

Symposium 8

Symposium 8: Glasses - Science & Technology, and Photonic Applications-

Main Organizers

- Kiyotaka Miura, Kyoto University, Japan
- Shigeru Yamamoto, Nippon Electric Glass Co., Ltd., Japan
- Himanshu Jain, Lehigh University, USA
- Kohei Kadono, Kyoto Institute of Technology, Japan

Co-Organizers

- Tomoko Akai, AIST, Japan
- Jong Heo, Pohang University of Science and Technology, Korea
- Kazuyuki Hirao, Kyoto University, Japan
- Hiroyuki Inoue, University of Tokyo, Japan
- Toru Kamihori, Asahi Glass Co., Ltd., Japan
- Peter Kazansky, University of Southampton, UK
- Takayuki Komatsu, Nagaoka University of Technology, Japan
- Wilfried Linz, Schott AG, Germany
- Jun Matsuoka, University of Shiga Prefecture, Japan
- Masayuki Nogami, Nagoya Institute of Technology, Japan
- Carlo Pantano, Pennsylvania State University, USA
- Jianrong Qiu, Zhejiang University, China
- Masahiro Tatsumisago, Osaka Prefecture University, Japan
- Tetsuji Yano, Tokyo Institute of Technology, Japan
- Toshinobu Yoko, Kyoto University, Japan
- Yuanzheng Yue, Aalborg Universitet, Denmark

Oral Session

Monday, November 15

Room: 805

14:15 - 15:45: Mechanical Properties

Chair: Satoshi Yoshida (University of Shiga Prefecture, Japan)

14:15 - 14:45

S8-001 Fracture and Tensile Strength of Oxide Glass Fibers (Invited)

Y. Yue, M. D. Lund; Aalborg University, Denmark

14:45 - 15:15

S8-002 Mechanical Behavior of $\text{Ge}_x\text{Se}_{1-x}$ Glasses from Room Temperature to the Transition Range (Invited)

T. Rouxel¹, Y. Gueguen¹, P. Gadaud², J.-C. Sangleboeuf¹, V. Keryvin¹; ¹Université de Rennes 1, France, ²Laboratoire de Mécanique et Physique des Matériaux, France

15:15 - 15:30

S8-003 Structure and Mechanical Property of Hydrous Alminosilicate Glass by Molecular Dynamics Simulation

T. Taniguchi¹, Y. Fukasawa¹, S. Ito^{1,2}; ¹Asahi Glass Co., Ltd., Japan, ²Tokyo Institute of Technology, Japan

15:30 - 15:45

S8-004 Investigation of the Role of Free Zircon in the Floor Tile Glaze and it's Elimination from that Glaze Composition

D. Ghahremani; Islamic Azad University, Iran

15:45 - 16:15 Break

16:15 - 17:45: Glass Formation and Crystallization

Chairs: Tsuyoshi Honma (Nagaoka University of Technology, Japan) and Takashi Wakasugi (Kyoto Institute of Technology, Japan)

16:15 - 16:30

S8-005 Formation of the δ -TeO₂ Phase in the Ternary TeO₂-WO₃-CdO System

A. E. Ersundu, G. Karaduman, M. Çelikbilek, N. Solak, S. Aydın; Istanbul Technical University, Turkey

16:30 - 16:45

S8-006 Investigation of the Glass Formation in the TeO₂-CdO System

G. Karaduman, M. Çelikbilek, A. E. Ersundu, N. Solak, S. Aydın; Istanbul Technical University, Turkey

16:45 - 17:00

S8-007 Crystallization Kinetics of TeO₂-B₂O₃ Glasses

D. Yardımçı, M. Çelikbilek, A. E. Ersundu, N. Solak, S. Aydın; Istanbul Technical University, Turkey

17:00 - 17:15

S8-008 Low Thermal Expansion Coefficient Cordierite Glass Ceramics

S. Jiemsirilers, E. Rijirakamort, T. Wasanapiarnpong; Chulalongkorn University, Thailand

17:15 - 17:30

S8-009 LiFePO₄ Glass-ceramic for LiB Cathode Synthesized through Chemical Vapor Deposition

