

WELCOME MESSAGE

On behalf of the organization committee, we are very pleased to invite you to The 4th Hangzhou International Polymer Forum to be held in Zhejiang University, Hangzhou, China from May 22-25, 2017. The meeting topic will cover Polymer product engineering, Modelling and simulation of polymerization processes, Industrial data mining and process analyses, High performance thermoplastic elastomers, Sustainable polymers and green polymerization processes, Smart polymers and their applications.

The forum, together with Polymer Reaction Engineering at North America and International workshop on Polymer Reaction Engineering at Hamburg University, Germany, has become one of well known series meetings in the world on polymer reaction engineering. The forum is devoted to exchange the new ideas and views on many important issues in polymer reaction engineering among academic scientist and industry practitioner.

Hangzhou is located at 200 km south to Shanghai. The region is the most developed area in China. Hangzhou is a famous touring city with 2000-year historical heritage and natural beauty. You will definitely have unforgettable memory here.

We look forward to meeting you in Hangzhou in May, 2017.

Chairs of the forum:



A handwritten signature in black ink, appearing to be 'BGL'.

Prof. Bo-Geng Li



A handwritten signature in black ink, appearing to be 'Shiping Zhu'.

Prof. Shiping Zhu

CONTENTS

Committees / Organisation	III
General Information	IV
Program at a Glance	VII
Scientific Program	IX
Monday, 22 May 2017	IX
Tuesday, 23 May 2017	IX
Wednesday, 24 May 2017	XII
Thursday, 25 May 2017	XIII
Poster Presentation	XVII
Lecture Abstracts	1
Poster Abstracts	49
Author Index	133

COMMITTEES / ORGANISATION

Chairmen

Prof. Bo-Geng Li	Zhejiang University, China
Prof. Shiping Zhu	McMaster University, Canada

Advisory Committee

Prof. Jiacong Shen	Zhejiang University, China
Prof. Zhiquan Shen	Zhejiang University, China

Local Organising Committee

Prof. Yingwu Luo	Zhejiang University, China
Prof. Wen-Jun Wang	Zhejiang University, China
Mr. Zhi-Yang Bu	Zhejiang University, China
Dr. He Zhu	Zhejiang University, China

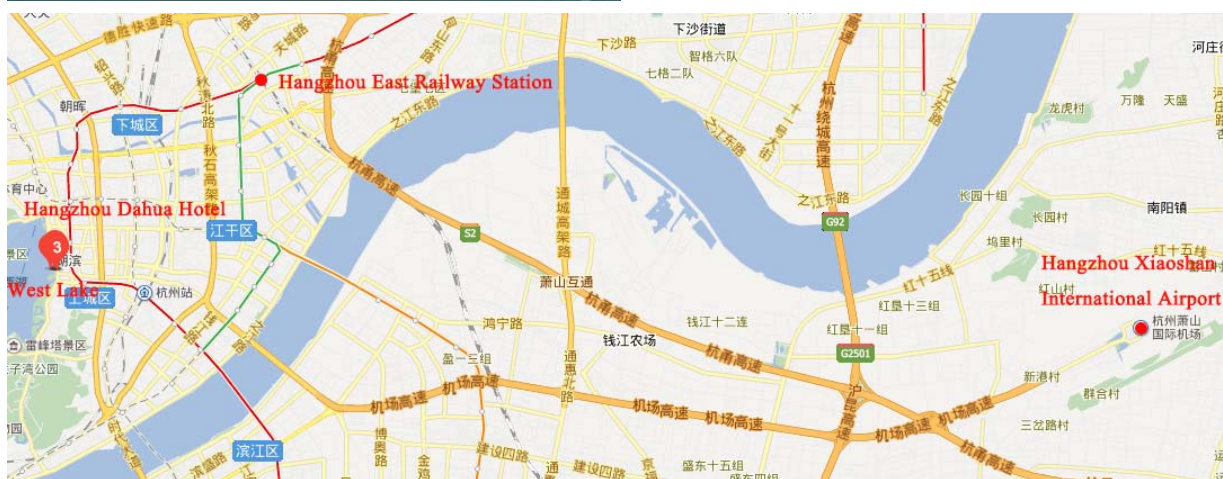
Scientific Committee

Prof. Kyu-Yong Choi	University of Maryland, USA
Prof. Michael F. Cunningham	Queen's University, Canada
Prof. Bo-Geng Li	Zhejiang University, China
Prof. Yingwu Luo	Zhejiang University, China
Prof. Zhenghong Luo	Shanghai Jiao Tong University, China
Prof. Werner Pauer	University Hamburg, Germany
Dr. Enrique Saldivar-Guera	Ciqa-Center for Research on Applied Chemistry, Mexico
Prof. Giuseppe Storti	ETH Zurich, Switzerland
Prof. Hidetaka Tobita	University of Fukui, Japan
Prof. Yi-Xian Wu	Beijing University of Chemical Technology, China
Prof. Ling Zhao	East China University of Science and Technology, China
Prof. Shiping Zhu	McMaster University, Canada

GENERAL INFORMATION

Conference Venue

Hangzhou International Polymer Forum 2017 (HIPF'2017) will be held at **Hangzhou Dahua Hotel** (171 Nanshan Road, Hangzhou, China). The Hangzhou Dahua Hotel is located in the city center by the beautiful West Lake, only 7 km from Hangzhou East Railway Station and 26 km from Hangzhou Xiaoshan International Airport.



Language

The official language for the Conference is English. All papers and presentations should be prepared in English.

Major Topics

- A. Polymer product engineering
- B. Modelling and simulation of polymerization processes
- C. Industrial data mining and process analyses
- D. High performance thermoplastic elastomers
- E. Sustainable polymers and green polymerization processes
- F. Smart and highly functional polymer systems and their applications

Oral Presentation

Presenting time

Plenary Lectures 35min(30 min talk + 5 min questions)

Invited Lectures 25min(20 min talk + 5 min questions)

Please do not overrun your allotted time. The receptionist at the Meeting Hall will remind each speaker at 1 minute before the allocated time.

