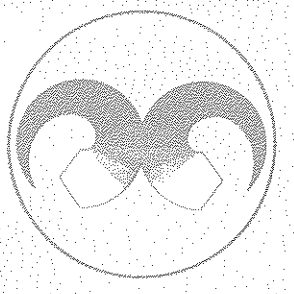
PPS-11

Eleventh Annual Meeting
Swiss Grand Hotel, Seoul, Korea
March 27-30, 1995

EXTENDED ABSTRACTS
&
FINAL PROGRAM



The Polymer Processing Society

International

COSPONSORED BY

THE KOREAN SOCIETY OF RHEOLOGY

POLYMER PROCESSING SOCIETY
ELEVENTH ANNUAL MEETING

Seoul, Korea
March 27-30, 1995

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PREFACE

It is my great pleasure to host the Eleventh Annual Meeting of the Polymer Processing Society in Seoul, Korea, specially at the time when Korean polymer industries are progressing rapidly.

This volume contains the extended abstracts of 169 oral papers and 60 poster papers which represent the current state of the leading-edge developments of polymer processing in the world.

My thanks are due to all who have worked hard to make this conference successful: the Conference Committee members, members of the Secretariat and the financial supportors. Especially, the moral leadership provided by the Honorary Chairman, Professor Sang Yong Kim, and sincere efforts by the Conference Secretary General, Professor Jae Chun Hyun and the Technical Program Committee Co-chairmen, Professors Won Ho Jo and Seung Jong Lee are greatly appreciated.

I also would like to extend my sincere appreciation to all the people who participate in this conference. I hope that all foreign participants have a pleasant stay in Korea.

Ki-Jun Lee
Chairman of the Conference Committee

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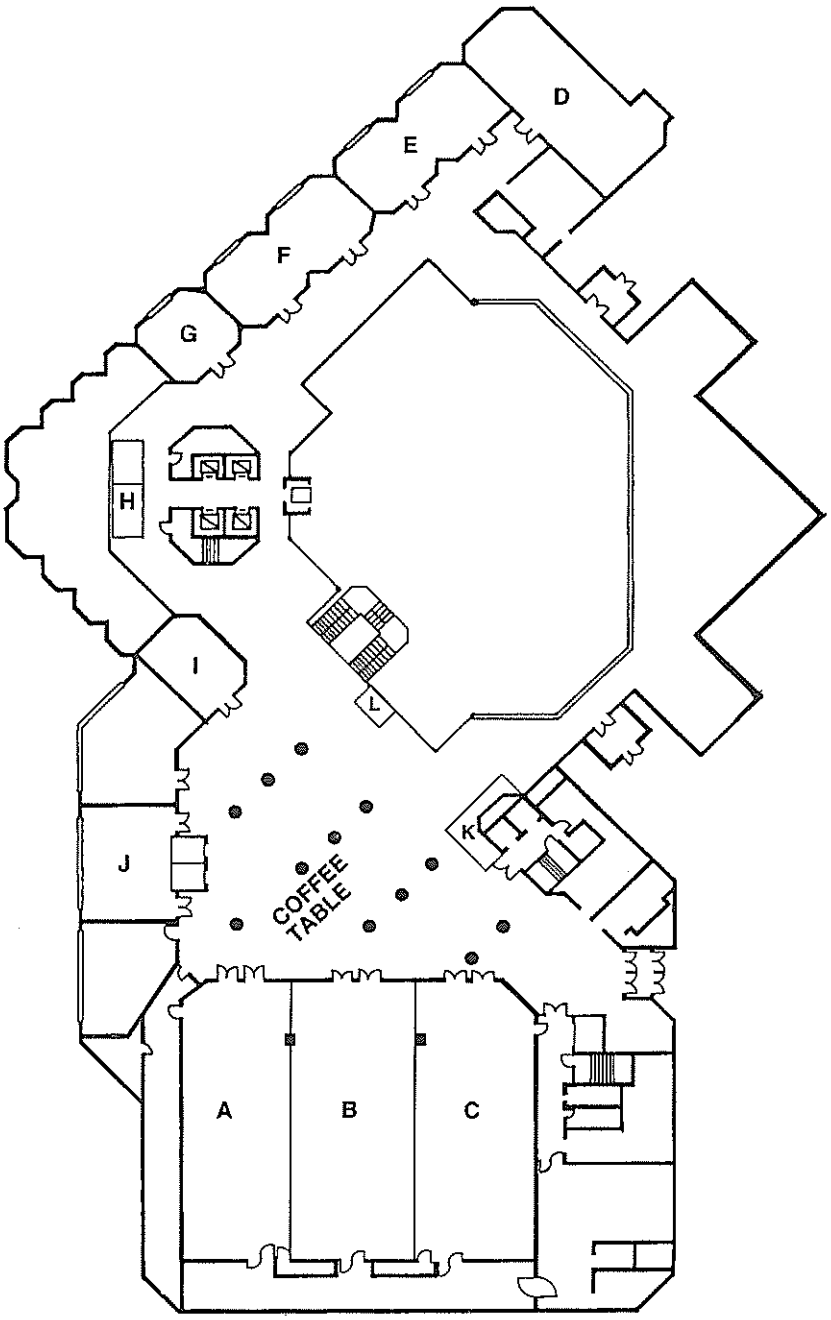