K. Yuki, T. Nagakane, H. Yamauchi, T. Seto, A. Sakamoto; Nippon Electric Glass Co. Ltd.

17:30 - 17:45

S8-010 Formation of Highly-Oriented Fresnoite-Type Sr₂TiSi₂O₈ by Surface Crystallization

Y. Yamazaki¹, Y. Takahashi¹, H. Masai², R. Ihara¹, T. Fujiwara¹; ¹Tohoku University, Japan, ²Kyoto University, Japan

Tuesday, November 16

Room: 805

9:00 - 10:30: Micro/nano Scale Processing

Chair: Masaaki Sakakura (Innovative Collaboration Center of Kyoto University, Japan)

9:00 - 9:30

S8-011 Extraordinary Modifications and Structures in Glass Produced by Ultrafast Laser Writing (Invited)

P. G. Kazansky¹, M. Beresna¹, C. Corbari¹, Y. Shimotsuma², M. Sakakura², K. Miura², K. Hirao², J. Qiu³;

¹University of Southampton, UK, ²Kyoto University, Japan, ³Zhejiang University, China

9:30 - 9:45

S8-012 Molecular Radial Orientation Arrangement by Femtosecond Laser Irradiation inside Sodium Germanate Glass

X. Wang¹, M. Sakakura², K. Miura¹, K. Hirao¹; ¹Kyoto University, Japan, ²Innovative Collaboration Center of Kyoto University, Japan

9:45 - 10:00

S8-013 Silicon Precipitation in Glass Via Photoinduced Reaction Using Femtosecond Laser

M. Nishimura, S. Kanehira, M. Sakakura, Y. Shimotsuma, K. Miura, K. Hirao; Kyoto University, Japan

10:00 - 10:15

S8-014 Ultrafast Manipulation of Self-assembled Nanostructure in Glass

Y. Shimotsuma¹, M. Sakakura¹, K. Miura¹, K. Hirao¹, P. G. Kazansky²; ¹Kyoto University, Japan,

²University of Southampton, UK

Symposium 8

10:15 - 10:30

S8-015 Glass Imrinting for Highly-functional Optical Devices

J. Nishii¹, H. Hashima², Y. Tanaka³; ¹Hokkaido University, Japan, ²Nihon Yamamura Glass, Japan, ³Panasonic, Japan

10:30 - 10:45 Break

10:45 - 11:30: Glass Formation, Coating, and Thin Films on Glass

Chair: Naoyuki Kitamura (National Institute of Advanced Industrial Science and Technology, Japan)

10:45 - 11:15

S8-016 Smart Coatings on Glass for Energy-saving and Indoor Comfort (Invited)

M. Kanehira^{1,2}; ¹Shanghai Institute of Ceramics, China, ²National Institute of Advanced Industrial Science and Technology, Japan

11:15 - 11:30

S8-017 Alumino-Silicate Thin Films and Amorphous Chalcogenide/Alumino-Silicate Structures Prepared by Pulsed Laser Deposition

P. Nemeč¹, V. Nazabal², J.-P. Guin², D. Vesely¹, A. Kalendova¹, M. Allix³, S. Zhang², C. Drasar¹; ¹University of Pardubice, Czech Republic, ²Université de Rennes 1, France, ³Site Haute Température, France

14:15 - 15:45: Optical Properties and Structure I

Chair: Masayuki Nishi (Kyoto University, Japan)

14:15 - 14:30

S8-019 Emission Property of Sn-Doped Phosphate Glass for LED Application

H. Masai¹, Y. Takahashi², R. Ihara², T. Fujiwara², Y. Tokuda¹, T. Yoko¹, S. Matsumoto³; ¹Kyoto University, Japan, ²Tohoku University, Japan, ³Asahi Glass Co., Ltd. Research Center, Japan

14:30 - 14:45

S8-020 The Ultraviolet and Visible Luminescence of Te in the Tetrahedral Network Borophosphate-silicate Glasses

