



International Conference on Polymer Analysis and Characterization & 15th Symposium on Polymer Analysis in Japan (ICPAC)

Program

【Dec 8】

9:50-10:20 Opening Remarks

Hajime Ohtani (Nagoya Inst. Technol., Japan)

10:20-11:10 Lecture 1 [Chairperson: Taihyun Chang]

Josef Janca (Tomas Bata Univ., Czech Republic)
"Advances in Polymer Characterization by Field-Flow Fractionation Methods"

11:25-12:15 Lecture 2 [Chairperson: Atsushi Takahara]

Sergei Magonov (Agilent Technologies, USA)
"High-Resolution Visualization and Compositional Analysis of Polymers with Atomic Force Microscopy"

12:15-13:25 Lunch

13:25-14:25 Poster Preview I [Chairperson: Tomoyuki Ozawa]

14:25-15:55 Poster Session I

16:05-16:55 Lecture 3 [Chairperson: Josef Janca]

Taihyun Chang (Pohang Univ. Sci. Technol., Korea)
"HPLC Characterization of Complex Polymers"

【Dec 9】

9:20-10:10 Lecture 4 [Chairperson: Shinichi Kinugasa]

William E. Wallece (NIST, USA)
"Frontiers in Polymer Characterization by Mass Spectrometry "

10:10-11:00 Lecture 5 [Chairperson: Kiyoshi Yamamoto]

Hatsuo Ishida (Case Western Reserve Univ., USA)
"Effect of Temperature on the Structure of Polybenzoxazines: Polymerization, Structural Rearrangement, and Degradation"

11:15-12:05 Lecture 6 [Chairperson: Hajime Ohtani]

Emma Strömberg, ○**Sigbritt Karlsson** (The Royal Inst. Technol.)

[KTH], Sweden)

"Chromatography and Mass Spectrometry for Analysis of Chemical Structure Changes during Degradation of Inert and Renewable Polymers"

12:05-13:15 Lunch

13:15-14:15 Poster Preview II [Chairperson: Yuko Nishimoto]

14:15-15:45 Poster Session II

16:00-16:50 Lecture 7 [Chairperson: Koichi Ute]

○**Peter L. Rinaldi**, Xiaohong Li, Eric B. Twum, Linlin Li (Univ. of Akron, USA) Faith Wyzgowski (Ohio State Univ.-Mansfield) Elizabeth F. McCord (EI Dupont de Nemours and Co) Peter A. Fox (Dupont Performance Elastomers) Jon L. Howell (EI Dupont de Nemours and Co)
"New Ways to Study Fluoropolymers with Multidimensional NMR"

17:10- Banquet

[Dec 10]

9:00-10:00 Poster Preview III [Chairperson: Akihiro Kondo]

10:00-11:30 Poster Session III

11:30-12:30 Lunch

12:30-13:30 Poster Preview IV [Chairperson: Hideki Matsubara]

13:30-15:00 Poster Session IV

15:15-16:05 Lecture 8 [Chairperson: Shigeaki Morita]

Heinz W. Siesler (University of Duisburg-Essen, Germany)
"Recent Advances of Chemical and Physical Characterization of Polymers by Vibrational Spectroscopy"

16:05-16:20 Closing Remarks

Poster Preview & Poster Session

The contributed paper of International Conference on Polymer Analysis and Characterization (ICPAC) will be composed of **1)** poster preview (short oral presentation) and **2)** poster session.

Poster Preview & Poster Session I

- I-1** [Development of a New Vertical Type of Micro-Furnace Pyrolyzer for Pyrolysis-GC Incorporating a Tube Type of Ceramic Heater](#)
(Frontier Laboratories, Nagoya Inst. Tech.) ○Atsushi Watanabe, Chuichi Watanabe, Hajime Ohtani
- I-2** [Development of a Micro Reaction Sampler for on-Line GC Analysis Combined with Micro-Furnace Pyrolyzer](#)

(Frontier Laboratories, Nagoya Inst. Tech.) ○Tetsuro Yuzawa, Chuichi Watanabe, Hajime Ohtani

