

Program of

The 4th International Symposium on Silsesquioxanes-based Functional Materials (SFM2020)

November 4-6, 2020

Pusan National University, Busan, Korea

Welcome Message

Dear my colleagues;

Following the first and second SFM at Shandong University, China and the third at Gunma University, Japan, the 4th International Symposium on Silsesquioxanes-based Materials (SFM 2020) is held at Pusan National University, Busan, Korea on November 4-6, 2020.

As you know, the COVID-19 situation has been now pandemic all around this year. Thus we switched our SFM2020 to an online platform. We may have unexpected technical difficulties to host the symposium, but I and my local committee members will try to do our best for the successful organization of the SFM2020.

At any rate, we would like to invite all of you to attend at the SFM2020 to share our common interests on the research and development of silica or silsesquioxane based materials.

The symposium papers is presented by using Zoom (<https://zoom.us/download>) with real-time online talk or pre-recorded video. All participants should be connected via Zoom.

I hope all of you would enjoy the online SFM2020. I should deeply appreciate your active participation on the online SFM2020.

At last but not the least, I wish all of you, your family, and your research group members healthy and safe from the COVID-19.

Best regards
Chang-Sik

Ha, Chang-Sik
Chairperson of the SFM2020
Dept. of Polymer Science and Engineering,
Pusan National University,
Busan 46241, Korea
Email; csha@pnu.edu

(SFM2020)

The 4th International Symposium on Silsesquioxanes-based Functional Materials

Date November 4-6, 2020

VENUE Pusan National University, Busan, Korea

LOCAL ORGANIZING COMMITTEE

Chairman

Prof. Chang-Sik Ha (Pusan National Univ., KOREA)

Members

Won-Ki Lee (Pukyong National Univ., KOREA)

Ildoo Chung (Pusan National Univ., KOREA)

Youngkyoo Kim (Kyungpook National Univ., Korea)

Secretariat

Sung Soo Park (Pusan National Univ., KOREA)

Yong-Zhu Yan (Pusan National Univ., KOREA)

Jong-Man Yoo (Pusan National Univ., KOREA)

Organized by

- Nano/Information Materials Laboratory, Department of Polymer Science and Engineering, Pusan National University, Korea

Supported by

- Pusan National University, Korea
- WAPS Company Ltd.
- National Research Foundation of Korea
- KNU Institute for Nanophotonics Applications (KINPA)



Presentations and Proceedings

Language

The working language of the conference is English for all activities, papers and presentations

Oral Presentation

Plenary Lectures; 40 minutes including discussion

Keynote Lectures; 30 minutes including discussion

Invited talks; 20 minutes including discussion

Oral speakers; 15 minutes including discussion

All the oral lectures are held via online platform. Most of the oral presentation are given via real-time remote talk, while some of the presentation are given via pre-recorded video file that are marked as (v) in the program.

Poster Presentation

Poster presentation is also included in the program. The slide size is width 33.867 x height 19.05 with the horizontal slide direction. All poster presentations are given via video file including presenters' voice explaining posters.

Registration

| | Before Sept.20, 2020 | After Sept.20, 2020 |
|--------------------|-------------------------|------------------------|
| Active Participant | USD 100 | USD 150 |
| Student | USD 50 | USD 75 |

Zoom

The symposium papers are presented by using Zoom (<https://zoom.us/download>) with real-time online talk or pre-recorded video. All participants are connected via Zoom. For the on-line symposium, make your own real time presentation or video materials to present. Posters are also presented with video materials. Only registered participants can connect our Zoom system. We will assign a secret code for the registered participants to protect the security (including copyright law materials and so on) of the lectured materials.