Z. Song, Z. Yang, D. Zhou, Z. Yin, K. Lou, J. Shang, J. Qiu; Kunmin University of Technology, China

14:45 - 15:00

S8-021 Optical Absorption Spectra of Binary Alkali Silicates Doped with Cupric Ion in the Temperature Range from 300 to 1200 K

J. Matsuoka, A. Shoji, S. Yoshida, T. Sugawara; The University of Shiga Prefecture, Japan

15:00 - 15:15

S8-022 Optical and Thermal Properties of Silver Bismuth Phosphate Glasses

N. Kitamura¹, K. Fukumi¹, J. Nakamura², T. Hidaka², T. Ikeda², H. Hashima², J. Nishii³; ¹National Institute of Advanced Industrial Science and Technology, Japan, ²Nihon Yamamura Glass, Co. Ltd., Japan, ³Hokkaido University, Japan

15:15 - 15:30

S8-023 High Resolution XANES Study on Local Structures of Iron Ions in Borosilicate Glass

S. Nishida¹, S. Nakane¹, H. Yamazaki¹, S. Yamamoto¹, T. Okajima², K. Yamashita³, S. Takeda⁴, S. Nose⁴, S. Ishida⁴, L. Li⁵, S. Kuwamoto⁵, Y. Urushihara⁵, K. Yokoyama^{5,6}, J. Matsui^{5,6}, N. Umesaki⁷; ¹Nippon Electric Glass Co., Ltd., Japan, ²Kyushu Synchrotron Light Research Center, Japan, ³University of Hyogo, Japan, ⁴Spring-8 Service Co., Ltd., Japan, ⁵Hyogo Science and Technology Association, Japan, ⁶Kobe University, Japan, ⁷Spring-8, Japan

15:30 - 15:45

S8-024 The Effect of Chromium Oxide on Optical Spectroscopy of Sodium Silicate Glasses

B. Mirhadi, B. Mehdikhani; Imam Khomeini International University, Iran

15:45 - 16:15 Break

16:15 - 17:45: Static and Dynamic Properties of Glass

Chairs: Yasuhiko Benino (Okayama University, Japan) and
Taketoshi Taniguchi (Research Center, Asahi Glass Co., Ltd., Japan)

16:15 - 16:45

S8-025 The Static and Dynamic Properties of Silica at the Crystal-Amorphous Interface: Insight from Computer Simulations (Invited)

W. Kob¹, T. Stuhn², J. Horbach³, K. Binder⁴; ¹University Montpellier 2, France, ²MPIP, Germany, ³DLR, Germany, ⁴Inst. für Physik, Germany

16:45 - 17:00

S8-027 Melt Solidification in the Ceramic System CaO-Al₂O₃-SiO₂

V. Lutsyk, A. Zelenaya, V. Savinov; RAS, Russia

17:00 - 17:15

S8-026 Atmosphere's Effect in the Mixed Conduction in Tungsten Phosphate Glass System

I. Oliva, A. Masuno, H. Inoue; the University of Tokyo, Japan

17:15 - 17:30

S8-028 Understanding the Composition Dependence of the Fragility of AgI-Ag₂O-M_xO_y Glassy Systems

M. Aniya; Kumamoto University, Japan

17:30 - 17:45

S8-029 Boson Peak of Alkali Borate Glass

S. Kojima, S. Aramomi, T. Sunaoshi, Y. Matsuda, M. Kodama; University of Tsukuba, Japan

Wednesday, November 17

Room: 805

9:00 - 10:45: In-flight Melting Technology I

Chairs: Hiroyuki Inoue (Institute of Industrial Science, University of Tokyo, Japan) and
Shigeru Yamamoto (Nippon Electric Glass Co., Ltd., Japan)

9:00 - 9:30

S8-030 Future of Glass Melting - Innovation through the In-flight Melting Technique - (Invited)

S. Inoue¹, T. Watanabe², T. Yano², O. Sakamoto³, K. Satoh⁴, T. Iseda⁵; ¹National Institute for Materials Science, Japan, ²Tokyo Institute of Technology, Japan, ³Asahi Glass Co., Ltd., Japan, ⁴Toyo Glass Co., Ltd., Japan, ⁵New Glass Forum, Japan