- I-3** [Size Exclusion Chromatography of Perfluoro Amorphous Polymer CYTOP](#)
(Asahi Glass) ○Toshifumi Kakiuchi, Yoji Nakajima, Kiyoshi Yamamoto
- I-4** [Relationship between Molecular Weight Distribution and Chemical Composition of Rigid Rod Copolymer](#)
(Okayama Univ.) Yuta Kikui, Tomonori Maruta, ○Takumi Okihara
- I-5** [Effect of Extraction Methods on Yields of Phthalates from Poly\(vinyl chloride\) Products](#)
(Fujikura) ○Daisuke Suzuki, Toshiyasu Kurihara, Kazunori Onabe
- I-6** [Influence of Salt on Interaction of Water-Soluble Polymer and Water](#)
(Kanagawa Univ.) Yuko Nishimoto, ○Mayumi Inaba, Yuzuru Uehara, Hideyo Shimizu
- I-7** [Development of the Certified Reference Material of Poly\(ethylene glycol\) Nonylphenyl Ether by Supercritical Fluid Chromatography](#)
(NMIJ/AIST) ○Kayori Takahashi, Shigetomo Matsuyama, Haruhisa Kato, Shinichi Kinugasa
- I-8** [Synthesis of Hydrophilic Uridine Molecularly Imprinted Polymers](#)
(Beijing Inst. Tech.) ○Yun Liu, Lifei Wu, Aiqin Luo
- I-9** [Characterization of Thin PTFE Films Prepared by Radio Frequency Plasma Sputtering](#)
(Korea Inst. Ind. Tech.) ○Min-Sun Kim
- I-10** [Comb-Shaped Graft Block Copolymers: Effect of Molecular Architecture on Phase Behavior in Thin Film](#)
(Pohang Univ. Sci. Tech., Tokyo Inst. Technol.) ○Junyoung Lee, Jueun Jung, Hyojoon Lee, Taihyun Chang, Masahiro Uematsu, Akira Hirao
- I-11** [Characterization of Aromatic Polyamide Particles with Functional Group](#)
(TRI) ○Yayoi Yoshioka
- I-12** [Structural, Mechanical and Compositional Analysis of Polymeric Film Surface which Supports the Catalyst for Electroless Plating](#)
(TOYOTA Central R & D Labs., TOYOTA Industries, TOYOTA Motor) ○Tomoyuki Koga, Takuya Mitsuka, Yoshifumi Aoki, Yuko Aoki, Eiichi Sudo, Noritomo Suzuki, Takamasa Nonaka, Atsushi Murase, Takashi Yoshida, Fumitaka Yoshinaga, Hiroshi Yanagimoto
- I-13** [IR Microprobe Analysis of Thin Polymer Films Using a Grazing Angle Incidence Reflection Objective with FPA Detector](#)
(Gunma Pref. Ind. Tech. Center) ○Kiyoshi Miyashita
- I-14** [XPS and TOF-SIMS Studies of Polymer Depth Profiling Using Ar Cluster Ion Beam](#)
(ULVAC-PHI) ○Takuya Miyayama, Miyako Tozu, Noriaki Sanada, Mineharu Suzuki
- I-15** [XPS Depth Profile with Carbon Cluster Ion Beam Applied to Fluorocarbon Polymer Film](#)
(Asahi Glass) ○Toshio Suzuki, Yuichi Yamamoto, Kiyoshi Yamamoto
- I-16** [Mapping of the Cationic Starch Adsorbed on Pulp Fibers by ToF-SIMS](#)
(Nagoya Univ.) ○Yasuyuki Matsushita, Takuya Sekiguchi, Ayumi Suzuki, Kaori Saito, Takanori Imai, Kazuhiko Fukushima
- I-17** [Analysis of Degradation by Ultraviolet rays of the Lacquer Film from Thailand and Myanmar](#)
(Meiji Univ.) ○Takayuki Honda, Tetsuo Miyakoshi
- I-18** [High Resolution Interface Structure Analyses of Obliquely Sliced Polymer Bilayer Films by Local Thermal Analysis](#)
(Kao, Kyushu Univ.) ○Noriyuki Tanji, Atsushi Takahara
- I-19** [Development of Poly\(acrylic acid\) Gel Actuator Based on Quinone Redox](#)
(Nagoya Inst. Tech.) ○Tomonari Iida, Takashi Yasui, Kazutake Takada, Akio Yuchi
- I-20** [Dynamic Analysis of Polyimide Surface with Surface Dielectric Relaxation Method](#)
(NIMS) ○Masashi Ishii

