

The 8th Asian Polyolefin Workshop (APO2019)

December 2-6, 2019

Higashihiroshima City Arts & Culture Hall (Kurara), Japan

Time Table

December 2 (Mon)	
	Room B
15:00-	Registration
17:00-	Welcome Reception

December 3 (Tue)
Room A
10:30-10:40 Opening Remarks: Takeshi Shiono (Hiroshima University, Japan)
Chair: Takeshi Shiono (Hiroshima Univ. Japan) 10:40-11:25 PL1: T. C. Mike Chung (The Pennsylvania State University, USA) <i>Functional Polyolefin; Synthesis, Property, and Applications Enabling Green Energy Technologies</i>
Chair: Seong Ihl Woo (KAIST, Korea) 11:25-12:10 PL2: Minoru Terano (JAIST, Japan) <i>Stopped-Flow Polymerization: A Tool for Understanding Heterogeneous Ziegler-Natta Catalysis</i>
Lunch (12:10-13:25)
Chair: Takao Tayano (Mitsubishi Chemical Co., Japan) 13:25-14:10 PL3: Terunori Fujita (Mitsui Chemicals, Japan) <i>Development of New Olefin Insertion Catalysts and the Formation of Value-Added Olefin-Based Materials</i>
Break (14:10-14:20)
Chair: Wen-Hua Sun (Institute of Chemistry, CAS, China) 14:20-14:50 IL01: Moris S. Eisen (Technion - Israel Institute of Technology, Israel) <i>Amidines and Imidazoline-2-iminato Group 4 Complexes in the Polymerization of Olefins</i>
14:50-15:20 IL02: Bo-Geng Li (Zhejiang University, China) <i>Synthesis of iPP/(P-co-B) Alloy by In-situ Slurry Polymerization</i>
Chair: Kotohiro Nomura (Tokyo Metropolitan University, Japan) 15:20-15:50 IL03: Kohtaro Osakada (Tokyo Institute of Technology, Japan) <i>Productive Isomerization Polymerization of Hydrocarbon Monomers Catalyzed by Pd Complexes</i>
15:50-16:20 IL04: Dongmei Cui (Changchun Institute of Applied Chemistry, CAS, China) <i>Synthesis of "Plastic" Rubber through Coordination Polymerization Using rare-earth Metal Precursors</i>

Special Session brought by Toho Titanium Co. Ltd.
(Capacity: 100 persons)

Room B
16:20-16:40 Registration
16:40-16:45 Opening Remarks: Takuo Kataoka, Executive Officer (Toho Titanium, Japan)
16:45-17:15 Special Lecture: Riichiro Nagano (TOWNSEND Solutions, Japan) <i>Recent Trend of Global Polyolefin Market and Status of Plastic Environmental Issues</i>
Oral Presentation
17:15-17:35 Hideo Funabashi (Toho Titanium, Japan) <i>Toho technology and future prospects through innovation</i>
17:35-17:55 Padavattan Govindaswamy (Toho Titanium, Japan) <i>Recent progress in propylene polymerization catalyst and its future</i>
Lecture & Discussion Chair: Minoru Terano (JAIST, Japan)
17:55-18:05 T. C. Mike Chung (The Pennsylvania State University, USA) <i>Synthesis, Property, and Application of Functional Polypropylene Polymers Prepared by the 4th Generation Ziegler-Natta Catalyst</i>
18:05-18:15 Shin-ichi Kuroda (Gunma University, Japan) <i>Research Trend on Microplastic Formation Mechanism</i>
18:15-18:25 Hisayuki Nakatani (Nagasaki University, Japan) <i>Production mechanism of polypropylene microplastic in water</i>
18:25-18:40 Discussion
18:50-20:20 Banquet at "Kurara Café Soraoto"
20:20- Closing Remarks: Takuo Kataoka, Executive Officer (Toho Titanium, Japan)

