

CONTENTS

Symposium of Fabrication and Characterization of Organic Ultrathin Films

Preface	1
Optical Properties of Polyelectrolyte Multilayers Fabricated by Layer-by-layer Adsorption Processes	3
Shiro Fujita, Toshiki Mima, Jin Ho Kim and Seimei Shiratori	
Foam Morphology as a Higher Order Structure Model of a Layer System	7
Toshio Ishii, Eiji Hatta and Koichi Mukasa	
Formation and Structure of Organized Molecular Films for Fluorinated Comb Polymers with Various Chain Lengths	11
Atsuhiro Fujimori, Hiroo Nakahara, Eisuke Ito, Masahiko Hara, Kaname Kanai, Yukio Ouchi and Kazuhiko Seki	
Photopolymerization and Structural Characterization of Organized Molecular Films of Long-Chain Diynoic Acid Derivative by Using NEXAFS Spectroscopy	15
Mikako Ishitsuka, Atsuhiro Fujimori, Hiroo Nakahara, Eisuke Ito, Masahiko Hara, Kaname Kanai, Yukio Ouchi and Kazuhiko Seki	
AFM Study of Discrete Surface Functional Group Fabricated by Langmuir-Blodgett Technique	19
Masakazu Nakamura, Kazuhiro Kudo, Aya Shimizu, Youichi Nakayama and Yoshikatsu Nagasawa	
Fabrication and Evaluation of Nanostructured Conducting Polymer Films	23
Mitsuyoshi Onoda and Kazuya Tada	
Structural Characterization of Langmuir-Blodgett Films of the Dioctadecyldimethylammonium-Au(dmit)₂ Salt Studied by Infrared Spectroscopy and Atomic Force Microscopy	27
Shin-ichi Morita, Yasuhiro F. Miura, Keiichi Ikegami and Michio Sugi	
Formation of J-Aggregates of an Alkylated Merocyanine Dye Assisted by a Fatty Acid Observed at an Air-Water Interface	31
Keiichi Ikegami	
Influence of Packing in LB Films on Photoisomerization of Azobenzene Derivative	35
Takashi Okuhara, Masashi Takahashi and Koichi Kobayashi	
Excitations of Multiple Surface Plasmons and Emission Light in Nanostructured LB Films	39
Futao Kaneko, Toshiharu Sato, Mitsuru Terakado, Kazunari Shinbo, Keizo Kato and Takashi Wakamatsu	
Evaluation of Structure and Emission Property of Alternate Self-Assembled Ultrathin Films Containing Azo-Dye by Surface Plasmon Excitation Method	43
Keizo Kato, Junichi Kawashima, Kazunari Shinbo, Futao Kaneko, Akira Baba and Rigoberto C. Advincula	
Structure and Orientation Control of Organopolysilane Thin Film Prepared by Vacuum Evaporation Technique	47
Shoji Furukawa and Hidetaka Ohta	
Molecular Orientation of Langmuir-Blodgett Films of AlkylDCNQI-Cu and AlkylTCNQ-Cu Complexes	51
Keiichi Ikegami, Tapas Pal Majumder, Minbo Lan and Takayoshi Nakamura	
The Structure of the Dye Containing LB Films Investigated by Infrared Spectroscopy	55
Yoshiaki Hirano, Shin-ichi Morita, Yasuhiro F. Miura and Michio Sugi	
Development of LB Molecules Orientation Technology by Electric Field and Ultrasonic Vibration	59
Sadao Uegusa, Masaya Ikeda and Tsutomu Miyasaka	
Fabrication and Electrochemical Properties of Water-soluble Phthalocyanine Layer-by-layer Deposited	63