9:30 - 9:45

S8-031 1ton/d Large Scale Experimental In-Flight Glass Melter and Some Operation Results of the Melter

M. Iwamoto¹, K. Satoh¹, K. Kaneko¹, A. Hamada¹, M. Fujiwara¹, Y. Ebihara¹, O. Sakamoto², C. Tanaka²; ¹Toyo Glass Co., Ltd, Japan, ²Asahi Glass Co., Ltd., Japan

9:45 - 10:00

S8-032 Development of Simulation Code for the In-flight Melting Process

S. Kawachi¹, T. Iseda¹, T. Watanebe²; ¹New Glass Forum, Japan, ²Tokyo Institute of Technology, Japan

10:00 - 10:15

S8-033 Formation and Properties of In-flight Melted Glasses

T. Yano¹, J. Taguchi¹, D. Morishima¹, T. Watanabe¹, K. Satoh², M. Iwamoto², K. Kaneko³, C. Tanaka³, O. Sakamoto³; ¹Tokyo Institute of Technology, Japan, ²Toyo Glass Co. Ltd., Japan, ³Asahi Glass Co. Ltd., Japan

10:15 - 10:30

S8-034 In-Situ Observation of Soda-Lime-Silica Glass Melts Prepared by In-Flight Melting Glass Melter

D. Morishima¹, J. Taguchi¹, S. Shibata¹, T. Yano¹, M. Iwamoto², K. Satoh², K. Kaneko²; ¹Tokyo Institute of Technology, Japan, ²Toyo Glass Co., Ltd, Japan

Symposium 8

10:30 - 10:45

S8-035 Gas Analysis of Bubbles in Soda-Lime Glasses Synthesized by In-Flight Melting Process

J. Taguchi¹, T. Yano¹, M. Iwamoto², K. Satoh², K. Kaneko²; ¹Tokyo Institute of Technology, Japan, ²Toyo Glass Co., Ltd, Japan

10:45 - 11:00 Break

11:00 - 12:00: In-flight Melting Technology II

Chair: Kohei Kadono (Kyoto Institute of Technology, Japan)

11:00 - 11:15

S8-036 Application of the In-flight Melting Technology Using RF Plasma to an Alkaline Free Borosilicate Glass

O. Sakamoto, C. Tanaka, S. Miyazaki, N. Shinohara, S. Ohkawa; Aasahi Glass Co., Ltd., Japan

11:15 - 11:30

S8-037 Thermal Plasma Generation for In-Flight Glass Melting

T. Watanabe, M. Tanaka, T. Matsuura; Tokyo Institute of Technology, Japan

11:30 - 11:45

S8-038 Investigation of In-Flight Melting Behavior of Granulated Glass Raw Material by Multi-Phase AC Arc Plasma

M. Tanaka, Y. Tsuruoka, Y. Liu, T. Watanabe, J. Taguchi, T. Yano; Tokyo Institute of Technology, Japan

11:45 - 12:00

S8-039 Discharge Mechanism of Multi-Phase AC Arc for In-Flight Glass Melting

T. Matsuura, M. Tanaka, Y. Tsuruoka, T. Watanabe; Tokyo Institute of Technology, Japan

13:15 - 15:00: Optical Properties and Structure II

Chairs: Tomokatsu Hayakawa (Nagoya Institute of Technology, Japan) and Jianbei Qiu (Kunmin University of Technology, China)

13:15 - 13:45

S8-040 Structure and Emission Properties of Heavy Metal Oxide Glasses in the PbO-Bi₂O₃-Ga₂O₃ System (Invited)

J. Heo; Pohang University of Science and Technology, Korea

13:45 - 14:00

S8-041 Synthesis of Ca- α -SiAlON:Eu²⁺ Phosphors Dispersed Glasses

H. Segawa¹, S. Ogata^{1,2}, H. Yoshimizu^{1,2}, N. Hirotsuki¹, S. Inoue^{1,2}; ¹National Institute for Materials Science, Japan, ²University of Tsukuba, Japan