December 4 (Wed)	
Room A	
Chair: Moris S. Eisen (Technion, Israel)	
9:20-9:50 IL05: Kotohiro Nomura (Tokyo Metropolitan University, Japan) <i>Effect of Anionic Donor Ligands and Al Cocatalyst in Ethylene (Co)polymerization Using (Arylimido)vanadium Complex Catalysts</i>	
9:50-10:20 IL06: Young Soo Ko (Kongju National University, Korea) <i>Shape-controlled olefin polymerization with single-site catalyst confined inside the nanospace of metal-organic frameworks</i>	
10:20-10:40 CL01: Ashutosh Thakur (JAIST, Japan) <i>Origin of Cooperative Ethylene Polymerization Among Multiple Active Centers Integrated in Polymer Random Coils</i>	
Break (10:40-10:55)	
Chair: Yuushou Nakayama (Hiroshima Univ., Japan)	
10:55-12:40 Poster Short Talk	
Lunch (12:40-14:00)	
14:00-15:30 Poster Session (Presentation time: odd numbers 14:00-14:45, even numbers 14:45-15:30)	
Break (15:30-15:45)	
Room A	Room B
Chair: Zhengguo Cai (Donghua Univ., China)	Chair: Toshiaki Taniike (JAIST, Japan)
15:45-16:15 IL07: Changle Chen (University of Science and Technology of China, China) <i>Synthesis and Properties of Polar Functionalized Polyolefins</i>	15:45-16:15 IL08: Yusuke Hiejima (Kanazawa University, Japan) <i>In situ Raman spectroscopy for detection of conformational changes in polyolefins under various environments</i>
16:15-16:35 CL02: Jin Jung (The University of Tokyo, Japan) <i>Copolymerization of ethylene and methyl acrylate using a cobalt complex of tethered cyclopentadienyl ligand</i>	16:15-16:35 CL05: Zhe Ma (Tianjin University, China) <i>Unusual II-I Phase Transition Behavior of Polybutene-1 Ionomers in the Presence of Long-chain Branch and Ionic Functional Groups</i>
CL04: Cancelled	CL03: Cancelled

Banquet

18:00-

@ Saijo Hakuwa Hotel

December 5 (Thu)	
Room A	Room B
Chair: Kohtaro Osakada (Tokyo Institute of Technology, Japan)	Chair: Hong Fan (Zhejiang University, China)
9:20-9:50 IL09: Zhengguo Cai (Donghua University, China) <i>Nickel Catalyzed Olefin Copolymerization with Polar Monomers</i>	9:20-9:50 IL10: Boping Liu (South China Agricultural University, China) <i>Future Perspective of Bimodal Polyethylene Synthesized by Bimetallic Catalysts within One Single Reactor</i>
9:50-10:20 IL11: Zhongbao Jian (Changchun Institute of Applied Chemistry, CAS, China) <i>Dual Strategy of Group 10 Metal Catalysts and Polar Monomers for New Polyolefin Architectures</i>	9:50-10:20 IL12: Wei Li (Ningbo University, China) <i>Controlled distribution of active sites in the heterogeneous catalyst towards the synthesis of high performance polyethylene</i>
10:20-10:40 CL06: Zhengwei Bie (Zhejiang University, China) <i>Alternating Copolymerization of Ethylene and Carbon Monoxide Catalyzed by Ni Complex</i>	10:20-10:40 CL07: Natchayapak Phromphu (Chulalongkorn University, Thailand) <i>Effect of internal electron donor on ethylene/1-hexene copolymerization behaviors over supported TiCl₄/MgCl₂ catalysts prepared via Grignard reaction</i>
Break (10:40-10:55)	
Chair: Zhongbao Jian (Changchun Institute of Applied Chemistry, CAS, China)	Chair: Boping Liu (South China Agricultural University, China)
10:55-11:25 IL13: Wenjuan Zhang (Beijing Institute of Fashion Technology, China) <i>Highly efficient and thermal stable iron (cobalt) complexes for ethylene polymerization</i>	10:55-11:25 IL14: Hong Fan (Zhejiang University, China) <i>Synthesis of novel silicone-containing (macro)monomers and their coordination copolymerizations with ethylene</i>
11:25-11:55 IL15: Shengyu Dai (Anhui University, China) <i>Application of Coordination Polymerization in the Synthesis of New Polyolefin Materials</i>	11:25-11:55 IL16: Hui Niu (Dalian University of Technology, China) <i>Thermoreversible Cross-Linking of Ethylene/Propylene Rubber</i>

