayashi, H.Itoh, R.Kumai, H.Yamada, Y.Taguchi, T.Arima, M.Kawasaki and Y.Tokura

Epitaxial-Strain Effect on Charge/Orbital Order in Pr<sub>0.5</sub>Ca<sub>0.5</sub>MnO<sub>3</sub> Films  
Appl. Phys. Lett., **95** (2009) 152502.

T.Matsumura, T.Yonemura, K.Kunimori, M.Sera and F.Iga

Magnetic-Field-Induced 4f-Octupole in CeB<sub>6</sub> Probed by Resonant X-Ray Diffraction  
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Laihumite and Jarosite in the Yamato 00 Nakhilites: Alteration Product on Mars?  
J. Geophys. Res. Planets, **114** (2009) E10004.

### 3B

G.Kutluk, H.Ishijima, M.Kanno, T.Nagata and A.T.Domondon

A Systematic Study of Photoionization of Free Lanthanide Atoms in the 4d Giant Resonance Region  
J. Elec. Spec. Relat. Phenom., **169** (2009) 67.

T.Osawa, S.Obara, T.Nagata, Y.Azuma and F.Koike

Observation and Analysis of 3s-*np* Resonance Excitation in Cr, Mn and Fe Atoms  
J. Phys. B, **42** (2009) 085005.

O.Morimoto, H.Kato, Y.Enta and Y.Sakisaka

Photoemission from the Valence Bands of Ce(111) on W(110)  
Surf. Sci., **603** (2009) 2145.

H.Nakazawa, H.Sugita, Y.Enta, M.Suemitsu, K.Yasui, T.Ito, T.Endo, Y.Narita and M.Mashita

Atomic Hydrogen Etching of Silicon-Incorporated Diamond-Like Carbon Films Prepared by Pulsed Laser Deposition  
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K.Suzuki, M.Ito, N.Tsuji, H.Adachi and H.Kawata

An Experimental System of X-Ray Magnetic Diffraction at the Photon Factory  
Jpn. J. Appl. Phys., **48** (2009) 056506.

K.Hayashi, W.Hu, T.Nakamura, H.Takenaka, K.Suzuki and M.Ito

Real-Time Observation of Film Structure using X-Ray Waveguide Phenomenon  
Jpn. J. Appl. Phys., **48** (2009) 110207.

T.Yamamoto, K.Hayashi, K.Suzuki, M.Ito, H.Kimura and A.Inoue

Measurement of Crystallization Temperature of Pb-Based Amorphous Alloy Thin Film by Energy Dispersive X-Ray Reflectometry  
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### 4A

X.Li, G.Zhang and Y.Li

A Method for Source Apportionment of Lead in Fine Particulate Matter Based on Individual Particle Analysis using a Synchrotron X-Ray Fluorescence Microprobe  
Appl. Spectroscopy, **63** (2009) 180.

T.Hayashi, H.Ishizaki, S.Tanabe and Y.Hayashi

Synchrotron Radiation Microbeam X-Ray Fluorescence Analysis of Zinc Concentration in Remineralized Enamel *in situ*  
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S.Mitsuo, T.Kashiwabara, A.Hokura, N.Kitajima, F.Goto, T.Yoshihara, T.Abe and I.Nakai

Study on Accumulation Mechanism of Lead and Copper in Metal-Hypertolerant Fern, *Athyrium yokoscense*, by Micro-XRF Analysis Utilizing Synchrotron Radiation  
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Scanning Hard X-Ray Differential Phase Contrast Imaging with a Double Wedge Absorber  
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W.Satake, T.Mikouchi, J.Makishima and M.Miyamoto  
Comparison of Redox States between Geochemically-Intermediate and Enriched Lherzolitic Shergottites  
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Redox States of Geochemically-enriched "Lherzolitic" Shergottites as Inferred from Fe Micro-XANES Analysis  
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K.Ota, T.Mikouchi and K.Sugiyama  
Crystallography of Hornblende Amphibole in LAP04840 R Chondrite and Implication for its Metamorphic History  
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Y.Zhang and K.Sakurai  
Inter-Correlation of Impurity Trace Elements in Bloodstone Rock: X-Ray Fluorescence Mapping Studies  
J. Analytical Atomic Spectrometry, **24** (2009) 1579.

S.Arima, S.Ueno, A.Ogawa and K.Sato  
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M.Mizusawa and K.Sakurai  
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#### 4B1

M.Zolensky, G.Briani, M.Gounelle, T.Mikouchi, K.Ohsumi, W.Satake and T.Kurihara  
Searching for Chips of Kuiper Belt Objects in Meteorites  
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#### 4B2

K.Fujii and H.Uekusa  
Solid State Photo-Reaction and Transformation of 5-Methyl-2-Pyridone Co-Crystal Investigated by ab initio Powder X-Ray Diffraction Analysis  
J. Cryst. Soc. Jpn., **50** (2009) 335. (in Japanese).

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Construction of Structural Phase Diagram of  $\text{LaGa}_{1-x}\text{Mg}_x\text{O}_{3-\delta}$  by using Various Diffraction Measurements and Thermal Analyses—Effect of Long Period Anti-Phase Domain Structure on Phase Diagram—  
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Order-Disorder and Displacive Components in the Ferroelectric-Paraelectric Phase Transition of Potassium Titanyl Phosphate  $\text{KTiOPO}_4$   
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M.Yashima and T.Wakita  
Atomic Displacement Parameters and Structural Disorder of Oxygen Ions in the  $\text{Ce}_x\text{Zr}_{1-x}\text{O}_2$  Solid Solutions ( $0.12 \leq x \leq 1.0$ ): Possible Factors of High Catalytic Activity of Ceria-Zirconia Catalysts  
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Diffusion Paths of Mobile Ions Studied by Precise Structure Analysis of Powder Diffraction Data Measured *in situ* at High Temperatures  
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Isolation of Solid Solution Phases in Size-Controlled  $\text{Li}_x\text{FePO}_4$  at Room Temperature  
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