SFM2020 Program at a Glance

| <i>Program of SFM 2020</i> | | | | | | | |
|---|---------------------------------|---------------------|--------------------------------------|---------------|--------------------------------------|---------------|-----------------------------|
| 4th International Symposium on Silsesquioxanes-based Functional Materials | | | | | | | |
| November 4-6, 2020 | | Program | | | | | |
| NOV.4 | | NOV.5 | | NOV.6 | | | |
| 09:00 -14:00 | Registration | 8:30 - 8:50 | Registration | 9:00 - 9:30 | KL-3 Byeong-Soo Bae (Korea) | | |
| | | 8:50 - 9:00 | Opening Remark Prof. Chang-Sik Ha | | | | |
| | | 9:00 - 9:40 | PL Richard Laine (USA) | 9:30 - 9:50 | IL-6 Joseph C. Furgal (USA) | | |
| | | 9:40 - 10:20 | KL-1 Masafumi Unno (JAPAN) | 9:50 - 10:10 | IL-7 Yoshio Kaneko (JAPAN) | | |
| | | 10:20 - 10:40 | IL-1 Albert S. Lee (KOREA)⊙ | 10:10 - 10:30 | IL-8 Fuping Dong (CHINA) | | |
| | | 10:40 - 11:00 | Break | 10:30 - 10:45 | Break | | |
| | | 11:00 - 11:20 | IL-2 SeungCheol Yang (KOREA) ⊙ | 10:45 - 11:00 | OL-11 Qingzeng Zhu (CHINA)⊗ | | |
| | | 11:20 - 11:40 | IL-3 Wen-Bin Zhang (CHINA) | 11:00 - 11:15 | OL-12 Mateusz P. Janeta (POLAND)⊗ | | |
| | | 11:40 - 12:00 | IL-4 Kensuke Naka (JAPAN)⊙ | 11:15 - 11:30 | OL-13 Wanli Li (CHINA) | | |
| | | 12:00 - 13:30 | Lunch time | 11:30 - 11:45 | OL-14 Jerome Peter (KOREA)⊗ | | |
| | | 13:30 - 14:00 | KL-2 Hongzhi Liu (CHINA) | 11:45 - 12:00 | OL-15 Yujia Liu(CHINA) | | |
| | | | | 12:00 - 13:30 | Lunch time | | |
| | | 14:00 - 18:00 | Poster Session | 14:00 - 14:20 | IL-5 Yury Shchipunov(RUSSIA) | 13:30 - 13:45 | OL-16 Sung-Soo Park (KOREA) |
| | | | | 14:20 - 14:35 | OL-1 Yong-Zhu Yan (KOREA) | 13:45 - 14:00 | OL-17 Jing Wang (CHINA) |
| 14:35 - 14:50 | OL-2 Md.Habib Ullah | | | 14:00 - 14:15 | OL-18 Shuai Yuan (CHINA) | | |
| 15:00 - 15:30 | Break | | | 14:15 - 14:30 | OL-19 Anju M. Thomas (KOREA) | | |
| 15:30 - 15:45 | OL-3 Chul-Yeon Lee (KOREA)⊗ | | | 14:30 - 14:45 | OL-20 Qingzheng Wang (CHINA) | | |
| 15:45 - 16:00 | OL-4 Wei-Jin Zhang (KOREA) | | | 14:45 - 15:05 | Break | | |
| 16:00 - 16:15 | OL-5 Ildoo Chung (KOREA) | | | 15:05-15:20 | OL-21 Aneesh Mathew (INDIA)⊗ | | |
| 16:15 - 16:30 | OL-6 Saravanan Nagappan (KOREA) | | | 15:20 - 15:35 | OL-22 Yajing Du (CHINA)⊗ | | |
| 16:30 - 16:50 | Break | | | 15:35 - 15:50 | OL-23 Qian Ge (CHINA)⊗ | | |
| 16:50 - 17:05 | OL-7 Agata S. Herc (POLAND)⊗ | | | 15:50 - 16:05 | OL-24 Surendran Parambadath (INDIA)⊗ | | |
| 17:05 - 17:20 | OL-8 Anandhu Mohan (KOREA) | | | 16:05-16:20 | OL-25 Maria Nowacka (POLAND) ⊗ | | |
| 17:20 - 17:35 | OL-9 Adrian Franczyk (POLAND) ⊙ | | | 16:20 - 16:50 | KL-4 Michel Wong Chi Man (FRANCE) | | |
| 17:35 - 17:50 | OL-10 Armelle Ouali (FRANCE) | | | 16:50 - 17:20 | KL-5 Ulrich Wiesner (USA) | | |
| | | | | 17:20 - 17:30 | Closing Remark | | |