Place

Plenary lectures will be presented in Lakeview conference hall (湖景会议厅) of Dahua Hotel. The other meeting room is Obo hall (鸥波厅)。Please see the conference schedule for room assignments.

Facilities for conference

All meeting room will be equipped with an LCD Projector with a notebook PC for presentation. The computer will be installed with Microsoft PowerPoint/Word 2010 and Adobe Acrobat X, and Windows 7 operating system. Laser pointer and microphone will be provided.

Poster Presentation

Two-minute poster introduction is scheduled for all authors from 9:40 a.m. to 12:00 a.m. on Wednesday, May 24. Each is going to make a two-minute speech without question. The place is Lakeview conference hall (湖景会议厅).

Posters session is scheduled from 1:00 p.m. to 3:00 p.m. on Wednesday, May 24. The place is Lakeview conference hall (湖景会议厅) too. Poster can be presented in free format. Each poster will be assigned to one board with 0.9 meters wide and 1.2 meters high. Posters should be brought to the conference and attached to the boards with the corresponding number by the authors before 12:00 a.m., and will be taken away by the staff at 6:00 p.m. on that day.

Five posters will be voted as “SABIC Excellent Poster Presentation Prize”. Each will received a bonus of RMB2000.

Meals

All participants who have registered will receive Vouchers for lunch and buffet dinner on May 22-25. The dining place is on Ming Hu Yuan Restaurant (明湖苑餐厅). Each Voucher for the conference meal is valid only for the lunch or the dinner as indicated. No refund for unused tickets.

Welcome Reception

All participants will be invited to the welcome reception from 6 p.m. to 9 p.m. on Monday, May 22, on Ming Hu Yuan Restaurant (明湖苑餐厅). Delicious food will be offered. Please

enjoy yourself while meeting your international colleagues and making some new friends in the congenial atmosphere.

Banquet

The banquet will be arranged at “ZTG Lakeview Hotel (杭州望湖宾馆)” (No. 2 Huancheng West Road, Xiacheng District, Hangzhou) at 18:30 on Wednesday, May 24.

Coffee Breaks

Coffee, tea, and refreshments will be served for all participants.

Currency and Banking

The official name for the currency of China is the Renminbi (RMB). It is denominated into the Yuan. Foreign currency can be exchanged for RMB at airports, banks and hotels. Major credit cards are accepted at most hotels. Banks usually open at 9:00 am and close at 5:00 pm weekdays and weekends.



Electricity

Electricity is supplied at 220V, 50Hz AC throughout China. Major hotels usually provide 115V outlets as well for razor. It is recommended to have a suitable plug-in for China standard when charging your laptop.

Liability

The conference secretariat and organizers cannot accept liability for personal accidents, loss of or damage to private property of participants, students and accompanying persons, either during, or directly arising from the HIPF2017. Participants should make their own arrangements with respect to health and travel insurance.

Internet Access

W-LAN access throughout the conference venue is available and free of charge.

Name Badges

All Participants are kindly requested to wear their name badges throughout the conference. In case you lost your badges, a new one will be available at the conference office.

Climate

May in Hangzhou is the most beautiful time of the year, brilliant and pleasant. The temperature in May is usually in the range of 20°C (midnight) to 30°C (noon).

PROGRAM AT A GLANCE

May 22(Mon)	May 23(Tue)		May 24(Wed)		May 25(Thu)					
Lobby of Dahua Hotel	Lakeview conference hall		Lakeview conference hall	Oubo hall	Lakeview conference hall	Oubo hall				
Registration 9:00-21:00			Invited Lecture A9 Costas Kiparissides 8:30-8:55	Invited Lecture B7 Qiang Fu 8:30-8:55	Invited Lecture A11 Guangsheng Luo 8:30-8:55	Invited Lecture B9 Hongzheng Chen 8:30-8:55				
		Opening Ceremony 9:00-9:10	Invited Lecture A10 Werner Pauer 8:55-9:20	Invited Lecture B8 Pei Li 8:55-9:20	Invited Lecture A12 Juraj Kosek 8:55-9:20	Invited Lecture B10 Zhibin Ye 8:55-9:20				
		Plenary Lecture 1 Walter Kaminsky 9:10-9:45	Tea Break 9:20-9:40		Invited Lecture A13 Enrique Saldivar-Guerra 9:20-9:45	Oral Presentation B4 Hao Bai 9:20-9:45				
		Plenary Lecture 2 Yong Tang 9:45-10:20	Poster introduction by the authors (Lakeview conference hall) 9:40-12:00				Oral Presentation A2 Xiang Gao 9:45-10:10	Oral Presentation B5 Erlita Mastan 9:45-10:10		
		Group Photo & Tea Break 10:20-10:50					Tea Break 10:10-10:30		Invited Lecture A14 Yi-xian Wu 10:30-10:55	Invited Lecture B11 Jan Genzer 10:30-10:55
		Plenary Lecture 3 Xi Zhang 10:50-11:25					Invited Lecture A15 Robin A. Hutchinson 10:55-11:20	Invited Lecture B12 Tao Xie 10:55-11:20	Oral Presentation A3 Zhenhao Xi 11:20-11:45	Oral Presentation B6 Markus Busch 11:20-11:45
		Plenary Lecture 4 Michael F. Cunningham 11:25-12:00								
		Lunch Time 12:00-13:00								
		Lakeview conference hall	Oubo hall	Lakeview conference hall		Lakeview conference hall				