14:00 - 14:15

S8-042 Population and Rate Equation Analyses for Energy Transfer between Rare-Earth Ions in Ga₂S₃-GeS₂-Sb₂S₃ Glasses

M. Ichikawa, Y. Ishikawa, T. Wakasugi, K. Kadono; Kyoto Institute of Technology, Japan

14:15 - 14:30

S8-043 Sintering Process of Eu Doped Luminescent Glass Prepared from Porous Glass

T. Akai¹, M. Murakami¹, M. Yamashita¹, T. Okajima², N. Umesaki³; ¹National Institute of Advanced Industrial Science and Technology, Japan, ²Kyushu Synchrotron Light Research Center, Japan, ³Japan Synchrotron Radiation Research Institute, Japan

14:30 - 14:45

S8-044 Influence of Rare-earths on the Nucleation of PbS Quantum Dots in Glasses

S. Shim, C. Liu, Y. K. Kwon, J. Heo; Pohang University of Science and Technology (POSTECH), Korea

14:45 - 15:00

S8-045 Optical Properties and Structure of Pr³⁺-Doped LiF-Al(PO₃)₃ Glasses as Scattered Neutron Scintillator for Nuclear Fusion Diagnostics

T. Murata^{1,2}, S. Fujino³, H. Yoshida⁴, Y. Arikawa², T. Nakazato², T. Shimizu², N. Sarukura², M. Nakai², T. Norimatsu², H. Azechi², K. Kamada⁵, Y. Usuki⁵, T. Suyama⁶, A. Yoshikawa⁷, N. Sato⁸, H. Kan⁸; ¹Kumamoto University, Japan, ²Osaka University, Japan, ³Kyushu University, Japan, ⁴Ceramic Research Center of Nagasaki, Japan, ⁵Furukawa Co. Ltd., Japan, ⁶Tokuyama Corporation, Japan, ⁷Tohoku University, Japan, ⁸Hamamatsu Photonics K.K., Japan

15:00 - 15:15 Break

15:15 - 16:15: Optical Properties and Structure III

Chair: Tomoko Akai (National Institute of Advanced Industrial Science and Technology, Japan)

15:15 - 15:45

S8-046 Broadband Spectral Modification of Solar Spectrum by Using Rare-earth Doped Glasses for Photovoltaics (Invited)

J. Qiu^{1,2}, J. Zhou¹, Y. Song¹; ¹Zhejiang University, China, ²South China University of Technology, China

15:45 - 16:00

S8-047 Site-Selective Excitation and Fluorescence of Nd³⁺ Ion in Oxide Glasses for Spherical Cavity Laser

M. Saito, T. Yano, R. Yamaguchi, T. Kishi, S. Shibata; Tokyo Institute of Technology, Japan

16:00 - 16:15

S8-048 Doping Effects of Transition Metal Ions on Magnetic and Optical Properties of EuO-Al₂O₃-SiO₂ Glasses

Y. Yasuoka, T. Hayakawa, M. Nogami; Nagoya Institute of Technology, Japan

Poster Session

Tuesday, November 16

Room: Event Hall

12:00 - 14:00

S8-P001 Floor Tile Glass-Ceramic Glaze for Improvement of the Resistance to Surface Abrasion

M. Gajek, J. Lis, J. Partyka, M. Wójczyk; AGH University of Science and Technology, Poland

S8-P002 Intrinsic Strength of Sodium Borosilicate Glass Fibers by Using a Two-point Bending Technique

Y. Nishikubo, S. Yoshida, T. Sugawara, J. Matsuoka; The University of Shiga Prefecture, Japan

S8-P003 Estimation of Mechanical Properties by the Vickers Indentation Test for Ag⁺/Na⁺ Ion-exchanged Glass

Y. Nomiya¹, T. Wakasugi¹, J. Nishii², K. Kadono¹; ¹Kyoto Institute of Technology, Japan, ²Hokkaido University, Japan

S8-P004 Indentation Rheology for Soda-lime Glass Around the Glass Transition Temperature