Ballroom (A, B, C), Flamingo (D), Skylark (E): **Oral rooms,** Swan (F): **Poster room,**
Crane (G): **PPS Business Meeting room,** H: **Preview room,**
Boardroom (I), Peacock (J): **Secretariat offices,**
K: **Registration desk,** L: **Information and tour desk**

CONFERENCE AT A GLANCE

Date	Time	Ballroom A	Ballroom B	Ballroom C	Flamingo D	Skylark E
Monday March 27	15:00-18:30	Registration (Foyer)				
	17:00-18:30	Welcome Reception (Grand Ballroom)				
Tuesday March 28	09:00-17:00	Registration (Foyer)				
	10:00-10:40	**Opening Ceremony** (Grand Ballroom) Opening Address : Ki-Jun Lee (Seoul National University, Korea) Congratulatory Address : Kunmo Chung (Minister of Science and Technology, Korea)				
	11:00-12:00	**Plenary Lecture** (Grand Ballroom) L.E. Scriven, University of Minnesota, USA **"Coating as Polymer Processing"**				
		LUNCH				
	14:00-15:40	**Rheology and Rheometry** 1-1	**Injection and Blow Molding** 4-1	**Polymer Blends and Alloys** 8-1	**Fibers and Films** 6-1	**Modeling of Polymer Processing** 2-1
	16:00-17:40	**Rheology and Rheometry** 1-2	**Injection and Blow Molding** 4-2	**Polymer Blends and Alloys** 8-2	**Fibers and Films** 6-2	**Modeling of Polymer Processing** 2-2
Wednesday March 29	09:00-10:40	**Rheology and Rheometry** 1-3	**Injection and Blow Molding** 4-3	**Polymer Blends and Alloys** 8-3	**Fibers and Films** 6-3	**Modeling of Polymer Processing** 2-3
	11:00-12:40	**Rheology and Rheometry** 1-4	**Injection and Blow Molding** 4-4	**Polymer Blends and Alloys** 8-4	**Fibers and Films** 6-4	**Coating Technologies** 5-1
		LUNCH				
	14:00-15:40	**Rheology and Rheometry** 1-5	**Injection and Blow Molding** 4-5	**Polymer Blends and Alloys** 8-5	**Mixing and Compounding** 7-1	**Coating Technologies** 5-2
	14:00-17:00	**Poster Session I** (Swan) Obligation time: 15:00-16:00				
	16:00-17:20	**Rheology and Rheometry** 1-6	**Extrusion** 3-1	**Structure Development in Processing** 11-1	**Mixing and Compounding** 7-2	**Coating Technologies** 5-3
	18:30-21:30	**Banquet** (Grand Ballroom)				
Thursday March 30	09:00-10:40	**Reactive Processing** 10-1	**Extrusion** 3-2	**Structure Development in Processing** 11-2	**Mixing and Compounding** 7-3	**Composite Processing** 9-1
	09:00-12:00	**Poster Session II** (Swan) Obligation time: 10:00-11:00				
	11:00-12:40	**Reactive Processing** 10-2	**Extrusion** 3-3	**Structure Development in Processing** 11-3	**Mixing and Compounding** 7-4	**Composite Processing** 9-2
		LUNCH				
	14:00-15:40	**Reactive Processing** 10-3	**Extrusion** 3-4	**Structure Development in Processing** 11-4		**Composite Processing** 9-3
	16:00-17:20	**Reactive Processing** 10-4	**Extrusion** 3-5	**Structure Development in Processing** 11-5		

Note: All events will take place on the second floor of the Swiss Grand Hotel.