11:55-12:15 CL08: Wenhong Yang (Institute of Chemistry, CAS, China) <i>Catalytic Performance of Late Transition Metal Complexes in Ethylene Polymerization by Using QSAR Modeling</i>	11:55-12:15 CL09: Fah Chaitosa (Chulalongkorn University, Thailand) <i>Temperature effect on MgCl₂/vanadium Ziegler-Natta catalyst prepared from spherical Mg(OEt)₂ for ethylene/1-hexene copolymerization</i>
12:15-12:35 CL10: Mostafa Khoshsefat (University of Alberta, Canada) <i>New insight into chain shuttling polymerization through mixed and linked Ni/Fe based catalysts</i>	12:15-12:35 CL11: Wasinee Ousirisombat (Chulalongkorn University, Thailand) <i>Synthesis of SiCl₄/TEOS/TiCl₄/MgCl₂-Ziegler-Natta catalysts for ethylene/1-hexene copolymerization</i>
Lunch (12:35-13:55)	
Chair: Dongmei Cui (Changchun Institute of Applied Chemistry, CAS, China)	Chair: G. S. Kapur (Indian Oil, India)
13:55-14:25 IL17: Bun Yeoul Lee (Ajou University, Korea) <i>MAO-free Catalytic System for Ethylene Tri- and Tetramerization</i>	13:55-14:25 IL18: Hayder Zahalka (SI Group, USA) <i>Optimization of Phosphite Structure-Property Relationship for Enhanced Polyolefin Stabilization: Kinetic Studies</i>
14:25-14:55 IL19: Shaofeng Liu (Qingdao University of Science and Technology, China) <i>How Close is Too Close? Polymerization Behavior and Monomer-Dependent Reorganization of a Bimetallic Salphen Organotitanium Catalyst</i>	14:25-14:55 IL20: Mihail Matsko (Boreskov Institute of Catalysis, Russia) <i>Formation of Ziegler-Natta catalysts on the surface of carbon nanomaterials to obtain polyolefin-based composite materials by in-situ polymerization.</i>
14:55-15:15 CL12: Suphitchaya Kitphaitun (Tokyo Metropolitan University, Japan) <i>Aryloxo-Modified Half-Titanocenes as Highly Active Ethylene Copolymerization Catalysts: Effect of Phenoxy para Substituents</i>	14:55-15:15 CL13: Shokoufeh Hakim (Iran Polymer and Petrochemical Institute, Iran) <i>Effects of Mixtures of Two External Electron Donors on Microstructure and Properties of Polypropylene/Poly(ethylene-co-propylene) in-Reactor Blends Based on Ziegler-Natta Catalyst</i>
Break (15:15-15:30)	

Chair: Bun Youel Lee (Ajou Univ. Korea)	Chair: Toshiya Uozumi (Toho Titanium, Japan)
15:30-16:00 IL21: Alberto Ortín (Polymer Char, Spain) <i>Tools for the challenging production control of newly developed resins</i>	15:30-16:00 IL22: G. S. Kapur (Indian Oil, India) <i>Novel High Activity Ziegler-Natta Catalysts for Polyethylene and Polypropylene</i>
16:00-16:20 CL14: Yu Pan (Dalian University of Technology, China) <i>Rare-Earth Complexes bearing Oxazoline-based Ligands for Coordination Polymerization and Ring-Opening Polymerization</i>	16:00-16:20 CL15: Sikarin Tamiyakul (SCG Chemicals, Thailand) <i>The Improvement of 5th Generation Ziegler Natta Catalyst for Industrial Applications</i>
16:20-16:40 CL16: Ryo Tanaka (Hiroshima University, Japan) <i>Chemistry of Methylaluminoxane - Efficient preparation method and composition control</i>	16:20-16:40 CL17: Toru Wada (JAIST, Japan) <i>Determination of Structural Disorder in Nanosized δ-MgCl₂ using Synchrotron X-ray Total Scattering Technique</i>
16:40-17:00 CL18: Samiul Islam Chowdhury (Hiroshima University, Japan) <i>Copolymerization of Norbornene and p-Substituted Styrenes using Anilinonaphthaquinone-ligated Nickel Complexes</i>	16:40-17:00 CL19: Gentoku Takasao (JAIST, Japan) <i>Features of TiCl₄ on Primary Particles of Ziegler-Natta Catalysts Studied by Machine Learning-Aided DFT Calculations</i>
17:00-17:20 CL20: Yawei Qin (Institute of Chemistry, CAS, China) <i>Copolymerization of Dichlorosilane-Functionalized Nonconjugated α,ω-Diolefin and Propylene with Zeigler-Natta Catalyst: Effect of Catalyst Type and Diolefin Structure</i>	17:00-17:20 CL21: Harshad Patil (Reliance, India) <i>An Insight into Synthesis of Propylene-co-1-octene Copolymer with Ziegler Natta Catalyst: Effect of External Donor Variation</i>
17:20-17:40 CL22: Weizhen Zhao (Institute of Process Engineering, CAS, China) <i>Synthesis of New Cyclic Olefin Copolymers Using Half-Titanocene Catalysts</i>	17:20-17:40 CL23: Li Pan (Tianjin University, China) <i>From isotactic Polypropylene to varies Functional Copolymers</i>