N. Hakiri¹, R. Kikuchi¹, Y. Kato², A. Takada², H. Muto¹, A. Matsuda¹, M. Sakai¹; ¹Toyohashi University of Technology, Japan, ²Asahi Glass Co., Japan

S8-P005 Simulations of Sulfate Ions in Soda-lime-silicate Glass Melts

H. Inoue, A. Masuno; The University of Tokyo, Japan

S8-P006 Sintering and Crystallization of CaO-MgO-Al₂O₃-SiO₂(R₂O) Glass-Ceramic Matrix Composite Reinforced with ZrO₂ Particle

M. Rezvani¹, F. Vahidian; University of Tabriz, Iran

S8-P007 Optical Characterization of ZnO-Al₂O₃-SiO₂ System Glass-Ceramics

T. Matsumura, T. Wakasugi, K. Kadono; Kyoto Institute of Technology, Japan



Symposium 8

- S8-P008 Micro- and Nano-Scale Deformations in Optically Transparent Glass-Ceramics with Fresnoite Ba₂TiSi₂O₈ Nanocrystals**
K. Shinozaki, T. Honma, T. Komatsu; Nagaoka University of Technology, Japan
- S8-P009 Glass-Ceramic Material from the SiO₂-Al₂O₃-CaO System Using Sugar-Cane Bagasse Ash (SCBA)**
S. R. Teixeira¹, M. Romero², J. M. Rincón², R. S. Magalhães¹, A. E. Souza¹, G. T. A. Santos¹, R. A. Silva¹;
¹Universidade Estadual Paulista, Brazil, ²Instituto Eduardo Torroja de Ciencias de la Construcción, Spain
- S8-P010 Investigation of Crystal Growth and the Orientation in ZnO-precipitated Glass-ceramics**
T. Ueno¹, H. Masai², R. Ihara¹, Y. Takahashi¹, T. Fujiwara¹; ¹Tohoku University, Japan, ²Kyoto University, Japan
- S8-P011 Examination of Crystalline Morphology of TiO₂ Glass-ceramics**
K. Hirakawa¹, H. Masai², R. Ihara¹, Y. Takahashi¹, T. Fujiwara¹; ¹Tohoku University, Japan, ²Kyoto University, Japan
- S8-P012 Fabrication and Photoluminescent Property of Transparent Nanocrystallized-Glass in Li₂O-ZnO-GeO₂ System**
M. Ando¹, Y. Takahashi¹, K. Iwasaki¹, H. Masai², R. Ihara¹, T. Fujiwara¹; ¹Tohoku University, Japan, ²Kyoto University, Japan
- S8-P013 Effects of Crystallization Conditions on Conductivity of Na₅YSi₄O₁₂-type Glass-Ceramics**
K. Kawada¹, T. Okura¹, H. Monma², K. Yamashita³; ¹Kogakuin University, Japan, ²Hosei University, Japan, ³Tokyo Medical and Dental University, Japan
- S8-P014 B₂O₃-Additive Effect on Glass Stability and Crystallization Behavior in Stoichiometric Ba₂TiGe₂O₈ Glass**
Y. Yamazaki¹, H. Masai², Y. Takahashi¹, R. Ihara¹, T. Fujiwara¹; ¹Tohoku University, Japan, ²Kyoto University, Japan
- S8-P015 Nucleation and Nanometric Inhomogeneity in Niobiogermanate Glass: In-Situ Inelastic Light Scattering and TEM Studies**
Y. Takahashi¹, M. Osada², H. Masai³, R. Ihara¹, T. Fujiwara¹; ¹Tohoku University, Japan, ²National Institute for Materials Science, Japan, ³Kyoto University, Japan
- S8-P016 Effect of Ultrasonic Surface Treatment on the Transparency and Orientation of Fresnoite Surface Crystallization**
A. Endo, S. Sakida, Y. Benino, T. Nanba; Okayama University, Japan
- S8-P017 Controlled Crystalization and Characterization of LS₂ Glass**
O. Guney, E. Demirkesen; Istanbul Technical University, Turkey
- S8-P018 Analysis of Viscoelastic Flow in Tin Phosphate Glass**
J. Cha, H. Takebe; Ehime University, Japan
- S8-P019 Redox Equilibria of Ag in PbO-B₂O₃ and Bi₂O₃-B₂O₃ melts**
Y. Noguchi, T. Wakasugi, K. Kadono; Kyoto Institute of Technology, Japan
- S8-P020 Electronic Polarizability and Structure Analysis of High ZnO-Containing Bismuth Borate Glasses**
T. Inoue, T. Honma, T. Komatsu; Nagaoka University of Technology, Japan
- S8-P021 Defect Formation and Annihilation in Iron-doped Soda-lime Silicate Glass by X-ray Irradiation and Heat-treatment**
Y. Taniguchi, K. Ishihara, T. Isaji, T. Wakasugi, K. Kadono; Kyoto Institute of Technology, Japan
- S8-P022 Effect of Water on the Electrochemical Reactions and Bubble Formation in Soda-Lime-Silica Glass: DC Electrochemical Treatment**
T. Sato, T. Yano, S. Shibata; Tokyo Institute of Technology, Japan