			Poster Presentation (Lakeview conference hall) 13:00-15:00	Invited Lecture S1 Wolfgang Gerlinger 13:30-13:55
	Invited Lecture A1 Kim B. McAuley 14:00-14:25	Invited Lecture B1 Giuseppe Storti 14:00-14:25		Invited Lecture S2 Jinliang Qiao 13:55-14:20
	Invited Lecture A2 Zhiqiang Fan 14:25-14:50	Invited Lecture B2 Zhi-Kang Xu 14:25-14:50		Invited Lecture S3 Marco Villalobos 14:20-14:45
	Invited Lecture A3 Kyu Yong Choi 14:50-15:15	Invited Lecture B3 Yesong Gu 14:50-15:15		Invited Lecture S4 Tong Sun 14:45-15:10
	Invited Lecture A4 Boping Liu 15:15-15:40	Oral Presentation B1 Yingfeng Tu 15:15-15:40		Invited Lecture S5 Shixuan Xin 15:10-15:35
	Tea Break 15:40-16:00			Invited Lecture S6 Nanjian Sun 15:35-16:00
	Invited Lecture A5 João B. P. Soares 16:00-16:25	Invited Lecture B4 Ling Zhao 16:00-16:25		Tea Break 16:00-16:20
	Invited Lecture A6 Zheng-Hong Luo 16:25-16:50	Invited Lecture B5 Beng S. Ong 16:25-16:50	Sightseeing to Westlake 15:00-18:00	Plenary Lecture 5 Hidetaka Tobita 16:20-16:55
	Invited Lecture A7 Piet D. Iedema 16:50-17:15	Invited Lecture B6 Qinmin Pan 16:50-17:15		Plenary Lecture 6 Bo-Geng Li 16:55-17:30
	Invited Lecture A8 Timothy F. McKenna 17:15-17:40	Oral Presentation B2 Qian Zhao 17:15-17:40		Awarding Ceremony & Closing Remarks 17:30-17:50
	Oral Presentation A1 Wei Li 17:40-18:05	Oral Presentation B3 Qiang Ren 17:40-18:05		
Welcome Reception 18:00-21:00	Dinner Time 18:05-19:00	Banquet & Entertainment 18:00-20:00	Dinner Time 18:00-19:00	

SCIENTIFIC PROGRAM

May 22, 2017, Monday

8:00-21:00	Registration
18:00-21:00	Reception

May 23, 2017, Tuesday

	Plenary Session I Chair - Shiping Zhu (McMaster) Lakeview conference hall (湖景会议厅)
9:00-9:10	Opening Remark & Welcome
9:10-9:45	Plenary Lecture 1 Development and future trend of metallocene based polyolefin and elastomers Walter Kaminsky University of Hamburg
9:45-10:20	Plenary Lecture 2 Sidarm approach to catalysts for olefin polymerization: controllable synthesis of polyethylene and applications Yong Tang Shanghai Institute of Organic Chemistry, CAS

10:20-10:50	Photo & Tea Break	
	Chair - João B. P. Soares (Alberta) Lakeview conference hall (湖景会议厅)	
10:50-11:25	Plenary Lecture 3 Controllable supramolecular polymerization Xi Zhang Tsinghua university	
11:25-12:00	Plenary Lecture 4 Carbon dioxide switchable technology in polymer reaction engineering Michael F. Cunningham Queen's University	
12:00-13:00	Buffet Lunch	
	Chair - Michael F. Cunningham (Queen's) Lakeview conference hall (湖景会议厅)	Chair – Pei Li (PolyU) Obo hall (鸥波厅)
14:00-14:25	Invited Lecture A1 Selecting parameters to estimate in polymerization mode Kim B. McAuley Queen's University	Invited Lecture B1 Polymers from renewables-based cyclic monomers via ring-opening polymerization Giuseppe Storti ETH Zurich
14:25-14:50	Invited Lecture A2 Correlations between kinetics and polymer particle morphology in ethylene polymerization with supported Ziegler-Natta Catalyst Zhiqiang Fan Zhejiang University	Invited Lecture B2 Polymeric membranes with vertical pores Zhi-Kang Xu Zhejiang University

14:50-15:15	<p align="center">Invited Lecture A3 Polymer reaction engineering principles for the synthesis of polymer particles of complex morphologies Kyu Yong Choi University of Maryland, College Park</p>	<p align="center">Invited Lecture B3 Process for the enzymatic synthesis of conductive poly(3,4-ethylenedioxythiophene) Yesong Gu Tunghai University</p>
15:15-15:40	<p align="center">Invited Lecture A4 Development of novel value-added polyethylene products through innovation of traditional Ziegler-Natta and Phillips type catalysts Boping Liu East China University of Science and Technology</p>	<p align="center">Oral Presentation B1 PROP: An in situ cascade polymerization method for the facile synthesis of polyesters and poly(ether ester) elastomers Yingfeng Tu Soochow University</p>
15:40-16:00	Tea Break	
	<p align="center">Chair – Boping Liu (ECUST) Lakeview conference hall (湖景会议厅)</p>	<p align="center">Chair –Giuseppe Storti (ETH Zurich) Obo hall (鸥波厅)</p>
16:00-16:25	<p align="center">Invited Lecture A5 Modelling polyolefin particle size evolution in reactor series using a Monte Carlo model João B. P. Soares University of Alberta</p>	<p align="center">Invited Lecture B4 Preparation of microcellular rigid polyurethane by proper coupling polymerization reaction with foaming process in supercritical CO₂ Ling Zhao East China University of Science and Technology</p>
16:25-16:50	<p align="center">Invited Lecture A6 Kinetic insights into electrochemically mediated atom transfer radical polymerization: from modeling to experiments Zheng-Hong Luo Shanghai Jiao Tong University</p>	<p align="center">Invited Lecture B5 Progress in semiconducting polymers and processes for organic field-effect transistors Beng S. Ong Hong Kong Baptist University</p>
16:50-17:15	<p align="center">Invited Lecture A7 Modeling of polymer networks for art and industry</p>	<p align="center">Invited Lecture B6 Superhydrophobic and superoleophilic modified</p>