- I-21** [Analysis of Monomer Sequence Distribution and Stereoregularity of Poly\(MMA-co-TBMA\)s by Multivariate Analysis of ¹³C NMR Spectra](#)
(Univ. of Tokushima, Mitsubishi Rayon) ○Hikaru Momose, Tomoya Maeda, Tatsuya Naono, Seiko Asakawa, Tomohiro Hirano, Koichi Ute
- I-22** [Variation Analysis in Polysulfide Silane Coupling Agents by High mass Accuracy MSⁿ and Multivariate Statistical Technique](#)
(Yokohama Rubber, Shimadzu) ○Yuko Sekine, Fumito Yatsuyanagi, Hiroki Nakajima, Takahiro Goda, Satoshi Yamaki, Tsutomu Nishine, Takashi Hine
- I-23** [Analysis of Trace Amount of Polymeric Materials by MALDI-MS with Pinpoint Concentration Technique](#)
(Toray Research Center) ○Asuka Noda, Yoshihiko Taguchi, Hirofumi Moriwaki, Akiko Otsuki
- I-24** [Simple Mass Analysis of Synthetic Polymer by Ionization Plate with MALDI Spiral-TOFMS](#)
(JEOL, Osaka Medical Center and Research Institute for Maternal and Child Health, Tokyo Metropolitan Univ., Kanagawa Academy of Science and Technology) ○Takafumi Sato, Kanae Teramoto, Takaya Satoh, Yoshihisa Ueda, Yoshinao Wada, Takashi Yanagishita, Hideki Masuda
- I-25** [Characterization of Abnormal Structures in Thermally Treated / Kneaded Liquid Crystalline Polyester / Polycarbonate Blend by Matrix-Assisted Laser Desorption / Ionization Mass Spectrometry](#)
(Nagoya Inst. Tech., Polyplastics) ○Yukari Mizuno, Hajime Ohtani, Hatsuhiko Harashina, Yoshihisa Tajima

Poster Preview & Poster Session II

- II-1** [The Study of Method for Quantitative Analysis of Restricted Phthalates in Poly\(vinyl chloride\) by Thermal Desorption GC/MS Analysis](#)
(Frontier Laboratories) ○Kayo Odagiri, Tetsuro Yuzawa, Chuichi Watanabe, Robert Freeman
- II-2** [Study of Thermal Degradation of Polyolefins by Using TG/DTA-GC/MS](#)
(Fujikura) ○Toshiyasu Kurihara, Daisuke Suzuki, Kazunori Onabe
- II-3** [Surface Characterization of Wood Cell Wall Components by Inverse Gas Chromatography](#)
(Nagoya Univ.) ○Yasuyuki Matsushita, Rie Kasuya, Masato Uno, Naoki Hibino, Takanori Imai, Kazuhiko Fukushima
- II-4** [Influence of Molecular Weight Distribution on Intrinsic Viscosity of Rigid Rod Polymer Solution](#)
(Okayama Univ.) Toru Ikeda, ○Takumi Okihara
- II-5** [Viscoelasticity, Leachability, and Antimicrobial Activity of Poly\(vinyl chloride\) Blended with Benzyldimethyltetradecylammonium Bis\(2-ethylhexyl\) sulfonatosuccinate](#)
(Fukui Prefectural Univ., Nicca Chemical) ○Hajime Katano, Toshihide Tsukatani
- II-6** [Interaction of Hydrophilic Polymer and Water Containing Salt](#)
(Kanagawa Univ.) Yuko Nishimoto, ○Yuzuru Uehara, Mayumi Inaba, Hideyo Shimizu
- II-7** [Modification of Carboxylic Acid Contained in Acrylic Resin Followed by Chemical Composition Analysis Thereof by Use of Pulsed Field Gradient NMR and DOSY Separation Technique](#)
(Kaneka Techno Research, Univ. of Tokushima) ○Keisuke Sogabe, Koichi Ute
- II-8** [Crystallinity Evaluation of Fluorocarbon Polymers by means of XRD with](#)

Parallel Beam

(Asahi Glass) ○Tatsuya Miyajima, Satoshi Oki, Atsushi Watakabe, Satoru Honmura, Kiyoshi Yamamoto