- S8-P023 The Effect of Melting Temperatures on the Optical Absorption of Soda Lime Silicate Glass Doped with MnO₂**
 C. Kedkaew¹, N. Srisittipokakun¹, J. KaewKhao², P. Limsuwan^{1,3}; ¹King Mongkut's University of Technology Thonburi, Thailand, ²Nakhon Pathom Rajabhat University, Thailand, ³Thailand Center of Excellence in Physics, CHE, Thailand
- S8-P024 Heat Capacity of 72SiO₂-9B₂O₃-10Al₂O₃-9MO (M=Mg, Ca, Sr and Ba) Glasses and Melts**
 T. Sugawara, Y. Hamano, S. Yoshida, J. Matsuoka; The University of Shiga Prefecture, Japan
- S8-P025 Magnetic Properties of Nanoparticles Locally Precipitated Inside Transparent Silicate Glass Using Femtosecond Laser**
 S. Nakashima, K. Sugioka, K. Midorikawa; RIKEN, Japan
- S8-P026 Structural Investigations of Bismuth Borosilicate and Aluminoborosilicate Glasses**
 A. Saini¹, A. Khanna¹, J. W. Zwanziger², F. Gonzalez³, D. Hernandez³; ¹Guru Nanak Dev University, India, ²Dalhousie University, Canada, ³University of Cantabria, Spain
- S8-P027 Raman Spectroscopic Study of Structure and Crystallization Behavior of ZnO-MoO₃-B₂O₃ Glasses**
 L. Aleksandrov¹, T. Komatsu¹, R. Iordanova², Y. Dimitriev³; ¹Nagaoka University of Technology, Japan, ²Institute of General and Inorganic Chemistry, Bulgaria, ³University of Chemical Technology and Metallurgy, Bulgaria
- S8-P028 Structural Analyses of Er³⁺-doped Ga₂S₃-GeS₂-Sb₂S₃ Glasses by EXAFS and Raman Spectroscopies**
 M. Ichikawa¹, K. Fukumi², H. Kageyama², T. Wakasugi¹, K. Kadono¹; ¹Kyoto Institute of Technology, Japan, ²National Institute of Advanced Industrial Science and Technology, Japan
- S8-P029 Sutructual Investigation of Bismuth Borate Glasses Containing Halides**
 Y. Hoko, S. Sakida, Y. Benino, T. Nanba; Okayama University, Japan
- S8-P030 The Effect of Titanium on the Structure of Sodium Borophosphate Glasses**
 N.-J. Kim¹, S.-H. Im¹, D.-H. Kim¹, Y.-S. Lee², S.-C. Lee², Y.-S. Kim², B.-K. Ryu¹; ¹Pusan National University, Korea, ²LG Electronics, Korea
- S8-P031 Effects of Substituting B₂O₃ for P₂O₅ on the Structure and Properties of P₂O₅-SnO Glass Systems**
 D.-H. Kim¹, N.-J. Kim¹, S.-H. Im¹, Y.-S. Lee², S.-C. Lee², Y.-S. Kim², B.-K. Ryu¹; ¹Pusan National University, Korea, ²LG Electronics, Korea
- S8-P032 Preparation and Lithium Ion Conductivity of New Lithium Niobium Phosphate Glasses and Glass-Ceramics**
 T. Okada, T. Honma, T. Komatsu; Nagaoka University of Technology, Japan
- S8-P033 Phase Separation of Borosilicate Glass Containing Phosphorus**
 Y. Ohtsuki, S. Sakida, Y. Benino, T. Nanba; Okayama University, Japan
- S8-P034 Luminescence Properties of YBO₃:Eu³⁺ Doped Borosilicate Glasses Crystallized Under Shear Stress**
 S. Masamune, Y. Daiko, M. Kobune, A. Minesige, T. Yazawa; University of Hyogo, Japan
- S8-P035 Fabrication and Characterization of Er³⁺-doped Tellurite Glass Waveguides by Ag⁺-Na⁺ Ion-exchange Method**
 K. Kimura, S. Sakida, Y. Benino, T. Nanba; Okayama University, Japan
- S8-P036 Glasses Doped with Pr³⁺/Yb³⁺ Rare-earth Ions for the Enhanced Absorption Efficiency of Silicon Solar Cells**
 S. K. Kim, J. Heo; Pohang University of Science and Technology, Korea
- S8-P037 A Study on the Relationship between Nonlinear Optical Constants and the Ionic Conductivity in Glasses**
 S. Ikeda, M. Aniya; Kumamoto University, Japan
- S8-P038 Formation Characteristics and Hole-Burning Properties of Europium-doped Heteroanion Glasses**
 H. Liang, H. Hanzawa, T. Horikawa, M. Itoh, K. Machida; Osaka University, Japan