Tuesday Afternoon
March 28

	Ballroom A	Ballroom B
	Rheology and Rheometry Chair: D.V. Boger and K.U. Kim	**Injection and Blow Molding** Chair: C.A. Hieber and T.H. Kwon
14:00	1-1-1KN **Flow-induced Concentration Fluctuations in Complex Liquids** G.G. Fuller (Stanford Univ., USA)	4-1-1KN **On the Modelling of the Injection Moulding Process for Thermoplastic Polymers** G. Titomanlio (Univ. di Salerno, Italy)
14:40	1-1-2 **Weakly Nonlinear Analysis of Purely Elastic Instabilities in Taylor-Dean Flow** Yong Lak Joo and Eric S.G. Shaqfeh* (Hanhwa, Korea and *Stanford Univ., USA)	4-1-2 **Sensitivity Analysis for Injection Mold Cooling System Using a BEM Approach** S.J. Park and T.H. Kwon (Pohang Univ. of Science and Technology)
15:00	1-1-3 **Analysis of Morphological Behavior and Compatibilizing Performance on the Rheological Properties of Two-phase Polymer Systems** Hyang Mok Lee and O Ok Park (KAIST, Korea)	4-1-3 **Measurement of Melt Temperature Profiles inside a Screw Channel by a New Integrated Thermocouple Ceramic Sensor** H. Yokoi and A. Kuroda (Univ. of Tokyo, Japan)
15:20	1-1-4 **Component Dynamics in a Miscible Polymer Blend: Molecular View of Thermorheologically Complex Behavior** G.-C. Chung, B.H. Arendt* and J.A. Kornfield* (Lucky, Korea and *Caltech, USA))	4-1-4 **Study on the Performance of Cooling Systems in Precision Molds** S.Y. Yang and H.C. Chang (National Taiwan Univ., ROC)
15:40	Coffee Break	Coffee Break
	Rheology and Rheometry Chair: D.V. Boger and H.J. Choi	**Injection and Blow Molding** Chair: C.A. Hieber and T.H. Kwon
16:00	1-2-1KN **Extrusion Defects and Flow Instabilities for Linear and Branched Polyethylenes** B. Vergnes (Ecole des Mines de Paris, France)	4-2-1 **Prediction of Parison Shape in Blow Molding** K. Sugiyama (Mitsubishi Chemical, Japan)
16:20		4-2-2 **Rheological Investigations on the Residual Wall Thickness in the Gas-assisted Injection Moulding Process** W. Michaeli and H. Findeisen (Inst. fur Kunststoffverarbeitung, Germany)
16:40	1-2-2 **Melt Strength and Die Swell Estimation from Extrudate Length** K.S. Seo, J.D. Cloyd, B.D. Snow and W. Culberson (Eastman Chemical, USA)	4-2-3 **Gas Assisted Injection Molding and Part Warpage** Youngsoo Soh and W. Nelson* (Taegu University, Korea and *Gain Technologies, USA)
17:00		4-2-4 **Birefringence in Polycarbonate - On the Origin of the Surface Maximum** R. Wimberger-Friedl (Philips, The Netherlands)