	Piet D. Iedema University of Amsterdam	pristine foam and its application as effective sorbents for oil spill clean-ups and recovery Qinmin Pan Soochow University
17:15-17:40	Invited Lecture A8 Impact of induced condensing agents (ica) on gas phase ethylenepolymerisation Timothy F.L. McKenna University of Lyon	Oral Presentation B2 Controlling three dimensional ice template via two dimensional surface wetting Qian Zhao Zhejiang University
17:40-18:05	Oral Presentation A1 A simple method to prepare weakly entangled polyethylene by a super highly active Ziegler-Natta catalyst at a high temperature Wei Li Ningbo University	Oral Presentation B3 Graphene/star polymer nanocoating Qiang Ren Changzhou University
18:05-19:00	Buffet Dinner	

May 24, 2017, Wednesday

	Chair –Kyu Yong Choi (Maryland) Lakeview conference hall (湖景会议厅)	Chair – Qinmin Pan (Soochow Univ.) Obo hall (鸥波厅)
8:30-8:55	Invited Lecture A9 A comprehensive risk assessment analysis of ethylene decomposition in industrial LDPE autoclaves Costas Kiparissides Aristotle University of Thessaloniki	Invited Lecture B7 Toward high performance polymer articles via structuring processing Qiang Fu Sichuan University
8:55-9:20	Invited Lecture A10 Novel tools for continuous emulsion polymerization	Invited Lecture B8 Synthesis of dual stimuli-responsive amphiphilic

	<p>processes: 3D-printed reactionware Werner Pauer University of Hamburg</p>	<p>particles through controlled semi-batch emulsion polymerization Pei Li The Hong Kong Polytechnic University</p>
9:20-9:40	Tea Break	
9:40-12:00	<p>Poster introduction by the authors Chair - Yingwu Luo(ZJU) and Wen-Jun Wang(ZJU) Lakeview conference hall (湖景会议厅)</p>	
12:00-13:00	Buffet Lunch	
13:00-15:00	<p>Poster Presentation Chair - Yingwu Luo(ZJU) and Wen-Jun Wang(ZJU) Lakeview conference hall (湖景会议厅)</p>	
15:00-18:00	Sightseeing	
18:00-20:00	Banquet & Entertainment	

May 25, 2017, Thursday

	<p>Chair – Yi-xian Wu (BUCT) Lakeview conference hall (湖景会议厅)</p>	<p>Chair – Jan Genzer (NCSU) Obo hall (鸥波厅)</p>
8:30-8:55	<p>Invited Lecture A11 Controllable preparation of polymer materials in microreactors Guangsheng Luo Tsinghua university</p>	<p>Invited Lecture B9 Preparation of non-fullerene acceptors for highly efficient polymer solar cells Hongzheng Chen Zhejiang University</p>

8:55-9:20	<p align="center">Invited Lecture A12 Multi-scale framework applied to morphology evolution and properties of polyurethane foams Juraj Kosek University of Chemistry and Technology Prague</p>	<p align="center">Invited Lecture B10 Designing cross-linked acetylene polymers for catalysis and energy-storage applications Zhibin Ye Laurentian University</p>
9:20-9:45	<p align="center">Invited Lecture A13 Mathematical modeling of nitroxide mediated emulsion polymerization. comparison with experimental data Enrique Saldívar-Guerra Centro de Investigación en Química Aplicada</p>	<p align="center">Oral Presentation B4 Shaping ice for functional materials with biomimetic architectures Hao Bai Zhejiang University</p>
9:45-10:10	<p align="center">Oral Presentation A2 Controllable preparation of novel polymer materials via living radical polymerization Xiang Gao Zhejiang University</p>	<p align="center">Oral Presentation B5 Modeling of atom transfer radical polymerization Erlita Mastan McMaster University</p>
10:10-10:30	Tea Break	
	Chair –Juraj Kosek (UCT Prague) Lakeview conference hall (湖景会议厅)	Chair – Wen-Jun Wang (ZJU) Obo hall (鸥波厅)
10:30-10:55	<p align="center">Invited Lecture A14 Poly(styrene-b-isobutylene-b-styrene)-based anion exchange membrane for direct alkaline methanol fuel cell Yi-xian Wu Beijing University of Chemical Technology</p>	<p align="center">Invited Lecture B11 Formation of polymers from flat substrates using radical polymerizations and the properties of the grafted polymer arrays: Challenges & opportunities Jan Genzer North Carolina State University</p>
10:55-11:20	<p align="center">Invited Lecture A15 Measurement and modeling of of aqueous-phase radical copolymerization kinetics Robin A. Hutchinson</p>	<p align="center">Invited Lecture B12 Thermadappt shape memory polymer Tao Xie Zhejiang university</p>

	Queen's University	
11:20-11:45	Oral Presentation A3 Using a concept of compatibilizer-tracer to probe mixing and reaction performances of a twin screw extruder for blending processes Cailiang Zhang Zhejiang University	Oral Presentation B6 From modeling to analytics: Insight into polymeric micro-structure by hybrid techniques Markus Busch Technical University Darmstadt
12:10-13:00	Buffet Lunch	
	Special Topic for Industry Chair - Hidetaka Tobita (Fukui) (Lakeview conference hall (湖景会议厅))	
13:30-13:55	Invited Lecture S1 Digitalization in polymer research Wolfgang Gerlinger BASF SE, Ludwigshafen	
13:55-14:20	Invited Lecture S2 A new family of thermoplastic photoluminescence polymers Jinliang Qiao SINOPEC Beijing Research Institute of Chemical Industry	
14:20-14:45	Invited Lecture S3 Fundamental concepts in the design of high performance polymer nanocomposites Marco A. Villalobos Cabot China LTD	
14:45-15:10	Invited Lecture S4 High performance waterborne running tracks: its design, development, and application Tong Sun Dow Chemical (China) Investment Co. Ltd.	