Symposium 8

- S8-P039** **Fabrication of Lithium Niobate Patterns on $\text{Li}_2\text{O-Nb}_2\text{O}_5\text{-SiO}_2$ Glassy Surface by Laser Irradiation**
T. Honma, T. Komatsu; Magaoka University of Technology, Japan
- S8-P040** **Laser-Induced Structure Change of CuO-Doped Silicate Glass in Reducing Atmosphere**
T. Karasawa, T. Honma, T. Komatsu; Nagaoka University of Technology, Japan
- S8-P041** **Formation of Elemental Distribution in Glasses by Femtosecond Laser Irradiation**
N. Yasuda, M. Shimizu, M. Sakakura, Y. Shimotsuma, K. Miura, K. Hirao¹; Kyoto University, Japan
- S8-P042** **One-coat Glass Enamels for Pipes**
I. Berdzenishvili; Georgian Technical University, Georgia
- S8-P043** **Electric Properties of Al_2O_3 Films on Stainless Steel Prepared by EB-PVD**
J. Yang, Z. Yang, C. Mao, J. Du; General Research Institute for Nonferrous Metals, China
- S8-P044** **Phase Separation Behavior and Coloring of Coating Glasses for Sanitary Ware**
Y. Tomioka, S. Sukenaga, N. Saito, K. Nakashima; Kyushu University, Japan
- S8-P045** **Metal Oxide Thin Film Prepared by DC Magnetron Sputtering Suitable for Electrochromic Switchable Mirror Glass**
K. Tajima, Y. Yamada, K. Yoshimura; National Institute of Advanced Industrial Science and Technology, Japan
- S8-P046** **Preparation and Characterization of Silica Thin Films by Liquid Phase Deposition**
S.-H. Im¹, Y.-H. Na¹, N.-J. Kim¹, D.-H. Kim¹, T.-H. Kim², J.-E. Song², D.-K. Yoon², B.-K. Ryu¹; ¹Pusan National University, Korea, ²Jeong Kwan Co.,Ltd, Korea
- S8-P047** **Preparation and Characterization of Silicate Phosphor Powders Containing Eu^{3+} by Mechanochemical Process**
A. Shinomiya, K. Tadanaga, M. Tatsumisago; Osaka Prefecture University, Japan
- S8-P048** **Properties of CoO Doped in Glasses Prepare from Rice Hush Fly Ash in Thailand**
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