- II-9** - Canceled -
- II-10** [Characterization of the Natural Fibers and the Blend Ratio of Lyocell / Cotton by Pyrolysis-GC/MS and FTIR](#)
(Zhejiang Univ. Tech., Zhejiang Textile Testing Center) ○Yang Sun, Chunji Yao, YiChuan Gao, Zaifa Pan, Lili Wang
- II-11** [Evaluation of Biodegradation Behavior of Poly\(butylene succinate-co-butylene adipate\) by Reactive Pyrolysis-Gas Chromatography in the Presence of Organic Alkali](#)
(Chubu Univ., Nagoya Inst. Tech.) ○Baidurah Siti, Seiya Takada, Kazuki Shimizu, Yasuyuki Ishida, Tsuneo Yamane, Hajime Ohtani
- II-12** - Canceled -
- II-13** [Molecular Weight and Branching Analysis of Natural Rubber by FFF-MALS](#)
(Bridgestone) ○Yuichi Ishino, Chikako Kuroiwa, Takashi Shimizu
- II-14** [Polymer Characterization by Perturbation-Correlation Moving-Window Two-Dimensional \(PCMW2D\) Infrared Correlation Spectroscopy](#)
(Nagoya Univ.) ○Shigeaki Morita, Kuniyuki Kitagawa
- II-15** [Compositional Analysis of Polyurethane Using Online SEC-FTIR](#)
(Technofleet) ○Sachiko Kawata, Yukinobu Yamaoka
- II-16** [Characterization of Sample Surfaces by Laser Speckle Images for MALDI Mass Spectrometry](#)
(NMIJ/AIST) ○Hisashi Togashi
- II-17** [Characterization of Poly\(butylene terephthalate\) Modified with Carbodiimide Compound by Matrix-Assisted Laser Desorption / Ionization Mass Spectrometry](#)
(Nagoya Inst. Tech., Polyplastics) ○Tomoko Tsuge, Hajime Ohtani, Hatsuhiko Harashina, Yoshihisa Tajima
- II-18** [The Analysis of Synthetic Polymer by High Energy CID Using MALDI-SpiralTOF/TOF](#)
(JEOL) ○Takaya Satoh, Ayumi Kubo, Yoshiyuki Ito, Masahiro Hashimoto, Masaaki Ubukata, Takafumi Sato, Jun Tamura
- II-19** [Development of Anion Responsive Molecular Valve Using Poly\(4-vinylpyridine\) Gel](#)
(Nagoya inst. tech.) ○Masahiro Takezaki, Kazutake Takada, Akio Yuchi
- II-20** [High Sensitive Determination of Graft Ratio of Maleic Anhydride Grafted Polyolefin by Methylation of Anhydride in Supercritical Methanol Followed by ¹H-NMR](#)
(Chiba Univ., UBE Sci. Anal. Lab.) ○Koji Miyauchi, Kyoichi Saito
- II-21** [NMR Assignment of Poly\(1-vinylpyrrolidone\) by Statistical 2D NMR](#)
(Univ. of Tokushima, Mitsubishi Rayon, Hiroshima Univ.) ○Takuya Anmoto, Hikaru Momosue, Tomohiro Hirano, Yukiteru Katsumoto, Koichi Ute
- II-22** [Distribution Analysis of Triglyceride Having Repair Effect on Damaged Human Hair by TOF-SIMS](#)
(Hoyu, Nagoya Univ.) ○Toru Kojima, Shiho Tsuji, Masanao Niwa, Kaori Saito, Yasuyuki Matsushita, Kazuhiko Fukushima
- II-23** [Qualitative Analysis of the Trace Components by MALDI-MS, IR and Pyrolysis-GC/MS Combined with Micro HPLC Fractionation](#)
(Toray Reserch Center) ○Kazuki Kawai, Hirotaka Shioji, Akiko Otsuki
- II-24** [Structural analysis of Multi-Functional Monomers](#)

(DIC) ○Masaaki Toda, Satoshi Yoshida

II-25 [Preparation and Characterization of Poly\(lactic acid\) Hybrids with Surface Modified Imogolite](#)

(Kyushu Univ.) ○Tomoko Shirahase, Wei Ma, Ryouzuke Okazaki, Hiroe Soejima, Yuki Terayama, Atsushi Takahara

Poster Preview & Poster Session III

III-1 [Study on UV Surface Modification of Poly\(butylene terephthalate\) by Near Edge X-ray Absorption Fine Structure Spectroscopy, X-ray Photoelectron Spectroscopy and Infrared Reflection Absorption Spectroscopy](#)