December 6 (Fri)	
Room A	
Chair: Takeshi Shiono (Hiroshima Univ., Japan)	
9:20-9:50	IL23: Wen-Hua Sun (Institute of Chemistry, CAS, China) <i>Late Transition Metal Precatalysts for Ethylene Polymerization: New Progress and Characteristic Feature of Resulting Polyethylenes</i>
9:50-10:20	IL24: Saufudin Abubakar (ExxonMobil Chemical, China) <i>New Platform of High Melt Strength Polypropylene</i>
Chair: Li Pan (Tianjin Univ., China)	
10:20-10:50	IL25: Suojiang Zhang (Institute of Process Engineering, CAS, China) <i>The application of Ionic liquids in polymerization systems</i>
10:50-11:20	IL26: Sasiradee Jantasee (Rajamangala University of Technology Thanyaburi, Thailand) <i>Gas-phase ethylene polymerization using Ziegler-Natta catalyst versus prepolymerized catalyst</i>
11:20	Closing Remarks: Takeshi Shiono (Hiroshima University, Japan)

APO2019 Poster Session (December 4, 14:00~15:30)

★: Short Talk Available (December 4, 10:55~12:40)

P001 Controlled synthesis of branch-on-branch polyethylene using coordinative chain transfer polymerization

Yasaman Madah^a, Saeid Ahmadjo^{b*}, Mohhammad Mahdi Mortazavi^b, **Mostafa Khoshsefat**^b, Maryam Doweirjawi^c

^aDepartment of Polymer Engineering and Color Technology, Amirkabir University of Technology, Iran.

^bDepartment of Polymer Engineering, Iran Polymer and Petrochemical Institute, Iran. ^cDepartment of Research and Development, Amirkabir Petrochemical Company, Iran.

P002 Synthesis of crystalline alternating copolymer of butadiene and propylene

Keita Yonekura^a, Shouichi Matsumoto^{a*}, Takuo Sone^a, Takeshi Shiono^b

^aJSR Corporation, Japan. ^bDepartment of Applied Chemistry, Graduate School of Engineering, Hiroshima University, Japan.

P003 Synthesis of New Cyclic Olefin Copolymers (COCs) by Ethylene Copolymerizations with Cyclic Olefins Using Half-Titanocene Catalysts

Masaki Okabe, Hitoshi Harawaka and Kotohiro Nomura*

Department of Chemistry, Graduate School of Science, Tokyo Metropolitan University, Japan.

★P004 Dynamic mechanical analysis of HDPE films swollen by liquid paraffin

Axae Ito, Kaori Hioki, Koichi Kono, Yusuke Hiejima, and Koh-hei Nitta*

Faculty of Frontier Engineering, Institute of Science and Engineering, Kanazawa University, Japan.

★P005 Extra Electronic Pulling Effect in Propylene/High α -Olefin Copolymerization with Ziegler-Natta Catalysts

Zhijian Zhang, Jin-Yong Dong*

CAS Key Laboratory of Engineering Plastics, Institute of Chemistry, CAS, China.

★P006 New Synthesis of Long Chain-Branched Polypropylene Based on Ziegler-Natta Catalysts

Kang Li, Hangsheng Zhou, Yawei Qin, Ying Zhao*, Dujin Wang, Jin-Yong Dong*

CAS Key Laboratory of Engineering Plastics, Institute of Chemistry, CAS, China.