15:10-15:35	<p align="center">Invited Lecture S5 Neutral nickel complexes catalyzed ethylene polymerization catalysts for olefin and polar monomer copolymerizations Shixuan Xin PetroChina Petrochemical Research Institute</p>
15:35-16:00	<p align="center">Invited Lecture S6 Development of functionalized engineering polymer for 3C industry application Nanjian Sun DuPont China R&D Center</p>
16:00-16:20	Tea Break
	<p>Plenary Session II Chair – Shiping Zhu (McMaster) Lakeview conference hall (湖景会议厅)</p>
16:20-16:55	<p align="center">Plenary Lecture 5 Fundamental aspects of the hyperbranched polymer formation Hidetaka Tobita University of Fukui</p>
16:55-17:30	<p align="center">Plenary Lecture 6 Progress of polymer reaction engineering research in zhejiang university Bo-Geng Li Zhejiang university</p>
17:30-17:50	Awarding Ceremony & Closing Remarks
18:00-19:00	Buffet Dinner

POSTER PRESENTATION

Poster introduction by the authors	Poster Presentation	
Wednesday, May 24, 9:40–12:00 Lakeview conference hall Chair - Yingwu Luo(ZJU) and Wen-Jun Wang(ZJU)	Wednesday, May 24, 13:00–15:00 Lakeview conference hall	
Polymer product engineering		
PA-01	Preparation and characterization of epoxy nanocomposites containing fluoro- modified graphene oxide	49
<u>E.E.husam</u> , Fan Hong Zhejiang University, China		
PA-02	Modeling the degradation of heat insulation properties of polyurethane foams at ambient and elevated temperatures	50
Pavel Ferkl, Andra Nistor, Martina Podivinska, Jiri Kolar, <u>Juraj Kosek</u> University of Chemistry and Technology Prague, Czech Republic		
PA-03	Facial preparation of snowman-like janus particles through seeded dispersion polymerization	51
<u>Chengjian Wang</u> , Qi Zhang, Jianli Wang Zhejiang University of Technology, China		
PA-04	Comprehensive spectroscopic studies on highly flexible redox initiator systems	52
<u>Baldur Schroeter</u> , Sven Bettermann, Thomas Hellwig, Werner Pauer and Hans-Ulrich Moritz University of Hamburg, Germany		
PA-05	Crystalline structure, phase transition and mechanical properties of poly(p-dioxanone)	53
<u>Ying Zheng</u> , Yongzhong Bao, Guorong Shan, Pengju Pan Zhejiang University, China		
PA-06	Synthesis of high molecular weight multiblock polymer via raft emulsion polymerization	54
<u>Jinwei Fang</u> , Yingwu Luo Zhejiang University, China		
PA-07	Synthesis of novel fluorosilicone macromonomer and its copolymerization with ethylene	55
<u>Baozheng Tian</u> , Hong Fan, Bo-Geng Li Zhejiang University, China		
PA-08	Polyhedral oligomeric silsesquioxane modified layered double hydroxide and its thermal properties	56
<u>Xianwei Zhang</u> , Hong Fan Zhejiang University, China		
PA-09	Synthesis and evaluation of double-decker silsesquioxanes as modifying agent for epoxy resin	57
<u>Jun Cao</u> ¹ , Hong Fan ¹ , Bo-Geng Li ¹ , Shiping Zhu ² ¹ Zhejiang University, China; ² McMaster University, Canada		

PA-10	Dispersion of minor PS-MAMA component in PS melt under two flow fields	58
	<u>Sibo Cheng</u> , Lianfang Feng, Cailiang Zhang Zhejiang University, China	
PA-11	Microcellular foaming of benzene-contained function group modified polypropylene	59
	<u>Cong Li</u> , Xueping Gu, Cailiang Zhang, Lianfang Feng Zhejiang University, China	
PA-12	Enhancement of stereocomplexation and control of mechanical property for poly(lactic acid) racemic mixture by copolymerization with glycolide	60
	<u>Chengtao Yu</u> , Guorong Shan, Yongzhong Bao, Pengju Pan Zhejiang University, China	
PA-13	Fractional Crystallization of Poly(L-lactic acid)/Poly(D-lactic acid) Blends Tailored by Selective Nucleating Agent	61
	<u>Qing Xie</u> , Guorong Shan, Yongzhong Bao, Pengju Pan Zhejiang University, China	
PA-14	Non-conjugated diene homopolymerization and copolymerization with ethylene catalyzed by α-diimine Ni(II) complex/$rt2AlCl$	62
	<u>Shao-Fei Song</u> , Zhi-Sheng Fu, Jun-Ting Xu, Zhi-Qiang Fan Zhejiang University, China	
PA-15	Multiple phase transitions in stereocomplexed hydrogels based on diblock and triblock poly(lactic acid)/poly(ethylene glycol) copolymers	63
	<u>Hailiang Mao</u> , Guorong Shan, Yongzhong Bao, Pengju Pan Zhejiang University, China	
PA-16	Ethylene polymerization with $TiCl_4/MgCl_2$ catalysts with different titanium content	64
	<u>Baiyu Jiang</u> , Yuhong Weng, Pengjia Yang, Zhisheng Fu, Zhiqiang Fan Zhejiang University, China	
PA-17	Polymorphic crystalline structure and phase transition of telechelic hydrogen-bonding poly(butylene adipate)	65
	<u>Jianna Bao</u> , Guorong Shan, Yongzhong Bao, Pengju Pan Zhejiang University, China	
PA-18	Kinetics of short-term ethylene-propylene copolymerization with $MgCl_2$-supported Ziegler-Natta catalyst	66
	<u>Akbar Khan</u> , Yintian Guo, Zhen Zhang, Zhisheng Fu, Zhiqiang Fan Zhejiang University, China	
PA-19	Preparation of a novel comb-branched block olefinic elastomer using a tandem catalyst system	67
	<u>Kailun Zhang</u> ¹ , Wen-Jun Wang ¹ , Bo-Geng Li, ¹ and Shiping Zhu ² ¹ Zhejiang University, China; ² McMaster University, Canada	
PA-20	Synthesis of multiblock PE/long chain α-olefin copolymer via chain walking polymerization using thermostable α-diimine nickel catalyst	
	<u>Zhen-Mei Cheng</u> ¹ , Yin-Tian Guo ¹ , Zhi-sheng Fu, Zhiqiang Fan Zhejiang University, China	
PA-21	Tailor-made Low-branched Polypropylene Prepared by a Highly Active and Robust α-Diimine Nickel Catalyst	
	<u>Feng He</u> , Zhisheng Fu, Zhiqiang Fan Zhejiang University, China	