(SAGA Light Source, Kyushu Univ.) ○Toshihiro Okajima, Kazuhiro Hara

III-2 [Analysis of 4-Methylcatechol-coated Magnetite Nanoparticles by Reactive Pyrolysis-Gas Chromatography](#)

(Chubu Univ.) Kaname Tsutsumiuchi, ○Takaaki Mukaino, Tomoaki Ohno, Tomomi Yano, Yasuyuki Ishida, Takeshi Kobayashi

III-3 [Degradation Behavior of Ethylene-vinyl Acetate Copolymer Studied by Analytical Pyrolysis Techniques](#)

(Nagoya Inst. Tech., S.B. Sheet Waterproof Systems) ○Jian Zhang, Hajime Ohtani, Udai Fukui, Hiroyuki Bekku, Shinichi Ishimaru

III-4 [Characterization of Terpolymers of Methacrylates by Multivariate Analysis of ¹³C NMR Spectra](#)

(Univ. of Tokushima, Mitsubishi Rayon) ○Tatsuya Naono, Hikaru Momose, Tomoya Maeda, Tomohiro Hirano, Koichi Ute

III-5 [GC/MS Analysis of Decabrominated Diphenyl Ether in Polystyrene](#)

(NMIJ/AIST, Nagoya Inst. Tech.) ○Shigetomo Matsuyama, Yukari Orihara, Shinichi Kinugasa, Hajime Ohtani

III-6 [Elution Behavior of Cationic Polymers on Size Exclusion Chromatography](#)

(TOSOH Analysis and Research Center) ○Reiko Okazaki, Nobuyuki Kagawa

III-7 [Interactions of Polyelectrolytes with Ion-Exchange Resin](#)

(Nagoya Inst. Tech.) ○Yasumoto Sakai, Noriyuki Okawa, Akio Yuchi

III-8 [Structural Analysis at the Hydrogel-Water Interface using SFG Spectroscopy](#)

(Menicon, NRI/AIST) ○Yuji Ito, Tetsuji Kawai, Takayuki Miyamae

III-9 [TOF-SIMS Analysis of Transdermal Tapes](#)

(Sumika Chemical Analysis Service) ○Takeshi Teratani, Takeshi Miki

III-10 [Qualitative Analysis of Additives in Synthetic Polymer using the MALDI-Spiral TOFMS](#)

(JEOL) ○Masaaki Ubukata, Masahiro Hashimoto, Yoshiyuki Itoh, Jun Onodera

III-11 [Study of Synthetic Polymer Analysis using MALDI SpiralTOF-TOF](#)

(JEOL) ○Masahiro Hashimoto, Ayumi Kubo, Yoshiyuki Itoh, Masaaki Ubukata, Jun Onodera

III-12 [Analysis of Recycled Polyesters using SEC-MALDI](#)

(Shimadzu) ○Yuzo Yamazaki

III-13 [Application of High-Frequency Heating to Polymer Analysis](#)

(DIC) ○Chieko Kasuya, Machiko Ito, Miho Watanabe, Tsuneo Kobayashi

III-14 [Structural Analysis of Polymer Materials by Pyrolysis GC×GC/MS](#)