★P007 Synthesis of Long Chain-branched Polyethylene Based on Ziegler-Natta Catalyst and α -Alkenyl Methylchlorosilane

Xiuming Liu, Jin-Yong Dong*

CAS Key Laboratory of Engineering Plastics, Institute of Chemistry, CAS, China.

★P008 Weakly Entangled UHMWPE of In-Situ Self-Reinforced UHMWPE/HDPE Blends Synthesized by POSS Modified ZN Catalysts

Yuming Chen^a, Wei Li^{b*}, Binbo Jiang^a, Jingdai Wang^a, and Yongrong Yang^{a*}

^aZhejiang Provincial Key Laboratory of Advanced Chemical Engineering Manufacture Technology,

College of Chemical and Biological Engineering, Zhejiang University, China. ^bNingbo Key Laboratory of Specialty Polymers, School of Material Science and Chemical Engineering, Ningbo University, China.

P009 Preparation of Long-Chain Branched Polyolefins by Coordinative Chain Transfer Polymerization

Sung Moon Bae, Bun Yeoul Lee*

Department of Molecular Science and Technology, Ajou University, Korea.

P010 Peroxide-Mediated Alkyl-Alkyl Coupling of Dialkylzinc: A Useful Tool for Production of ABA-Type Olefin Triblock Copolymers

Jongchul Lee, Bunyeoul Lee*

Department of Molecular Science and Technology, Ajou University, Korea.

P011 Preparation of Half- and Post-metallocene Hafnium Complexes for Olefin Polymerization

Yeong Hyun Seo, Bun Yeoul Lee*

Department of Molecular Science and Technology, Ajou University, Korea.

P012 Nonconjugated α,ω -Diolefin-Prompted Long Chain-Branching/In Situ-Crosslinking of Polyolefin with Ziegler-Natta Catalyst: Effect of Half-Reacted Diolefin Residual

Yang Liu and Jin-Yong Dong*

CAS Key Laboratory of Engineering Plastics, Institute of Chemistry, CAS, China.

P013 Methylaluminoxane-Free Extremely Active Ethylene Tetramerization Catalyst

Dong Geun Lee and Bun Yeoul Lee*

Department of Molecular Science and Technology, Ajou University, Korea.

P014 Stereoselective Polymerization of Isoprene with Group 4 *ansa*-Indenylamidodimethyl Complexes

Kei Nishii^{a*}, Richard Baillula^b, Akito Nakamura^a, Ryota Sato^a, Tomoyuki Toda^c, Shun Ohta^d

^aDepartment of Materials Chemistry and Bioengineering, National Institute of Technology, Oyama College, Japan. ^bI.U.T De Béthune, France. ^cNagaoka University of Technology, Japan. ^dHirosaki University, Japan.

P015 Local melting and recrystallization in high density polyethylene under heat treatments

Misato Nabata, Yusuke Hiejima and Koh-hei Nitta*

^aDepartment of Chemical Materials Engineering, Graduate School of Natural Science and Technology, Kanazawa University, Japan.

★P016 The Weakly Entangled UHMWPE is Synthesized in a 10.0 L Autoclave Reactor

Zhen Yue, Yuming Chen, and Wei Li*

Ningbo Key Laboratory of Specialty Polymers, School of Material Science and Chemical Engineering, Ningbo University, China.

P017 Why Vanadium-Based Catalysts Exhibit a Preference for Chlorine Containing Al-alkyl in Ethylene Polymerization? A Comparative Theoretical Investigation on VO_x/SiO₂/TEA and VO_x/SiO₂/DEAC

Deng Shiheng, Jin Yulong, Liu Boping*

College of Materials and Energy, South China Agricultural University, China.