	Ballroom C	Flamingo D	Skylark E
	Polymer Blends and Alloys Chair: R. Muller and W.H. Jo	**Fibers and Films** Chair: T. Kikutani and J.C. Hyun	**Modeling of Polymer Processing** Chair: C.L. Tucker and S.J. Lee (SNU)
14:00	8-1-1KN **Chaotic Mixing: Applications to Polymer Processing** H.E.H. Meijer, G.W.M. Peters, F.P.T. Baayens, V.V. Meleshko, T.S. Krasnopolskaya and A.S. Galaktionov (Eindhoven University of Technology, The Netherlands)	6-1-1KN **Instabilities in Film Blowing** S.J. Kurtz (Union Carbide, USA)	2-1-1KN **Advanced Computer Algorithms for the Numerical Simulation of Polymer Flows** R. Keunings (Université Catholique de Louvain, Belgium)
14:40	8-1-2 **The Effect of Particle Size and Rubber Phase Content on Fracture Behavior of Toughened Polycarbonate** Kilwon Cho and Jae Ho Yang (Pohang Univ. of Science and Technology, Korea)	6-1-2 **Stress Determination in Film Blowing Using a Birefringence Method** A. Ghaneh-Fard, P.G. Lafleur and P.J. Carreau (Ecole Polytechnique, Canada)	2-1-2 **Viscoelastic Modeling of Coating Flows** E. Mitsoulis, G. Barakos and T.V. Pham (Univ. of Ottawa, Canada)
15:00	8-1-3 **Control and Prediction of the Preferential Location of Carbon Black in Polymer Blends and Consequences on the Morphology Stability and Electrical Conductivity** F. Gubbels, Ph. Maréchal, R. Jérome, Ph. Teyssié, E. Vanlathem* and R. Deltour* (Univ. of Liège and *Free Univ. of Brussels, Belgium)	6-1-3 **A Study on the Stability of a Two-layer Blown Film Coextrusion Process** K.-S. Yoon and C.-W. Park (Univ. of Florida, USA)	2-1-3 **Modeling of Non-isothermal Flows of Viscoelastic Materials** G.W.M. Peters and F.P.T. Baaijens (Eindhoven Univ. of Technology, The Netherlands)
15:20	8-1-4 **Physical Properties of Poly(methyl methacrylate) Toughened by Core-Shell Impact Modifier** Tak-Jin Moon, Seung Han, Kyung-Do Suh* and Young Chan Bae* (Korea Univ. and *Hanyang Univ., Korea)	6-1-4 **Three-Dimensional Viscoelastic Flow Simulation of Film Casting Process** K. Sakaki, T. Kajiwara and K. Funatsu (Kyushu Univ., Japan)	2-1-4 **Transient Effects in Two-layer Coextrusion Flows** A. Rincön, J. Vlachopoulos and A.N. Hrymak (McMaster Univ., Canada)
15:40	Coffee Break	Coffee Break	Coffee Break
	Polymer Blends and Alloys Chair: P.J. Carreau and K. Char	**Fibers and Films** Chair: T. Kikutani and B.C. Kim	**Modeling of Polymer Processing** Chair: C.L. Tucker and M.C. Lee
16:00	8-2-1 **Compatibilizer Effect of PS-GMA in PS/PBT Blend System** Hwa-Young Lee and Jin Kon Kim (Pohang Univ. of Science and Tech., Korea)	6-2-1 **Effect of Quenching Conditions on the Physical Properties of Poly(ethylene terephthalate) Multifilament** Y.B. Choi* and S.Y. Kim (Seoul National Univ. and *Kolon, Korea)	2-2-1 **Numerical Studies on the Spin Line Rheometer System** D. Kim, H.-J. Park and K.-J. Lee* (Sunkyong Industries and *Seoul National Univ., Korea)
16:20	8-2-2 **Effects of Carboxyl Compound Modification on Electrostatic Properties of Permanent Antistatic Styrenic Resins** H. Suezawa (Asahi Chemical, Japan)	6-2-2 **Effect of Molecular and Crystal Structures of PP Resins on Spunbond and Melt Blown Applications** Hee Ju Yoo (Himont, USA)	2-2-2 **A New Computational Method to Determine Planar Orientation Structure in Complex Suspension Flows** J. Xu and M.C. Altan (Univ. of Oklahoma, USA)
16:40	8-2-3 **Kinetics of Crystallization and Thermal Properties of Poly (ethylene naphthalate)/Poly(ethylene terephthalate) Blends** K. Han, H.-J. Kang, K.U. Kim*, T.S. Park* and S.S. Hwang* (Dankook Univ. and *KIST, Korea)	6-2-3 **Viscoelastic Effects on the Tension in Solid Polymer Film Handling Operations** X. Guan, M.S. High and D.A. Tree (Oklahoma State Univ., USA)	2-2-3 **Numerical Simulation of the Crystallization of PET in Injection Moulding** O. Verhoyen, R. Legras and F. Dupret (Univ. Catholique de Louvain, Belgium)
17:00		6-2-4 **Prediction of Bowing Phenomenon in Manufacturing Biaxially Oriented Poly(ethylene terephthalate** C.H. Kim, H.S. Kim and Y.K. Choun (SKC, Korea)	2-2-4 **Numerical Simulations and Experiments of the Mold Filling in the Resin Transfer Molding Process** Miae Choi*, Jean Goo Hwang and Seung Jong Lee (Seoul National Univ. and *NITI, Korea)
17:20			2-2-5 **Prediction of Dimensional Accuracy and Stability of Injection Moulded Amorphous Thermoplastics** L.W. Caspers and G.W.M. Peters (Eindhoven Univ. of Technology, The Netherlands)