Modelling and simulation of polymerization processes

PB-01	Applying multi-dimensional method of moments for modeling arborescent polyisobutylene production in batch reactor and CSTR	68
	<u>Yutian R. Zhao</u> ¹ , Bradley Buren ¹ , Daniel J. Arriola ² , Judit E. Puskas ³ , Kim B. McAuley ¹	
	¹ Queen's University, Kingston, Canada; ² The Dow Chemical Company, USA; ³ University of Akron, Akron, USA	
PB-02	The task of modeling long-chain branching in the LDPE Synthesis	69
	<u>Kristina M. Pflug</u> , Markus Busch	
	Technical University Darmstadt, Germany	
PB-03	Topological structure of acrylate networks created by a photopolymerization process modeled as a random graph	70
	<u>Verena Schamboeck</u> , Ivan Kryven, Piet Iedema	
	University of Amsterdam, Netherlands	
PB-04	Modeling of chemical reaction network for polymerization of triacylglycerides	71
	<u>Yuliia Orlova</u> , Ivan Kryven, Piet Iedema	
	University of Amsterdam, Netherlands	
PB-05	Mathematical modeling of Nylon 6/6,6 copolymerization: beneficial influence of comonomers on degree of polymerization in batch reactor	72
	<u>Fei F. Liu</u> ¹ , James M. Hurley ² , Neeraj P. Khare ² , Kim B. McAuley ¹	
	¹ Queen's University, Canada; ² AdvanSix Inc., USA	
PB-06	Possibilities of implementing hybrid Monte Carlo model of semi-batch emulsion copolymerization in model-based process control	73
	<u>Tomáš Chaloupka</u> , Alexandr Zubov, Juraj Kosek	
	University of Chemistry and Technology Prague, Czech Republic	
PB-07	Shear thinning in non-Brownian suspensions and its relation to the slip of solvent molecules on a particle surface	74
	Martin Kroupa, Miroslav Soos, <u>Juraj Kosek</u>	
	University of Chemistry and Technology Prague, Czech Republic	
PB-08	Exact and simple expression for molecular size/branching distribution resulting from step-growth polymerization of multifunctional monomers	75
	<u>Ivan Kryven</u>	
	University of Amsterdam, Netherlands	
PB-09	Simulation and optimization of Nylon 66 continuous polymerization process	76
	Cheng Lin, <u>Zhenhao Xi</u> , Ling Zhao	
	East China University of Science and Technology, China	
PB-10	Tailoring polymer molecular weight distribution and multimodality in RAFT polymerization using tube reactor with recycle	77
	<u>Liang Xiang</u> ¹ , Wen-Jun Wang ¹ , Bo-Geng Li ¹ , Shiping Zhu ²	
	¹ Zhejiang University, China; ² McMaster University, Canada	

PB-11	Kinetics and catalyst morphology of 1-hexene polymerization with supported Ziegler-Natta catalyst	78
	<u>Pengjia Yang</u> , <u>Zhisheng Fu</u> , <u>Zhiqiang Fan</u> Zhejiang University, China	
PB-12	Modeling and experimentation of raft solution copolymerization of styrene and butyl acrylate, effect of chain transfer reactions on polymer molecular weight distribution	79
	<u>Jie Jiang</u> , ¹ <u>Wen-Jun Wang</u> , ¹ <u>Bo-Geng Li</u> , ¹ and <u>Shiping Zhu</u> ² ¹ Zhejiang University, China; ² McMaster University, Canada	
PB-13	Monte Carlo simulation of aqueous precipitation polymerization of polyacrylonitrile with controllable sequential structure	80
	<u>Tong Qin</u> , <u>Ling Zhao</u> , <u>Zhenhao Xi</u> , <u>Weikang Yuan</u> East China University of Science and Technology, China	
PB-14	Hybrid characterization method of technical EVA-copolymers with GPC-IR-MALLS under high-temperature conditions	81
	<u>Markus Busch</u> , <u>Sascha Griebenow</u> , <u>Elisabeth Schulz</u> Technische Universität Darmstadt, Germany	
High performance thermoplastic elastomers		
PD-01	A new class of polyolefin-based thermoplastic elastomer with strikingly improved toughness from renewable lignin/POE composite	82
	<u>Jinhao Huang</u> , <u>Weifeng Liu</u> , <u>Xueqing Qiu</u> South China University of Technology, China	
PD-02	Ethylene (co)polymerization catalyzed by a bridged biscyclopentadienyl zirconocene catalyst at high temperature	84
	<u>Zheng Zheng</u> , <u>Weifeng Liu</u> , <u>Song Guo</u> , <u>Wenjun Wang</u> , <u>Luqiang Yu</u> , <u>Bo-Geng Li</u> Zhejiang University, China	
PD-03	Pickering emulsions stabilized by self-assembled colloidal particles of Polystyrene-b-polyisoprene-b-polystyrene triblock latex	85
	<u>Chunmiao Xia</u> , <u>Yingwu Luo</u> Zhejiang University, China	
PD-04	A new scalable-up approach to non-iridescent structural blue films with relatively high tensile properties via RAFT emulsion polymerization	86
	<u>Qing Xiang</u> , <u>Yingwu Luo</u> Zhejiang University, China	
PD-05	Diblock copolymer electrolyte as dry, highly transparent, and colorless electrodes for dielectric elastomer actuators	87
	<u>Peile Xie</u> , <u>Xuxu Yang</u> , <u>Tiefeng Li</u> , <u>Yingwu Luo</u> Zhejiang University, China	
PD-06	Improving the properties of PDMS/PA12 TPVs using compatibilizer-crosslinker	88
	<u>Di Wang</u> , <u>Lian-Fang Feng</u> , <u>Cai-Liang Zhang</u> Zhejiang University, China	