★P018 Influences of Molecular Weight Distribution on Morphology and Mechanical Properties of Polyethylene Solids

Takumitsu Kida^{a*}, Ryo Tanaka^a, Yusuke Hiejima^b, Koh-hei Nitta^b, and Takeshi Shiono^a

^a*Department of Applied Chemistry, Graduate School of Engineering, Hiroshima University, Japan.*

^b*Department of Chemical and Materials Science, Kanazawa University, Japan.*

P019 Supported late transition metal catalysts for the synthesis of bimodal polyethylene with enhanced properties

Mei Chen^a, Wei Li^b, Binbo Jiang^a, Jingdai Wang^a, Yongrong Yang^{a*}

^a*State Key Laboratory of Chemical Engineering, Department of Chemical and Biochemical Engineering, Zhejiang University, China.* ^b*Department of Polymer Engineering and Science, School of Material Science and Chemical Engineering, Ningbo University, China.*

P020 Comparative Theoretical Study on the Distinct Catalytic Behaviors of CrO_x/SiO₂ and VO_x/SiO₂ for ethylene polymerization

Shiyang Wang, and Boping Liu*

College of Materials and Energy, South China Agricultural University, China.

P021 Achieving polyethylene elastomers through ethylene polymerization by using modified α-diiminonickel(II) catalyst

Arumugam Vignesh, Qiuyue Zhang, Yanping Ma, Wen-Hua Sun*

Beijing National Laboratory for Molecular Sciences, Institute of Chemistry, CAS, China.

★P022 Finely Tuning Fe/Co Precatalysts incorporating *ortho*-Cycloalkylanilines Promoting Ethylene Polymerization

Hongyi Suo^a, Ivan I. Oleynik^b, Irina V. Oleynik^b, Yanping Ma^a, and Wen-Hua Sun^{a*}

^a*Key Laboratory of Engineering Plastics, Institute of Chemistry, CAS, China.* ^b*N.N. Vorozhtsov Novosibirsk Institute of Organic Chemistry, Russia.*

★P023 Enhancing thermo-stability of Ni/Co precatalysts through remote fluorosubstituted benzhydryl groups

Qiuyue Zhang, Randi Zhang, Yanping Ma, Hongyi Suo, Wen-Hua Sun*

Beijing National Laboratory for Molecular Sciences, Institute of Chemistry, CAS, China.

P024 Easily Prepared Sustainable Poly(lactide-co-carbonate): Monomer Sequence and Hydrolysis Behavior

Xiufang Hua, Xinli Liu, Dongmei Cui*

State Key Laboratory of Polymer Physics and Chemistry, Changchun Institute of Applied Chemistry, CAS, China.

P025 Highly Syndiospecific and *cis*-1,4-Selective Copolymerization of Fluorostyrene and Butadiene: A Novel Type of Fluororubber

Yuanhao Zhong, Dongmei Cui*

State Key Laboratory of Polymer Physics and Chemistry, Changchun Institute of Applied Chemistry, CAS, China.

P026 Highly Syndioselective Coordination (co)polymerization of *ortho*-Fluorostyrene

Tiantian Wang and Dongmei Cui*

State Key Laboratory of Polymer Physics and Chemistry, Changchun Institute of Applied Chemistry, CAS, China.

P027 Syndiospecific polymerization of a BN aromatic vinyl monomer using rare-earth metal based catalysts

Jianming Huang, Shihui Li, Dongmei Cui*

State Key Laboratory of Polymer Physics and Chemistry, Changchun Institute of Applied Chemistry, CAS, China.

P028 Structural Change in β -form Polypropylene during Elongation

Hideo Kurihara^{a*}, Shinichi Kitade^a, Kazuyuki Ichino^b, Isamu Akiba^c, Kazuo Sakurai^c

^aJapan Polychem Corporation, Japan. ^bJapan Polypropylene Corporation, Japan. ^cFaculty of Environmental Engineering, The University of Kitakyushu.

★P029 A Novel SiO₂-supported Chromate and Chromocene Bimetallic Catalyst Producing Bimodal UHMWPE/HDPE

Kai Wang^a, Xuelian He^{a*}, Zhen Liu^a, Ruihua Cheng^a, Boping Liu^{b*}

^aSchool of Chemical Engineering, East China University of Science and Technology, China. ^bCollege of Materials and Energy, South China Agricultural University, China.

★P030 Theoretical Study on the Role of Point Defects in Heterogeneous Ziegler-Natta Catalyst

Xing Guo^a, Zhen Liu^{a*}, Boping Liu^b

^aSchool of Chemical Engineering, East China University of Science and Technology, China. ^bCollege of Materials and Energy, South China Agricultural University, China.