(Asahi Kasei) ○Koji Sato, Emiko Ito, Kazuyuki Yoshida

- III-15** [Discussion on the Back Flush Condition for the Pyrolyzer-GC/MS System](#)
(Agilent Technologies International, Agilent Technologies) ○Takeshi Serino, Sadao Nakamura, Ryo Ogasawara
- III-16** [Characterization of Poly-Urethane Resin using NMR](#)
(DIC) ○Misumi Maruya, Akiko Amemiya, Fumio Fujikawa, Tsuneo Kobayashi
- III-17** [SEC-NMR Analysis of Polymer Material with THF Solvent](#)
(Nissan Chem.) ○Yuji Horiuchi, Kazuaki Shikii, Tomoyuki Ozawa, Hisae Miyamoto, Tatsuya Seki
- III-18** [Double Wall Ring Geometry to Measure Interfacial Rheological Properties](#)
(TA Instruments Japan) ○Masayoshi Takano, Aloyse J. Franck
- III-19** [Difference of Characteristic by Tone of PPS](#)
(Starlite) ○Mina Masuda
- III-20** [Three-Dimensional Observation of Polymeric Material by FIB-SEM - Consideration of Quantitative Accuracy-](#)
(Nitto Analytical Techno-Center) ○Koji Sawa, Mitsuro Kato
- III-21** [Analysis of Degradation Depth Profile of Paint Coating](#)
(Micro Analysis Lab., DYPLA WINTES) ○Ritsu Kamoto, Itsuo Nishiyama
- III-22** [XPS Analysis of Surface of Polymer Films Utilizing Chemical Modification](#)
(JSR) ○Tomikazu Ueno, Munetaka Iwano, Nobuyuki Ito
- III-23** [Measurement of Molecular Weight Distribution of Engineering Plastics and an Introduction of High Temperature GPC](#)
(Senshu Scientific) ○Hideo Gabari, Kazuyoshi Yasuno
- III-24** [Qualitative Analysis of Soft Segments of Polyester Polyurethane by Selective Degradation with Pyridine](#)
(Toray Research Center) ○Shuichi Toraya, Naru Higeta, Akiko Otsuki
- III-25** [Change in Physical and Chemical Properties of the Black Lacquer Film with Ultraviolet Irradiation](#)
(Tokyo Metropolitan Industrial Technology Research Institute, Meiji Univ.) ○Yoshimi Kamiya, Shinji Nishimura, Rong Lu, Teshuo Miyakoshi

Poster Preview & Poster Session IV

- IV-1** [Rapid Evaluation of the Weatherability of Acrylic Coating Paints for House Exterior Walls Using an on-line Micro Ultra Violet Py-GC/MS System](#)
(Frontier Laboratories, Asahi Kasei Homes, Asahi Kasei) ○Tetsuro Yuzawa, Chuichi Watanabe, Noriaki Shimane, Kazuyuki Yoshida
- IV-2** [Vulcanization Mechanisms of Isoprene Rubber Studied by Pyrolysis-Gas Chromatography with Sulfur Selective Detector](#)
(Nagoya Instit. Tech., Sumitomo Rubber Industries) ○Kensuke Ogusu, Hajime Ohtani, Hiroaki Yamada, Marina Kotani
- IV-3** [Rapid Discrimination of Drug Resistance Bacteria Based on Structural Analysis of Lipid and Protein Components](#)
(Chubu Univ., Nagoya Univ.) ○Kenichiro Ogimoto, Akinori Hashimoto, Tatsuhiko Yokoi, Yasuyuki Ishida, Akira Okamoto, Kumiko Kawamura
- IV-4** [Characterization of \(Meth\)acrylate Copolymers by DOSY -an Investigation on the Maximum Entropy Processing and Accuracy of the Determination-](#)
(Univ. of Tokushima, Mitsubishi Rayon) ○Tomoya Maeda, Kosuke Hattori, Tatsuya Naono, Hikaru Momose, Tomohiro Hirano, Koichi Ute
- IV-5** [The Study on Compositional Fractionation of Poly\(perfluorocarbon sulfonic acid\)](#)

(Kogakuin Univ., Asahi Kasei Chemicals, Asahi Kasei) ○Hiroaki Ono, Tadatomo Kawai, Yuzo Itoh, Yoshihumi Kado, Seiichi Ohhashi, Yasuhiro Hashimoto, Hiroshi Ohzeki

IV-6 [Interionic Contacts on Cation-Exchange Resins](#)

(Nagoya Inst. Tech.) ○Yuuya Watanabe, Midori Kishi, Akio Yuchi

IV-7 [Structural Analysis of Oligomeric Materials by MALDI-MS/MS \(3\)](#)

(Toray Research Center) ○Yoshihiko Taguchi, Akiko Otsuki

IV-8 [Structural Characterization of Methacrylate Ester Copolymers by High-Resolution MALDI-TOFMS](#)

(EMTech/AIST, Mitsubishi Rayon, JEOL) ○Hiroaki Sato, Yoko Ishii, Hikaru Momose, Takafumi Sato

IV-9 [Polymerization Analysis of Polymer containing Urethane / Urea bond by Analytical Pyrolysis](#)

(RICOH, Nagoya Inst. Tech.) ○Akinori Saitoh, Hajime Ohtani, Hiromi Aoi

IV-10 [Thermal History Evaluation of Crystalline Polymers by DSC](#)

(Sumitomo Wiring Systems, Tokyo Metropolitan Univ.) ○Norio Manabe, Hiroaki Minami, Masanao Ishikawa, Hirohisa Yoshida