Films	
Kazunari Shinbo, Ken Onishi, Shunsuke Miyabayashi, Keizo Kato, Futao Kaneko and Rigoberto C. Advincula	
 <i>Symposium of Advanced Materials for Fuel Cells</i>	
Preface	67
High Temperature Proton Conducting Polymer Electrolytes based on Hydrocarbon-Silicate Molecular Hybrids	69
I. Honma, H. Nakajima, O. Nishikawa, T. Sugimoto and S. Nomura	
Synthesis and Proton Conductivity of Novel Sulfonated Polyimides	73
Ken-ichi Okamoto, Tatsuya Watari, Yan Yin, Xiaoxia Guo, Jianhua Fang, Kazuhiro Tanaka and Hidetoshi Kita.	
Test Fuel Cell using Hydrogen Storage Alloy	77
Shigeru Kachi, Yoshitake Nishi, Shingo Tsubuteishi and Haru-Hisa Uchida	
Preparation of Carbon Supported Pt and Pt alloys Catalysts by Alcohol Reduction For Polymer Electrolyte Fuel Cells	81
Taeyoon Kim and Koichi Kobayashi	
 <i>Symposium of Domain Structure Related Properties and Materials</i>	
Preface	85
A Theory of Ferroelectric 90 Degree Domain Wall	87
Yoshihiro Ishibashi	
Colossal Response Induced by Hetero-Structure Fluctuation	91
Yoshiaki Uesu, Kei Ishikawa and Yasusada Yamada	
Sintering and Dielectric Characteristics of Tungsten Bronze Structure Ferroelectric $\text{Sr}_x\text{Ba}_{1-x}\text{Nb}_2\text{O}_6$ Ceramics	97
Myoung-Sup Kim, Shin-II Kang, Joon-Hyung Lee, Jeong-Joo Kim, Hee Young Lee and Sang-Hee Cho	
Phase Transition and Nonliner Susceptibility in $\text{SrTi}^{18}\text{O}_3$	105
Mitsuru Itoh, Wolfgang Kleeman, Jan Dec, Ruiping Wang, Miho Narahara and Toru Kyomen	
Tbit/inch² Ferroelectric Data Storage Based on Scanning Nonlinear Dielectric Microscopy	109
Yasuo Cho, Yoshiomi Hiranaga, Kenjiro Fujimoto, Atsushi Onoe, Kazuya Terabe and Kenji Kitamura	
Enhanced Polarization Properties by the Introduction of Cation Vacancies in $\text{BaBi}_4\text{Ti}_4\text{O}_{15}$ Polycrystals	113
Yuji Noguchi, Yu Goshima and Masaru Miyayama	
Degradation of PLZT Capacitors at Elevated Temperature in Deuterium Gas	117
Jeffrey S. Cross and Mineharu Tsukada	
Dielectric and Piezoelectric Properties of $\text{Pb}(\text{Zr}_{0.53}\text{Ti}_{0.47})\text{O}_3$-$\text{Pb}(\text{Mg}_{1/3}\text{Nb}_{2/3})\text{O}_3$ Thin Films with Preferred Orientation	121
Hisao Suzuki, Akira Urayama, Toshitaka Ota and Minoru Takahashi	
Orientation Dependence of Domain Behaviors in Tetragonal Lead Zirconate Titanate Films	125
Desheng Fu, Kazumi Kato and Hisao Suzuki	
Crystal Orientation Dependence and Aging of Giant Electromechanical Coupling Factor of k_{31} Mode and Piezoelectric d_{31} Constant in $\text{Pb}[(\text{Zn}_{1/3}\text{Nb}_{2/3})_{0.91}\text{Ti}_{0.09}]\text{O}_3$ Single Crystals	129
Toshio Ogawa and Yoshiki Numamoto	
Elastic Property Distribution of Al_2O_3 Film Fabricated By Aerosol Deposition Method with Nano-Scale	