★P031 Mechanistic Study on the Effects of Co-catalyst on Ethylene Polymerization over Supported Vanadocene Catalyst

Kaimin Liu^a, Zhen Liu^{a*}, Ruihua Cheng^a, Xuelian He^a, Boping Liu^{b*}

^aSchool of Chemical Engineering, East China University of Science and Technology, China. ^bCollege of Materials and Energy, South China Agricultural University, China.

★P032 Modeling and Simulation of Fluidized Bed Reactor by Coupling Polymerization Kinetics and Computational Fluid Dynamics

Min Cai^a, Zhou Tian^{a*} and Boping Liu^{b*}

^aSchool of Chemical Engineering, East China University of Science and Technology, China. ^bCollege of Materials and Energy, South China Agricultural University, China.

★P033 What Triggered the Switching from Ethylene Selective Trimerization into Tetramerization over the Cr/(2,2'-dipicolylamine) Catalysts?

Lin Liu^a, Zhen Liu^{a*}, Siyang Tang^b, Ruihua Cheng^a, Xuelian He^a, Boping Liu^{c*}

^aSchool of Chemical Engineering, East China University of Science and Technology, China. ^bSchool of Chemical Engineering, Sichuan University, China. ^cCollege of Materials and Energy, South China Agricultural University, China.

P034 Additive Stimulates Chain Transfer to Solvent in Coordination Polymerization

Zhaohe Liu, Changguang Yao, Dongmei Cui*

State Key Laboratory of Polymer Physics and Chemistry, Changchun Institute of Applied Chemistry, CAS, China.

P035 Effect of corona discharge treatment on the surface properties of high strength and high modulus UHMWPE woven fiber cloth

Jiayu Zhang, Yufang Zhang*

Beijing Institute of Fashion Technology, China.

★P036 Efficient synthesis of novel polyethylene graft copolymers containing polyfluorosiloxane side chains

Baozheng Tian, Hong Fan^{a*}, Bogeng Li

State Key Laboratory of Chemical Engineering, College of Chemical and Biological Engineering, Zhejiang University, China.

★P037 High-performance isotactic poly(1-butene)/isotactic polypropylene alloys with in-situ synthesized poly(propylene-co-butene)

Huarong Nie, Weijia Xiao, Yaping Ma, **Chenguang Liu***, Aihua He*

School of Polymer Science and Engineering, Qingdao University of Science and Technology, China.

★P038 Highly linear polyethylenes achieved using thermo-stable and efficient cobalt precatalysts bearing carbocyclic-fused NNN-pincer ligand

Jingjing Guo^{a,b}, Liwei Guo^{a,b}, Wenjuan Zhang^{a*}, Wen-Hua Sun^{b*}

^aBeijing Key Laboratory of Clothing Materials R&D and Assessment, Beijing Institute of Fashion Technology, China. ^bKey Laboratory of Engineering Plastics, Institute of Chemistry, CAS, China.

★P039 Synthesis of potassium amidates and their catalytic behavior for ROP of cyclic esters

Jiahao Gao^{a,b}, Dongzhi Zhu^{a,b}, Wenjuan Zhang^{a*}, Wen-Hua Sun^{b*}

^aBeijing Key Laboratory of Clothing Materials R&D and Assessment, Beijing Institute of Fashion Technology, China. ^bKey Laboratory of Engineering Plastics, Institute of Chemistry, CAS, China.

P040 Unveiling the Role of Sulfation in Promoting VO_x/SiO₂-MO_y (M=Al, Ti and Zr) for Ethylene Polymerization: A DFT Study

Yulong Jin and Boping Liu*

College of Materials and Energy, South China Agricultural University, China.

★P041 Automated analysis of the amorphous and crystalline fractions in PP resins by a modified TREF technique

Alberto Ortín, Pilar del Hierro, Juan Sancho-Tello, Benjamín Monrabal*

Polymer Char, Spain.

P042 Fully Automated Intrinsic Viscosity Measurement in Polyolefin

Pilar del Hierro*, **Alberto Ortín**, Juan Sancho-Tello, Benjamín Monrabal

Polymer Char, Spain.