Program

Wednesday, Nov. 4

09:00-14:00 Registration

14:00-18:00 Poster Session (Chair: Sung Soo Park)

Thursday, Nov. 5

08:30-08:50 **Registration**

(Chair: Sung Soo Park)

08:50-09:00 **Opening Remark** (*Chang-Sik Ha*)

(Chair: Chang-Sik Ha)

(PL) 09:00-09:40 *Richard Laine* University of Michigan, USA
**Chemistry, Photophysics and Photochemistry of Double Decker
Silsesquioxane Cages and Analogs**

(KL-1) 09:40-10:20 *Masafumi Unno* Gunma University, Japan
Recent development of Silsesquioxanes with New Framework

(IL-1) 10:20-10:40 *Albert S. Lee* Korea Institute of Science and Technology, Korea
**Energy and Environmental Applications of Ladder like Structured
Polysilsesquioxanes**

10:40-11:00 Break

(IL-2) 11:00-11:20 *SeungCheol Yang* Changwon National University, Korea
**Siloxane based Pore Filling Anion Exchange Membrane for Application in
Reverse Electrodialysis**

(IL-3) 11:20-11:40 *Wen-Bin Zhang* Peking University, China
Exploring Macromolecular Isomerism using Janus POSS

(IL-4) 11:40-12:00 *Kensuke Naka* Kyoto Institute of Technology, Japan
**Beads-On-String-Shaped Element-Block Polymers based on Cage
Silsesquioxanes**

12:00-13:30 Lunch

(Chair: Sung Soo Park)

- (KL-2) 13:30-14:00 *Hongzhi Liu* Shandong University, China
Silsesquioxanes-Based Functional Porous Polymers
- (IL-5) 14:00-14:20 *Yury Shchipunov* Russian Academy of Sciences, Russia
Cellulose Functionalization via Mineralization by Sol-Gel Chemistry
- (OL-1) 14:20-14:35 *Yong-Zhu Yan* Pusan National University, Korea
Polyethyleneimine-grafted Polysilsesquioxane Hollow Spheres for the Highly Efficient Removal of Anionic Dyes and Selective Adsorption of Cr(VI)
- (OL-2) 14:35-14:50 *Md. Habib Ullah* American International University-Bangladesh (AIUB), Bangladesh
Effect of pHs on the Structure Evolution of Pt Nanoclusters: Their Surface Plasmon Resonance and Catalytic Properties

15:00-15:30 Break

(Chair: Ildoo Chung)

- (OL-3) 15:30-15:45 *Chulyeon Lee* Kyungpook National University(Korea)
Highly Stable Organic Memory Devices with Organic/Inorganic Hybrid Memory Layers
- (OL-4) 15:45-16:00 *Wei-Jin Zhang* Pusan National University, Korea
ROS-responsive Drug Release from Polymer-Coated Mesoporous Silica Spheres
- (OL-5) 16:00-16:15 *Ildoo Chung* Pusan National University, Korea
Biodegradable Porous Microspheres by UV Irradiation
- (OL-6) 16:15-16:30 *Saravanan Nagappan* Pusan National University, Korea
Mesoporous material for transparent coatings and organic dye adsorption

16:30-16:50 Break

- (OL-7) 16:50-17:05 *Agata S. Herc* Centre of Molecular and Macromolecular Studies
Polish Academy of Sciences, Poland
Functionalized Polysilsesquioxanes for Polymer Science
- (OL-8) 17:05-17:20 *Anandhu Mohan* Pusan National University, Korea
Synthesis of Palladium Nanoparticles Anchored Dual-responsive SBA-15-PNIPAM/PMAA Nanoreactor: A Novel Heterogeneous Catalyst for Green Suzuki Coupling Reactions

(OL-9) 17:20-17:35 *Adrian Franczyk* Adam Mickiewicz University in Poznan,
Poland
Poly(methacrylate)s with POSS Moieties: Synthesis and Characterization