Resolution	133
Hisato Ogiso, Mikiko Yoshida and Jun Akedo	
Low Temperature Heat Capacity and Dielectric Relaxation in CaCu₃Ti₄O₁₂ Ceramics	137
Yosuke Moriya, Hitoshi Kawaji, Takeo Tojo and Tooru Atake	
Electrical Characteristics and Dynamics Adsorbed Argon Domain System on TiO₂ Surface due to Angle-Resolved Transmission Current Spectroscopy	141
K. Mizusako, K. Miyagishi, S. Yoneda, Y. Furusato, N. Terada and K. Obara	
Domain-Wall Observation in Pb(Zn_{1/3}Nb_{2/3})O₃-PbTiO₃ Solid Solutions By AFM	145
M. Iwata, K. Katsuraya, M. Maeda, I. Suzuki, Naohiko Yasuda, Y. Naruse, H. Orihara and Y. Ishibashi	
Influence of Temperature on Nonlinear Piezoelectricity in a Piezoelectric Ceramic	149
Keisuke Ishii, Shinjiro Tashiro and Kunihiro Nagata	
Crystallization of Bi_{4-x}La_xTi₃O₁₂ Films Prepared by the Sol-Gel Technique on IrO₂/Ir Multi-Layered Electrode	153
Naoki Sugita and Eisuke Tokumitsu	
Characterization of PLZT Thick Film Prepared by MOCVD	157
Yoshihisa Honda, Shintaro Yokoyama and Hiroshi Funakubo	
Domain Observation In Pb (In_{1/2}Nb_{1/2})O₃-PbTiO₃ Solid Solutions Near Morphotropic Phase Boundary by Polarizing Microscope	161
N. Yasuda, N. Uemura, N. Osaki, H. Ohwa, M. Iwata and Y. Ishibashi	
Dielectric and Piezoelectric Properties of Tetragonal PMNT 65/35 Piezoelectric Single Crystal	165
Kazuhiro Itsumi, Yasuharu Hosono, Yohachi Yamashita and Niels Nijhof	
High-Frequency Oscillator Using High - Performance Single-Crystal PZNT91/9	169
Kouchi Harada, Yasuharu Hosono, Tsuyoshi Kobayashi and Yohachi Yamashita	
Growth of Lanthanum-substituted Bismuth Titanate Single Crystals and Observation of their Domain Structure	173
Masayuki Soga, Yuji Noguchi and Masaru Miyayama	
Imaging and Engineering the Nanoscale-domain Structure of a Sr_{0.61}Ba_{0.39}Nb₂O₆ Crystal	177
Shinji Higuchi, Kazuya Terabe, Masaru Nakamura, Shunji Takekawa, Yoshihiko Gotoh and Kenji Kitamura	
Synthesis and Characterization of Ba₃MeGa₃Si₂O₁₄ (Me=Nb⁵⁺, Ta⁵⁺) Crystal	181
Hiroaki Takeda, Takashi Nishida, Soichiro Okamura and Tadashi Shiosaki	
Differential Vector Poling for Artificial Domain Control of KNbO₃ Single Crystals	185
Junji Hirohashi, Kazuhiro Yamada, Hiroyuki Kamio and Shiro Shichijo	
Domain Observation of Pb(Mg_{1/3}Nb_{2/3})O₃-PbTiO₃ Single Crystals in a Vacuum by Contact Resonance Piezoresponse Force Microscopy	189
Hirotake Okino, Takuya Matsushita and Takashi Yamamoto	
Computer Simulation of P-E Hysteresis of Ferroelectrics	193
Yoichi Kubota, Hirofumi Kakimoto, Satoshi Wada and Takaaki Tsutumi	
Growth of Bismuth Layer-Structured Ferroelectrics BaBi₄Ti₄O₁₅ Single Crystals and Their Piezoelectric Properties	197
Hiroshi Sawase, Hirofumi Kakimoto, Satoshi Wada and Takaaki Tsurumi	
Single-Domain Treatment of Potassium Niobate Single Crystal and Their Piezoelectric Properties	201
Kazuma Muraoka, Hirofumi Kakimoto, Takaaki Tsurumi, Satoshi Wada and Hirohiko Kumagai	
Piezoelectric Properties of Potassium Niobate Single Crystals with Various Domain Configurations	205
Satoshi Wada, Kazuma Muraoka, Hirofumi Kakimoto, Takaaki Tsurumi and Hirohiko Kumagai	