Wednesday Morning
March 29

	Ballroom A	Ballroom B
	Rheology and Rheometry Chair: G.G. Fuller and O Ok Park	**Injection and Blow Molding** Chair: G. Titomanlio and H.-J. Park
09:00	1-3-1KN **Rheological and Rheo-optical Studies on Texture Development in Nematic Solutions of a Rodlike Polymer** G.C. Berry and S. Vijaykumar (Carnegie Melon Univ., USA)	4-3-1KN **Direct and Dynamic Visual-Analysis of Fiber Orientation Process** H. Yokoi (Univ. of Tokyo, Japan)
09:40	1-3-2 **A Network Model Predicting the Shear Thickening Behavior of a Poly(Vinyl Alcohol)/Sodium Borate Aqueous Solution** Kyung Hyun Ahn and Kunihiro Osaki* (Cheil Industries, Korea and *Kyoto Univ., Japan)	4-3-2 **The Effects of Elastomer Compositions and Processing Conditions on Shrinkage of Injection Molded Thermoplastic Polyolefins** S.Y. Lai, J. Bethea, R. Feig and S. Lee (Dow Plastics, USA)
10:00	1-3-3 **Measurement of the Effects of the Concentration and the Temperature on the Thermal Expansion Coefficients and the Apparent Viscosity for Polyacrylamide Aqueous Solution** Keumnam Cho and Mingoo Choi (Sung Kyun Kwan Univ., Korea)	4-3-3 **Experimental and Theoretical Study of the Injection Molding of Rubber Compounds** S. Karam, Y. de Zelicourt, A. Coupard and M. Vincent* (LRCCP and *Ecole des Mines de Paris, France)
10:20	1-3-4 **Observation of Sintering of Semi-Crystalline Polymers** Shih-Jung Liu (Chang Gung College of Medicine and Technology, R.O.C.)	
10:40	Coffee Break	Coffee Break
	Rheology and Rheometry Chair: G.G. Fuller and J.Y. Yoo	**Injection and Blow Molding** Chair: G. Titomanlio and K.H. Kim
11:00	1-4-1KN **Rheology of Suspensions: The Concept of the Shear Stress Equivalent Shear Rate** W. Gleißle (Univ. Karlsruhe, Germany)	4-4-1KN **Injection Molding of Center-Gated Disks: A Case Study** C.A. Hieber and K.H. Yoon* (Cornell Univ., USA and *Dankook Univ., Korea)
11:40	1-4-2 **The Helical Barrel Rheometer for On-line Viscometry** D.B. Todd, C.G. Gogos, M. Esseghir and D.-W. Yu (Stevens Institute of Technology, USA)	4-4-2 **An Experimental Study on the Gapwise Birefringence in Injection-Molded Polystyrene and Polycarbonate Disks** Kyunghwan Yoon (Dankook Univ., Korea)
12:00	1-4-3 **Continuous Rheological Control of Polymer Production and Processing Including Purity Classification** S.H. Ha, D. Brunner, B. Poltersdorf and H. Lüben (BRABENDER, Germany)	4-4-3 **A Study on the Effect of Molecular Orientation on the Impact Performance of Injection Molded Polycarbonate** A.M. Cunha and E. Schepers* (Univ. do Minho, Portugal and *Univ. Twente, The Netherlands)