(OL-10) 17:35-17:50 *Armelle Ouali* French National Center of Scientific Research
(CNRS) – Institut Charles Gerhardt
Montpellier, France
Synthesis and Applications of Tetrafunctional Double-Decker Siloxanes

Friday, Nov. 6

08:30-09:00 Registration

(Chair: Chae Bin Kim)

(KL-3) 09:00-09:30 *Byeong-Soo Bae* Korea Advanced Institute of Science and
Technology, Korea
**In Situ Sol-Gel Synthesis of Siloxane-Encapsulated Quantum Dot Resin
for Converter Applications**

(IL-6) 09:30-09:50 *Joseph C. Furgal* Bowling Green State University, USA
Silsesquioxane Hybrid Polymers from Static to Photoactive Sponges

(IL-7) 09:50-10:10 *Yoshiro Kaneko* Kagoshima University, Japan
Preparation and application of ionic POSS-linking polymer

(IL-8) 10:10-10:30 *Fuping Dong* Guizhu University, China
**Porous Polysilsesquioxane/MOFs Composites: Fabrication and Their
Adsorption Properties**

10:30-10:45 Break

(OL-11) 10:45-11:00 *Qingzeng Zhu* Shangdong University, China
Design and Synthesis of Functional Polysilsesquioxane Materials

(OL-12) 11:00-11:15 *Mateusz P. Janeta* University of Wroclaw, Poland
**Zinc Imine Polyhedral Oligomeric Silsesquioxane as a Quattro-site
Catalyst for the Synthesis of Cyclic Carbonates from Epoxides and Low
Pressure CO₂**

(OL-13) 11:15-11:30 *Wanli Li* Shandong University, China
**Preparation and Application of Phenylcarbazole Derivative Functionalized
Silsesquioxane based Hybrid Porous Polymer**

(OL-14) 11:30-11:45 *Jerome Peter* Pusan National University, Korea
Transfer Hydrogenation of Ketones by Pd Alginate Polymer Beads

(OL-15) 11:45-12:00 *Yujia Liu* Gunma University, Japan
Synthesis and Functionalization of New Tricyclic Ladder-type Silsesquioxanes with Reactive Substituents

12:00-13:30 Lunch

(Chair: Youngkyoo Kim)

(OL-16) 13:30-13:45 *Sung-Soo Park* Pusan National University, Korea
Facile Synthesis and the Application for Hydrogen Adsorption of Mesoporous Carbon Nitrides using the Hard Template

(OL-17) 13:45-14:00 *Jing Wang* Guangxi University, China
Functionalized Mesoporous Silica as Fluorescent Sensors for Selective Metal Ion Detection in Aqueous Medium

(OL-18) 14:00-14:15 *Shuai Yuan* Shanghai University, China
Silica Coating for Lithium Ion Battery Separators with High Performance

(OL-19) 14:15-14:30 *Anju Maria Thomas* Pusan National University, Korea
Mild Oxidation of Alcohols using Ag Nanoparticles Decorated Dual Stimuli-responsive Polymer Grafted SBA-15 Catalyst.

(OL-20) 14:30-14:45 *Qingzheng Wang* Shandong University, China
Silsesquioxane-Based Triphenylamine Functionalized Porous Polymer for Dye Adsorption and Nitro-aromatics Detection

14:45-15:05 Break

(OL-21) 15:05-15:20 *Aneesh Mathew* Pavanatma College, Murickassery, Kerala, India
Silica Snap-Top Nano Containers for Selective Recovery of Precious Metal-Ions from Seawater

(OL-22) 15:20-15:35 *Yajing Du* Shandong University, China
A fluorescence-tuned POSS and Triazine-based Hybrid Porous Polymer for Adsorption of Dyes and Metal Ions, and Sensing of Nitroaromatics

(OL-23) 15:35-15:50 *Qian Ge* Shandong University, China

Nitrogen-containing Silsesquioxane-based Hybrid Materials Mediated by Bases and Their Use in Adsorption of Heavy Metal Ions