PD-07	Research on rheological properties of polyolefin elastomer solution	89
	<u>Gengen Zhao</u> , Zheng Zheng, Yulu Liu, Bo-Geng Li Zhejiang University, China	
PD-08	Highly Mechano-Responsive Comb-Branched Graft Thermoplastic Elastomers	90
	<u>Yanyu Jia</u> , ¹ Pingwei Liu, ¹ Wen-Jun Wang, ¹ Bo-Geng Li, ¹ and Shiping Zhu ² 1 Zhejiang University, China; 2 McMaster University, Canada	

Sustainable polymers and green polymerization processes

PE-01	Radical polymerization kinetics of bio-renewable butyrolactone monomers in aqueous solution	91
	<u>Sharmaine B. Luk</u> ¹ , Jozef Kollár ² , Igor Lacík ² , Jaroslav Mosnáček ² , and Robin A. Hutchinson ¹ ¹ Queen's University, Canada ; ² Polymer Institute of the Slovak Academy of Sciences, Slovakia	
PE-02	Coordination polymerization of myrcene and ocimene renewable resources terpenes to produce bio-based elastomers	92
	<u>Ramón Díaz de León</u> , Ricardo Mendoza, Ricardo López Centro de Investigación en Química Aplicada, México	
PE-03	Crystallization behavior and strain induced crystallization structure evolution of poly(butylene adipate-co-terephthalate)	93
	<u>Jian Zhou</u> , Guorong Shan, Yongzhong Bao, Pengju Pan Zhejiang University, China	
PE-04	High-performance biobased epoxy resin derived from eugenol	94
	<u>Jintao Wan</u> ¹ , Cheng Li ² , Zhi Li ¹ , and De-Yi Wang ¹ ¹ IMDEA Materials Institute, Spain; ² Zhejiang University, China	
PE-05	Synthesis of water soluble non-isocyanate polyurethane from bio-based material and its application	95
	<u>Zhongzhu Ma</u> , Hong Fan Zhejiang University, China	
PE-06	Dynamic cross-linkers to facilitate the reprocessability of thermoset poly(butyl methanol methacrylate) with excellent thermal and mechanical property	96
	<u>Kun-Hong Wu</u> ¹ , <u>Cai-Liang Zhang</u> ¹ , Lian-Fang Feng, ¹ Xue-Ping Gu ¹ , Shirley Shen ² ¹ Zhejiang University, China; ² CSIRO, Australia	

Smart and highly functional polymer systems and their applications

PF-01	Design of acrylic dispersants for non-aqueous dispersion polymerization: the importance of thermodynamics and the application of precise synthesis techniques	97
	<u>Mingmin Zhang</u> , Robin A. Hutchinson Queen's University, Canada	
PF-02	A novel PMOXA/PAA mixed brush with switchable properties toward on-line concentration of protein in capillary electrophoresis	98
	<u>Xiaoru Liu</u> , Chao Pan, Yanmei Wang	

	University of Science and Technology of China, China	
PF-03	Switchable antifouling performance of PMOXA/PAA based smart surfaces <u>Fatima Mumtaz</u> , Chaoshi Chen, Haikun Zhu, Chao Pan, Yanmei Wang University of Science and Technology of China, China	99
PF-04	Engineering of a UV responsive polymer/benzothienobenzothiophene blend-based organic thin film phototransistors <u>Darko Ljubic</u> ^{1,2} , Weifeng Liu ³ , Cristina Gonzales ¹ , Chad S. Smithson ² , Nan-Xing Hu ² , Yiliang Wu ¹ , Shiping Zhu ¹ ¹ McMaster University, Canada; ² Xerox Research Centre of Canada, Canada; ³ South China University of Technology, China	100
PF-05	Polymeric nanocomposites based on polypropylene/carbon nanoparticles: evaluation of the percolation threshold phenomenon by electrical and rheological properties C. A. Covarrubias-Gordillo, <u>F. Soriano-Corral</u> , C. A. Ávila-Orta ¹ , V. J. Cruz-Delgado, J. F. Hernández-Gómez, P. A. De León-Martínez, P. González-Morones Centro de Investigación en Química Aplicada, México;	101
PF-06	Assembly of a metal–organic framework into 3D hierarchical porous monoliths using a pickering high internal phase emulsion template <u>He Zhu</u> , ¹ Qi Zhang, ² and Shiping Zhu ¹ ¹ McMaster University, Canada; ² Zhejiang University of Technology, China	102
PF-07	Hierarchical regulation on the morphology of poly (ionic liquid) nanoparticles through polymerization-induced self-assembly <u>Milin Fu</u> , Qi Zhang, Jianli Wang Zhejiang University of Technol, China	103
PF-08	Micelle structure and thermoresponsive aggregation of poly(lactic acid-co-glycolide)/poly(ethylene glycol) amphiphilic block copolymer in dilute solution <u>Xiaohua Chang</u> , Hailiang Mao, Hongyu Yu, Guorong Shan, Yongzhong Bao, Pengju Pan Zhejiang University, China	104
PF-09	Amphiphilic copolymer-based physical hydrogels tuned by side-chain stereocomplex crystallization <u>Heqing Cao</u> , Guorong Shan, Yongzhong Bao, Pengju Pan Zhejiang University, China	105
PF-10	Tuning electromechanical performance of acrylic thermal plastic dielectric elastomer via alkyl side-chain engineering <u>Jie Mao</u> , Yingwu Luo Zhejiang University, China	106
PF-11	Exploring dynamic equilibrium of diels-alder reaction for solid state plasticity in remoldable shape memory polymer network <u>Guogao Zhang</u> , Qian Zhao, Tao Xie Zhejiang University, China	107
PF-12	Omnidirectional shape memory effect via lyophilization of PEG hydrogels <u>Di Chen</u> ¹ , Xu-Hui Xia ¹ , Tuck W. Wong ³ , Hao Bai ¹ , Marc Behl ² , Qian Zhao ¹ , Andreas Lendlein ² and Tao Xie ¹ ¹ Zhejiang University, China; ² Institute of Biomaterial Science,	108