IV-11 [Investigation of Polymer Degradation by Multivariable Analysis for MALDI-TOFMS Data](#)

(JEOL, TUAT) ○Junichi Osuga, Kazunori Arifuku, Yoshiyuki Ito, Munetaka Nakata

IV-12 [Structural Investigation of High Molecular Weight Brominated Flame Retardants Using High Resolution TOF-MS](#)

(JEOL, AIST) ○Yoshiyuki Itoh, Hiroaki Sato, Masaaki Ubukata, Jun Onodera, Toru Kamo, Hiroaki Tao

IV-13 [Analysis of Polyethers by MALDI-MS/MS](#)

(DIC, Shimadzu) ○Daisuke Kusano, Hiroki Nakajima, Shin-ichirou Kawabata, Noriyuki Ojima, Fumio Fujikawa, Tsuneo Kobayashi

IV-14 [Terminal Group Analysis of Photopolymerized Products Using MALDI-TOFMS for the Study on the Oxime Ester Type Photoinitiators](#)

(Hitachi Chemical, AIST) ○Akihiro Unno, Osamu Hirai, Yukiko Muramatsu, Makoto Kaji, Shinichi Kinugasa, Kayori Takahashi

IV-15 [Polymer Analysis of Psuedo 2D Liquid Chromatogram Integrated with Two LC-ESI-MS Data using Different Columns](#)

(Kansai Univ., Nippon Synthetic Chemical Industry, Nissan Chem., Univ. of Tokushima) ○Hiroataka Hisatomi, Yukari Nishimoto, Tomoyuki Ozawa, Hideya Kawasaki, Koichi Ute, Ryuichi Arakawa

IV-16 [Analysis of Hydrolized Polymers by Atmospheric Solids Analysis Probe Mass Spectrometry](#)

(Gunma Pref. Industrial Technology Center) ○Satoshi Wada, Takahito Kawai, Kiyoshi Miyashita

IV-17 [Thermal Behavior and Degradation Mechanism of Binary Mixture of Polystyrene and Poly \(vinyl chloride\)](#)

(Saitama Pref. Police H.Q.) ○Yasushi Ehara

IV-18 [Study on the Material Deterioration by Pyrolyzer-GC/MS and Multivariate Analysis](#)

(Agilent Technologies International, Agilent Technologies) ○Takeshi Serino, Sadao Nakamura, Kuniyo Sugitate

IV-19 [Cross-Linking Reaction Analysis on Thermally Curable Polymer Thin Film by Chemical derivatization X-ray Photoelectron Spectroscopy](#)

(Nissan Chem.) ○Yuki Nohara, Mina Matsuo, Shigeaki Oyama, Takahiro Sakaguchi, Katsumi Chikama

IV-20 [Dynamic Vapor Sorption Analysis for Polymer Materials](#)

(TA Instruments Japan, TA Instruments-Waters, LLC.) ○Yasushiro Otsuka, Steven Aubuchon

IV-21 [3D Structure Observation by TEM Tomography. \(3\) Application to Macrodomain Morphology in Polymers](#)
(UBE Scientific Analysis Laboratory) ○Masatoshi Monma, Denichi Oda, Akira Nakamura

IV-22 [The Change of Molecular Dynamics for Drawn Ultra-High Molecular Weight Polyethylenes](#)
(Teijin, Teijin Techno Products) ○Kenji Sugimoto, Tomohiro Tanaka, Kazuhiko Satoh, Masao Hirasaka

IV-23 [Infrared Spectral Analysis of Polymer Materials after Hardness Test](#)
(Japan Society for the Promotion of Machine Industry) ○Satoshi Kawaguchi

IV-24 [Quantification of Adhesion Strength for Silicone Adhesive by the Ethoxysilane Derivatization](#)
(JTEKT, TOYOTA Central R & D Labs.) ○Toshiyuki Baba, Mototake Furuhashi, Motoyasu Sugiura

IV-25 [Oxidative Polymerization Behavior of Diphenylamine with Bridged Structure](#)
(Nagoya Municipal Ind. Res. Inst., Aichi Inst. Tech., NMIS, Aichi Med. Univ.) ○Hideki Hayashi, Hiroyoshi Inoue, Hidenobu Nakao, Hideki Hattori, Yukio Onouchi



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