(OL-24) 15:50-16:05 *Surendran Parambadath* Sree Neelakanta Government
Sanskrit College, India

Chelation Dependent Selective Adsorption of Metal ions by SBA-15 Immobilized Schiff's Base from Aqueous Solution

(OL-25) 16:05-16:20 *Maria Nowacka* Centre of Molecular and Macromolecular
Studies, Polish Academy of Sciences, Poland

Energy transfer with optically active ladder polysilsesquioxanes

(Chair: Chang-Sik Ha)

(KL-4) 16:20-16:50 *Michel Wong Chi Man* Institut Charles Gerhardt Montpellier
(ICGM), University of Montpellier, CNRS, ENSCM, Montpellier, France

Silsesquioxane Families: Cage-like, Bridged and PMOs

(KL-5) 16:50-17:20 *Ulrich Wiesner* Cornell University, USA

From Silica Cages to Functional Materials

17:20 -17:30 Closing Remark (*Qifang Li*)

Poster Presentation

(Nov. 4, 14:00-18:00)

(P-01) Aimi Endo^a, Yujia Liu^a, Armelle Ouali^b, Kazuki Onodera^a, Jun Guan^c, Richard M. Laine^c, Nobuhiro Takeda^a, and Masafumi Unno^a
(^aGunma University, Japan, ^bFrench National Center of Scientific Research (CNRS) – Institut Charles Gerhardt Montpellier, France, ^cUniversity of Michigan, USA)
Synthesis, Characterization, and Functionalization of Divinyl-substituted Laddersiloxanes

(P-02) Jiang Huang and Jing Wang*
(Guangxi University, China)
Terthiophene Functionalized Mesoporous Silica-based Fluorescence Sensor for Selective Detection of Methyl Orange

(P-03) Hongwei Li and Fuping Dong*
(Guizhou University, China)
Polysilsesquioxane Hollow Spheres with Open Window on the Shell

(P-04) Shangru Zhai*
(Dalian Polytechnic University, China)

Functionalized SBA-15/Polypyrrole Composite for Superior Electromagnetic Wave Absorption

- (P-05) Jong-Man Yoo, Sung Soo Park, Yong-Zhu Yan, and Chang-Sik Ha*
(Pusan National University, Korea)
Adsorption Behavior of Metal Ions on the SBA-15 Modified with Crown Ether Containing Carboxyl Group
- (P-06) Jungwon Kong, Sung Soo Park, and Chang-Sik Ha*
(Pusan National University, Korea)
Fabrication of pH-Responsive Mesoporous Silica Drug Delivery Matrix for Sustained Release
- (P-07) Heekyung Jin, Sung Soo Park, and Chang-Sik Ha*
(Pusan National University, Korea)
Carboxymethyl cellulose based Bionanocomposite Films with MMT and Imidazolium-POSS
- (P-08) Keuk-Min Jeong^a, Sung Soo Park^a, Saravanan Nagappana, Guoquan Min^{b,c}, Yongxu Zhang^{b,c}, Minming Qu^{b,c}, Yan Zhang^d, Chang-Sik Ha^{a,*}
(^aPusan National University, Korea, ^bShanghai Industrial Technology Institute, China, ^cShanghai Nanotechnology Promotion Center, China, ^dEast China University of Science and Technology, China)
Highly Transparent, Organic-Inorganic Hybrid UV-curable Coating Materials with Amphiphobic Characteristics
- (P-09) Namkyung Lee, Sung Soo Park, and Chang-Sik Ha*
(Pusan National University, Korea)
pH-Sensitive Drug Delivery System Based on Mesoporous Silica Modified with Poly-L-Lysine (PLL) as a Gatekeeper
- (P-10) Sang-Wook Chu, Sung Soo Park, and Chang-Sik Ha*
(Pusan National University, Korea)
Light-Activated Polymer-Coated Mesoporous Silica with Azobenzene Moiety for the Controlled Delivery of Guest Molecules
- (P-11) Yubin Jeon, Saravanan Nagappan, and Chang-Sik Ha*
(Pusan National University, Korea)
Hexadecyltrimethylammonium Bromide Surfactant-Supported Silica Material for the Effective Adsorption of Metanil Yellow Dye
- (P-12) Inho Shin^a, Irina Postinova^{b,c}, Yury Shchipunov^b, and Chang-Sik Ha^{*,a}
(^aPusan National University, Korea, ^bInstitute of Chemistry, Far East Department, Russian Academy of Sciences, Vladivostok, Russia, ^cDepartment of Physical and Analytical Chemistry, Far-Eastern Federal University, Vladivostok, Russia)
Transparent Regenerated Cellulose Bionanocomposite Film Reinforced by