Helmholtz-Zentrum Geesthacht, Germany; ³Universiti Teknologi Malaysia, Malaysia

PF-13	Thermoset shape memory polyurethane with intrinsic plasticity and tunable performance	109
	<u>Ning Zheng</u> , Zizheng Fang, Jingjing Hou, Qian Zhao, Tao Xie Zhejiang University, China	
PF-14	Shape memory polymer with spatially tunable plasticity	110
	<u>Jian-te Dong</u> , Wu-Sha Miao, Wei-ke Zou, Qian Zhao, Tao Xie Zhejiang University, China	
PF-15	Healable reconfigurable reprocessable thermoset shape memory polymer with highly tunable topological rearrangement kinetics	111
	<u>Zizheng Fang</u> , Ning Zheng, Qian Zhao, Tao Xie Zhejiang University, China	
PF-16	Versatile metallosupramolecular shape memory networks with gradient plasticity behaviors	112
	<u>Lipeng Yang</u> , Guogao Zhang, Ning Zheng, Qian Zhao, Tao Xie Zhejiang University, China	
PF-17	Ultrafast digital printing towards four dimensional shape changing materials	113
	<u>Limei Huang</u> , Ruiqi Jiang, Jingjun Wu, Jizhou Song, Hao Bai, Bo-Geng Li, Qian Zhao, Tao Xie Zhejiang University, China	
PF-18	Shape memory network with thermally distinct elasticity and plasticity	114
	<u>Weike Zou</u> , Qian Zhao, Yingwu Luo, Tao Xie Zhejiang University, China	
PF-19	Photo-defined 3D soft actuator based on hybrid dynamic bond network	115
	<u>Binjie Jin</u> , Huijie Song, Qian Zhao, Tao Xie Zhejiang University, China	
PF-20	Redox- and photo-biresponse ferrocene- and azobenzene-based polymer films	116
	<u>Xia Xia</u> , Haojie Yu, Li Wang, Zheng Deng, Jialiang Wu Zhejiang University, China	
PF-21	Non-covalent dispersion of multi-walled carbon nanotubes in aqueous solution with hyperbranched polyethylene-g-poly(methacrylic acid)	117
	<u>Zheng Deng</u> , Li Wang, Haojie Yu Zhejiang University, China	
PF-22	Synthesis of carboxymethyl starch-graft-polyvinylpyrrolidones and their properties for the adsorption of Rhodamine 6G and ammonia	118
	<u>Muhammad Haroon</u> , Haojie Yu, Li Wang and Raja Summe Ullah Zhejiang University, China	
PF-23	Preparation of fibers and films based on polyphosphazene blends with PVP for controlled delivery of anti-cancer drug	119
	<u>Raja Summe Ullah</u> , Li Wang, Haojie Yu, Muhammad Haroon, Zhejiang University, China	
PF-24	Study on synthesis and properties of β-cyclodextrin/ ferrocene based poly(acrylic acid) hydrogels with different tethered chain length	120
	<u>Jialiang Wu</u> , Li Wang, Haojie Yu, Xia Xia, Zheng Deng Zhejiang University, China	
PF-25	Study on controlled synthesis of silver nanowires and their applications	121
	<u>Shah Fahad</u> , Haojie Yu, Li Wang, Muhammad Haroon, Raja Summe Ullah	

	Zhejiang University, China	
PF-26	Preparation and application of nanofiber bundles via electrospinning of immiscible polymer blend <u>Yin Tang</u> , Lian-Fang Feng, Cai-Liang Zhang Zhejiang University, China	122
PF-27	Electrically conductive poly (n-isopropylacrylamide) composite hydrogels with improved mechanical behavior <u>Lin-Jiong Zhang</u> , Cai-Liang Zhang, Lian-Fang Feng Zhejiang University, China	123
PF-28	Solid-State thermal diodes enabling ambient temperature thermal circuits for energy harvesting <u>Song Wang</u> , ^{1,2} Anton L. Cottrill, ² Yuichiro Kunai, ² Aubrey R. Toland, ² Pingwei Liu, ² Wen-Jun Wang, ¹ and Michael S. Strano ² ¹ Zhejiang University, China; ² Massachusetts Institute of Technology, USA	124
PF-29	The fabrication of a durable platinum based DNA biosensor modified with conductive poly(3,4-ethylenedioxythiophene) (PEDOT) film and gold nanoparticles <u>Po-Yuan Tseng</u> , Shuaibin Ren, Yesong Gu Tunghai University	125
PF-30	Self-assembly amphiphilic block copolymers for efficient aqueous-processed hybrid solar cells <u>Jun-Huan Li</u> , Jun-Ting Xu Zhejiang University, China	126
PF-31	Toward efficient and durable nanocatalysis with CO₂/N₂-responsive unimolecular nanoreactor <u>Yuchen Zhang</u> , ¹ Pingwei Liu, ¹ Wen-Jun Wang, ¹ Bo-Geng Li, ¹ and Shiping Zhu ² ¹ Zhejiang University, China; ² McMaster University, Canada	127
PF-32	Employing gradient copolymer to achieve gel polymer electrolytes with high ionic conductivity <u>Zhe-Nan Zheng</u> , ¹ Xiang Gao, ¹ Yingwu Luo, ¹ Shiping Zhu ² ¹ Zhejiang University, China; ² McMaster University, Canada	128
PF-33	Superstretchable nacre-mimetic graphene/poly(vinyl alcohol) composite film based on interfacial architectural engineering <u>Nifang Zhao</u> , Miao Yang, Qian Zhao, Weiwei Gao, Tao Xie, Hao Bai Zhejiang University, China	129
PF-34	Biomimetic architected graphene aerogel with exceptional strength and resilience <u>Miao Yang</u> , Nifang Zhao, Ying Cui, Weiwei Gao, Qian Zhao, Chao Gao, Hao Bai, Tao Xie Zhejiang University, China	130