★P043 Characterizing the Surface Property of Silica-Supported Ziegler–Natta Catalysts via Surface Spectroscopic Method

Peng Liang^a, Jingdai Wang^{a*}, Yongrong Yang^a, Binbo Jiang^a, Wei Li^{b*}

^aCollege of Chemical and Biological Engineering, Zhejiang University, China. ^bSchool of Material Science and Chemical Engineering, Ningbo University, China.

P044 Temperature rising elution fractionation and fraction compositional analysis of polybutene-1/ polypropylene in-reactor alloys

Weiping Zheng, Chenguang Liu, Aihua He*

Key Laboratory of Rubber-Plastics (Ministry of Education), School of Polymer Science and Engineering, Qingdao University of Science and Technology, China.

P045 Differential Polymorphic Transformation Behavior of Polybutene-1 with Multiple Isotactic Sequences

Yaping Ma, Chenguang Liu, Aihua He*

Key Laboratory of Rubber-Plastics (Ministry of Education), School of Polymer Science and Engineering, Qingdao University of Science and Technology, China.

★P046 Flow-induced Crystallization of Butene-1/1,5-Hexadiene Copolymers

Long Liu, Zhe Ma*, Yuesheng Li

Tianjin Key Laboratory of Composite and Functional Materials, School of Materials Science and Engineering, Tianjin University, China.

★P047 Interplay between Macroscopic Deformation and Microscopic Phase Transition in Butene-1/1,5-Hexadiene Random Copolymers

Wei Li, Zhe Ma*, Yuesheng Li

Tianjin Key Laboratory of Composite and Functional Materials, School of Materials Science and Engineering, Tianjin University, China.

★P048 Crystallization Polymorphism of Butene/Pentene Copolymers

Yahui Lou, Zhe Ma*, Yuesheng Li

Tianjin Key Laboratory of Composite and Functional Materials, School of Materials Science and Engineering, Tianjin University, China.

P049 Advanced Solution of Additives Package for Polypropylene in Recycling

Akitomo Sato, Naoko Tanji, Naoshi Kawamoto*

ADEKA Corporation, Japan.

P050 Creating High-value added Glass fiber reinforced Polypropylene via Polymer additives technology

Takuya Fukuda, Akitomo Sato, Naoshi Kawamoto*

ADEKA Corporation, Japan.

P051 Ethylene oligomerization to produce branched oligomer using iminopyridine Ni(II) complex immobilized in clay mineral interlayer

Shingo Haruta, **Hideki Kurokawa***, Miru Hirahara, Hitoshi Ogihara
Graduate School of Science & Engineering, Saitama University, Japan.

★P052 Bulky [P,O] Neutral Nickel Catalysts for Cyclocopolymerization of Allyl Acrylate and Ethylene

Fei Wang, Yanping Zhang, Li Pan, Yuesheng Li*
Tianjin Key Laboratory of Composite and Functional Materials, School of Materials Science and Engineering, Tianjin University, China.

P053 Preparation of comb-like *i*PP-*g*-PE copolymers via Tandem Polymerization: Synthesis, Characterization and its application for compatibilizing immiscible Polyethylene and Isotactic Polypropylene

Fei Yang, Li Pan*, Ma Zhe*, Yuesheng Li
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★P054 Norbornene Derivative Copolymer with Large Steric Hindrance Substituents for Anion Exchange Membrane Fuel Cells

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★P055 [P,O] Nickel Catalysts for Efficient Copolymerization of Ethylene with 1,1-Disubstituted Polar Ethylene

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P056 Cancelled

★P057 Heterogeneous Nickel Catalyzed Ethylene Homo- and Copolymerization with Polar Monomers

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★P058 Synthesis of Norbornene-based Optically Transparent Functional POEs with Excellent Mechanical and Thermal Properties

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P059 Polymerization of non-conjugated dienes with Constrained Geometry Catalysts

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★P060 New process for the recycling of waste PET by employing deep eutectic solvent catalysts

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★P061 Synthesis and Properties of Gradient Copolymers Composed of Norbornene and Higher α -olefins Using *ansa*-Fluorenylamidodimethyltitanium/ $\text{Ph}_3\text{CB}(\text{C}_6\text{F}_5)_4$ Catalyst System

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★P062 Synthesis and properties of polynorbornene-*graft*-polyethylene

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★P063 Copolymerization of propylene and alkenyl alcohol by syndiospecific living polymerization catalyst

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