Exfoliated Montmorillonite with Polyhedral Oligomeric Silsesquioxane Bearing Amino Groups

- (P-13) Huihui Jiang and Jing Wang*
(Guangxi University, China)
Terthiophene-based fluorescent probe for tracing multiple analytes
- (P-14) Honghui Cai and Jing Wang*
(Guangxi University, China)
Highly Sensitive Fluorescent Probe for Discriminative Detection of Water in Organic Solvents
- (P-15) Xing Gao, Qi Sun, Xiaoming Tang, Fangzheng Hu, Lei Liu, Ning Cao, and Xiuguo Cui*
(Beijing Institute of Petrochemical Technology, China)
Enhanced Cycle Stability and Energy Density of Zinc Ionic Battery using Phosphorene/Polyaniline Composite Cathode
- (P-16) Shangzhou Liu, Xiaoming Tang, and Huiqin Lian
(Beijing Institute of Petrochemical Technology, China)
Preparation of Black Phosphorus-Carbon Nanotube Composites Using In-Situ Synthesis Method
- (P-17) Jisu Park, Hyemi Han, Chulyeon Lee, Woongki Lee, Sooyong Lee, Saebom Lee, Taehoon Kim, Hwajeong Kim, and Youngkyoo Kim*
(Kyungpook National University, Korea)
Organic Phototransistors Based on Near Infrared Conjugated Polymer Gate-Sensing Layers – New Device Structure
- (P-18) Sooyong Lee, Chulyeon Lee, Woongki Lee, Jisu Park, Saebom Lee, Taehoon Kim, Hwajeong Kim, and Youngkyoo Kim*
(Kyungpook National University, Korea)
Investigation of Short-Term and Long-Term Stability in High Efficiency Organic Solar Cells
- (P-19) Woongki Lee, Chulyeon Lee, Sooyong Lee, Jisu Park, Saebom Lee, Taehoon Kim, Hwajeong Kim, and Youngkyoo Kim*
(Kyungpook National University, Korea)
Organic Thermoelectric Devices Based on Conducting Polymers for Practical Applications
- (P-20) Joung Jin Im and Youngeup Jin*
(Pukyong National University, Korea)
Effect of Branched Alkyl Side Chain in PSCs based on Phenazine
- (P-21) Donghyeok Im, Seungjae Lee, Vishal Gavande, Youngup Jin, and Won-Ki Lee*
(Pukyong National University, Korea)
Synthesis and Properties of Multi-armed Enantiomeric Polylactide-Polycaprolactone Block Copolymers