	Ballroom C	Flamingo D	Skylark E
	Polymer Blends and Alloys Chair: H.E.H. Meijer and W.-N. Kim	**Fibers and Films** Chair: S.J. Kurtz and C.-W. Park	**Modeling of Polymer Processing** Chair: K. Funatsu and E. Mitsoulis
09:00	8-3-1 **Morphology and Mechanical Properties of Liquid Crystalline Copolyester and Poly(ethylene 2,6-Naphthalate) Blends** B.S. Kim and S.H. Jang* (Yeungnam Univ. and *Kolon , Korea)	6-3-1KN **Mechanism of Fiber Structure Development in High-speed Melt Spinning of Bicomponent Fibers** T. Kikutani (Tokyo Inst. of Tech., Japan)	2-3-1KN **Sensitivity Analysis and Optimization for Extrusion Die Design** C.L. Tucker III, D.E. Smith and D.A. Tortorelli (Univ. of Illinois, USA)
09:20	8-3-2 **Rheological Properties of Elastomer Containing Blends** P.J. Carreau, C. Lacroix, M. Bousmina, and A. Michel* (Ecole Polytechnique, Canada and *CNRS, France)		
09:40	8-3-3 **Development of Modulated Structure during Solution Casting of PMMA/PVAC Blends** C.S. Ha, T. Ougizawa* and T. Inoue* (Pusan National Univ., Korea and *Tokyo Inst. of Tech., Japan)	6-3-2 **Traveling Waves in Melt Spinning Spinlines** Byung Min Kim and Jae Chun Hyun (Korea University, Korea)	2-3-2 **Three-dimensional Simulation of Polymer Melt Flow in a Coat-hanger Die** S.Y. Na and D.H. Kim (KAIST, Korea)
10:00	8-3-4 **Phase Deformation during Elongational Flow in Two-Phase Molten Polymer Blends** I. Delaby, B. Ernst* and R. Muller (EAHP Univ. of Strasbourg and *Elf-Atochem, France)	6-3-3 **Intelligent Manufacture of Polyester Fibres on the Full Scale** S.F. Bush and C.G.A. Clayton (UMIST, UK)	2-3-3 **3-D FEM Simulation of Polymer Melt Flow in a Twin Screw Extruder -Study on the Full Flight Screw-** T. Kajiwara, L.-J. Liu and K. Funatsu (Kyushu Univ., Japan)
10:20	8-3-5 **Composites of Polycarbonate and Liquid Crystals: Study of the Phase Behaviour and Mechanical Properties** A.K. Kalkar and A.A. Bhalwankar (Univ. of Bombay, India)	6-3-4 **In-situ Pulping of Acrylic Polymers via Mesophase Formation** Byoung Chul Kim and Byung Ghyl Min (KIST, Korea)	2-3-4 **Application of Finite Volume Method to the Extrudate Swell Problem** Young-Cheol Ahn and M.E. Ryan* (Kyungnam Univ., Korea and *SUNY at Buffalo, USA))
10:40	Coffee Break	Coffee Break	Coffee Break
	Polymer Blends and Alloys Chair: H.E.H. Meijer and H.-J. Kang	**Fibers and Films** Chair: S.J. Kurtz and Y.S. Ko	**Coating Technologies** Chair: K. Adachi and I.H. Lee
11:00	8-4-1 **Effects of Processing Parameters on the in situ Compatibilization of Polypropylene Based Polymer Blends by One-step Reactive Extrusion** Guo-Hua Hu, Yi-Jun Sun and Morand Lambla (EAHP, France)	6-4-1 **Components for the Efficient Production of Highest Yarn Qualities** K. Schäfer (Barmag AG, Germany)	5-1-1KN **Industrial Coating Technology - Past, Present, Future** Edward D. Cohen (Dupont, USA)
11:20	8-4-2 **Temperature and Molecular Weight Effect of Styrene-Isoprene Diblock Copolymers on the Interfacial Tension between Polystyrene and Polyisoprene** W.H. Jo and K.H. Nam (Seoul National Univ., Korea)	6-4-2 **Parametric Study for Determining Fiber Aspect Ratio on Spinning for Nylon 6 Flat Yarn** J.W. Park, Y.S. Ho, H.S. Yu, W.T. Shin, H.Y. Kim and D.M. Rhee (Samyang R&D Center, Korea)	
11:40	8-4-3 **Interfacial Tension and Mixing of Polyethylene/Poly(ethylene terephthalate) Blend** D.J. Ihm and J.L. White (The Univ. of Akron, USA)	6-4-3 **In-situ Composite of PEI/LCP/Compatibilizer** Y.S. Kil, T.O. Ahn, L.S. Park*, S.S. Hwang**, S.M. Hong**, T.S. Park** and K.U. Kim** (Seoul National Univ., *Kyungpook National Univ. and **KIST, Korea)	5-1-2 **High-tech Products and "MICRO-GRAVURE" Coating Method** Richard Bennett and Yotaro Fujii (Yasui Seiki, Japan)
12:00	8-4-4 **Effect of End-functionalized Reactive Polymers on Interfacial Adhesion between Immiscible Polymers** K. Char, Y. Lee, B.I. Ahn, J. Kim* and K.U. Kim* (Seoul National Univ. and *KIST, Korea)		5-1-3 **Diagnostics for Sol-gel Coating** A.J. Hurd, C.J. Brinker, R.A. Cairncross and S. Prakash* (Sandia National Lab. and *Univ. of New Mexico, USA)
12:20			5-1-4 **High-speed Applicable Emulsion Coatings** H. Iesako, H. Matsuzaki, and H. Ota (Toagosei, Japan)