- (P-22) Donghyeok Im, Gayeon Kim, Bong Lee, Youngup Jin, Won-Ki Lee*
(Pukyong National University, Korea)
Compatibility and Hydrolytic Behaviors of Polylactide/Poly(buylene succinate) Mixtures by the Langmuir Techniques
- (P-23) Soo-Yong Park and Ildoo Chung*
(Pusan National University, Korea)
Biodegradable and Biocompatible Polyurethanes Double Emulsion Nanoparticles for Gene Delivery and Drug Delivery
- (P-24) Yujin Lee and Ildoo Chung*
(Pusan National University, Korea)
Synthesis and Characterization of 3D Printable Dental Resin based on Catechol Derivatives
- (P-25) Haram Moon, Yong-Zhu Yan, Sung Soo Park, and Chang-Sik Ha*
(Pusan National University, Korea)
Polyimide/MXenes Hybrid Composite Films
- (P-26) Chao Xing, Yong-Zhu Yan, Wei-Jin Zhang and Chang-Sik Ha*
(Pusan National University, Korea)
Study on Compatibility of Miscible Blends of Chemically Modified PPO(Nitrated PPO and Nitrated Chlorinated PPO)/SAN
- (P-27) Dae-Geon Yoo^a, Sung Soo Park^a, Chi-Woo Noh,^b and Chang-Sik Ha^{*a}
(^aPusan National University, Korea, ^bNDT Engineering and Aerospace Co. Ltd., Korea)
Polyimide Nanohybrid Films with Electrochemically Functionalized Graphene
- (P-28) Merreta Noorenza Biutty and Seong Il Yoo*
(Pukyong National University, Korea)
Au Nanoparticles Embedded PDMS Porous for Controlling Dielectric Constant in Enhancement of Triboelectric Nanogenerator Performance
- (P-29) Maulida Zakia and Seong Il Yoo*
(Pukyong National University, Korea)
Synthesis of Au@Polydopamine@Ag and Investigation of Their Catalytic Activity
- (P-30) Vishal Gavande, Donghyeok Im, Youngup Jin, Byeonguk Kim, and Won-Ki Lee*
(Pukyong National University, Korea)
A Note on 3D Bio Polybutylene Succinate Electrospun Nanofiber Scaffold for Biomimetic Structures
- (P-31) Vishal Gavande, Seungjae Lee, Bong Lee, Youngup Jin, and Won-Ki Lee*
(Pukyong National University, Korea)
Multifunctional UV-curable Two Dimensional hBN/Polyurethane Acrylate Nanocomposite Coatings
- (P-32) Kyoka Koizumi^a, Yujia Liu^a, Armelle Ouali^b, Nobuhiro Takeda^a, and Masafumi Unno^{a,*}

(^aGunma University, Japan, ^bFrench National Center of Scientific Research (CNRS) – Institut Charles Gerhardt Montpellier, France)

Synthesis of Novel Cage Silsesquioxanes for Applications to Catalysis and Materials

- (P-33) Chaiprasert Thanawat, Yujia Liu, Nobuhiro Takeda, and Masafumi Unno*
(Gunma University, Japan)
Janus Ring Siloxane: Versatile Precursor of Extended Janus Ring and Tricyclic Laddersiloxanes (Bat-shaped Silsesquioxane)
- (P-34) Kanata Takizawa, Yusuke Fujikawa, Nobuhiro Takeda, and Masafumi Unno*
(Gunma University, Japan)
Synthesis and Catalytic Activities of New Rhodium Complex with SiS₃ Tripodal Tetradentate Ligand
- (P-35) Mai Katano,¹ Yujia Liu,¹ Nobuhiro Takeda,¹ Armelle Ouali,² and Masafumi Unno^{1,*}
(¹Gunma University, Japan, ²French National Center of Scientific Research (CNRS) – Institut Charles Gerhardt Montpellier, France)
Synthesis of Tricyclic Laddersiloxanes for Various Applications
- (P-36) Kazuki Ohwada, Nobuhiro Takeda, and Masafumi Unno*
(Gunma University, Japan)
Synthesis of New Iridium Complex Bearing PS₃-type Tripodal Tetradentate Ligand and Its Application to Catalyst For Hydrosilylation
- (P-37) Sung Soo Park¹, Chang-Sik Ha,^{1*} Bruno Ameduri²
(¹Pusan National University, Korea, ²Ingénierie et Architectures Macromoléculaires Institut, France)
One-pot Synthesis of Alkylammonium-Functionalized Hollow and Film Mesoporous Silica using Fluorinated Anion Surfactant as Co-Template
- (P-38) Xiaoqian He,^{1,3} Chang-Sik Ha^{*,1}, Pradip Kumar Tapaswi,² and Wei Huang^{*,1}
(¹Pusan National University, Korea, ²University of Calcutta, India, ³Shanghai Jiao Tong University, China)
Synthesis of Soluble and Transparent Polyimide Derived from a Novel Diamine Containing Imidazole Unit and Trifluoromethyl Groups