Wednesday Afternoon March 29

	Ballroom A	Ballroom B
	Rheology and Rheometry Chair: W. Gleißle and B. Vergnes	**Injection and Blow Molding** Chair: H. Yokoi and M. Vincent
14:00	1-5-1KN **Interaction between Prediction and Observation in Viscoelastic Fluid Mechanics** D.V. Boger (University of Melbourne, Australia)	4-5-1 **Contraction Pressure Loss Modeling for Injection Molding** Hern-Jin Park and C. Friedl* (Sunkyong Industries, Korea and *Moldflow, Australia)
14:20		4-5-2 **An Integral Analysis of the Filling Stage of the Reaction Injection Moulding Process** G.A.A.V. Haagh, G.W.M. Peters and H.E.H. Meijer (Eindhoven Univ. of Tech., The Netherlands)
14:40	1-5-2 **Damping Functions in Shear, Uniaxial and Biaxial Extensions for Narrow and Broad Distribution Polystyrene Melts** M. Takahashi, O. Urakawa* and T. Masuda (Kyoto Univ. and *Kyoto Inst. of Tech., Japan)	4-5-3 **Application of Domain Decomposition Method to Resin Transfer Mold Filling Process** Seong Jae Lee and Selçuk I. Guceri* (Mitsubishi Chemicals, Japan and *Univ. of Illinois, USA)
15:00	1-5-3 **Large Shear Deformation and Estimation of Deformational Memory for Polyethylacrylate Rubbers** N. Nakajima and E.R. Harrell* (Univ. of Akron and *Geon, USA)	4-5-4 **A Method for Detecting Displacement of an Insert in Transfer Molding of an Epoxy Compound** Junichi Saeki, Shigeharu Tsunoda and Kazuya Ooji (Hitachi, Japan)
15:20	1-5-4 **Significance of Non-linearity in Entrance Extensional Flow** Y. Iwasa, T. Takahashi, K. Minagawa, K. Iwakura and K. Koyama (Yamagata Univ., Japan)	
15:40	Coffee Break	Coffee Break
	Rheology and Rheometry Chair: W. Gleißle and B. Vergnes	**Extrusion** Chair: C.I. Chung and K.-J. Min
16:00	1-6-1 **Characterization of Rheologically Complex Materials with the Yield Stress** L.A. Utracki and P. Sammut (NRCC/IMI, Canada)	3-1-1KN **Large Extruders and Extrusion Systems for the Production of Biaxially Oriented Films** F. Hensen (Barmag AG, Germany)
16:20	1-6-2 **Determination of Molecular Weight Distribution by Shape Analysis of Rheological Functions** Axel Goettfert, Ernst-Otto Reher and Volkmar Schulze (Goettfert, Germany)	
16:40	1-6-3 **On the Importance of Stability Constraints in the Formulation and the Application of Viscoelastic Constitutive Equations** Y. Kwon and A.I. Leonov (Univ. of Akron, USA)	3-1-2 **Mechanism of Fluoroelastomer Processing Aid and its Influences on Final Films** Sehyun Nam and Thomas J. Blong (3M, USA)

	Ballroom C	Flamingo D	Skylark E
	Polymer Blends and Alloys Chair: Ph. Maréchal and B.S. Kim	**Mixing and Compounding** Chair: C.G. Gogos and J.-K. Yeo	**Coating Technologies** Chair: E.D. Cohen and I.H. Lee
14:00	8-5-1 **Rheology and Morphology of Blends of a Thermotropic Liquid Crystalline Polymer with Polyphenylene Sulfide** Heon Sang Lee, Woo Nyon Kim, Jae Chun Hyun and David W. Giles* (Korea Univ., Korea and *Lawrence Berkeley Lab., USA)	7-1-1KN **Solid Conveying Melting and Fluid Mechanics of a Thermoplastic in a Modular Co-rotating Twin Screw Extruder** James L. White (Univ. of Akron, USA)	5-2-1KN **Dynamic Wetting and Air Entrainments in High Speed Coating** K. Adachi (Kyushu Inst. of Tech., Japan)
14:20	8-5-2 **Blends of Amorphous and Semicrystalline High Performance Polymers** Jose' M. Kenny (Univ. of Perugia, Italy)		
14:40	8-5-3 **Rheological and Mechanical Properties of Compatibilized Blends of Polypropylene/Nylon 6** Jae-Dong Lee and Seung-Man Yang (KAIST, Korea)	7-1-2 **Tangential or Intermeshing Mixer? Technological Aspects to Make the Right Choice** Luigi Pomini (POMINI, Italy)	5-2-2 **Numerical Modelling of Multilayer Slot Coating Flows** Kiran Kumar K.N., Eric W. Grald and S. Subbiah (Fluent, USA)
15:00	8-5-4 **Studies in Polyethylene-Polycarbonate Blends** R.M. Gaonkar, D.D. Kale, and S. Satish* (Univ. of Bombay and *Indian Petrochemical, India)	7-1-3 **The Role of the Melting Region on Mixing and Compounding Performance in an Intermeshed Twin Screw Extruder** T. Sakai, J. Kakizaki and K. Nakamura (Japan Steel Works, Japan)	5-2-3 **Slip Phenomenon between Two Contact Rollers and the Thickness of Liquid Film Produced on the Roller** Tomiichi Hasegawa and Tomoaki Ichikawa (Niigata Univ., Japan)
15:20		7-1-4 **Non-Newtonian Flow Modelling in the Mixing Section of a Single-screw Extruder with Flow Analysis Network Method** Yeh Wang and Cheng Chong Tsay (Tunghai Univ., ROC)	5-2-4 **The Effects of Hydrodynamics on Coating Properties** Zhenlei Cao (Paper Industrial Research Institute, PRC)
15:40	Coffee Break	Coffee Break	Coffee Break
	Structure Development in Processing Chair: J.M. Schultz and A.D. Kennedy	**Mixing and Compounding** Chair: C.G. Gogos and S.S. Woo	**Coating Technologies** Chair: E.D. Cohen and S. Fuchigami
16:00	11-1-1KN **Synchrotron Radiation and the Study of Polymer Structure Development** Anthony J. Ryan (Manchester Materials Science Centre and Univ. of Manchester and UMIST, UK)	7-2-1 **Numerical Study on the Mixing Performance of Rotors and Kneading Discs in a Twin Screw Extruders by 3-D FEM** K. Funatsu, H. Higashi, and T. Kajiwara (Kyushu Univ., Japan)	5-3-1KN **Coating Research Collaboration between Academia and Industry** Shuzo Fuchigami (3M, USA)
16:20		7-2-2 **Inert Gases as Physical Blowing Agents for "Green" Plastic Foams** M. Xanthos, J.A. Biesenberger and S.K. Dey (Stevens Inst. of Tech., USA)	
16:40	11-1-2 **Melting and Recrystallization of Polypropylene Fibres** Olav Hande (SINTEF, Norway)	7-2-3 **Rubber Concrete from Waste Tires** Young-Keun Hong and Kyung-Ho Chung (Univ. of Suwon, Korea)	5-3-2 **Measurement of the Normal Force Generated in the Flow of Liquids between Two Rollers** T. Hasegawa, K. Miura, T. Narumi and M. Horigome* (Niigata Univ. and *Dainippon Ink and Chemicals, Japan)
17:00			5-3-3 **Convective Drying of Polymer Solution Containing Two Volatile Solvents - Effect of Initial Composition on Drying Rate and on Selectivity** M. Yoshida and H. Miyashita (Toyama Univ., Japan)

Thursday Morning
March 30

	Ballroom A	Ballroom B
	Reactive Processing Chair: M. Lambla and S.C. Kim	**Extrusion** Chair: C.I. Chung and F. Hensen
09:00	10-1-1KN **In Situ Compatibilisation of PP/PBT Blends by One-step Reactive Extrusion** M. Lambla, Y.J. Sun, G.H. Hu and H.K. Kotlar* (EAHP, France and *Borealis, Norway)	3-2-1KN **Twin Screw Technology** D.F. Mielcarek (Werner & Pfleiderer, USA)
09:40	10-1-2 **Effect of Graft Level of Butyl Acrylate Rubbers on Properties of Acrylonitrile-Styrene-Acrylate (ASA)/Acrylonitrile-Butadiene-Styrene (ABS) Blends** M.C.O. Chang, R.M. Auclair and D.E. Williams (Monsanto, USA)	3-2-2 **An Experimental Study on Devolatilizing Performance of a Long Vent Section in a Twin-Screw Extruder** N.H. Wang, T. Sakai and N. Hashimoto (Japan Steel Works, Japan)
10:00	10-1-3 **Bulk Polymerizations in Continuous, Drag-Flow, Backmix Reactors** J.A. Biesenberger, Y. Lu and D.B. Todd (Stevens Inst. of Tech., USA)	3-2-3 **Melt Grafting of a Readily Homopolymerizable Monomer onto Polyethylene in a Twin-Screw Extruder** W.E. Baker and K.E. Oliphant (Queen's Univ., Canada)
10:20	10-1-4 **Curing Behavior of Unsaturated Polyester Resin Based on Recycled Poly(ethylene terephthalate)** Dai Soo Lee and Ju Hyun Kim (Chonbuk National Univ., Korea)	3-2-4 **Melting in Co-rotating Twin Screw Extruders** H. Potente and U. Melisch (Univ. of Paderborn, Germany)
10:40	Coffee Break	Coffee Break
	Reactive Processing Chair: M. Lambla and S.C. Kim	**Extrusion** Chair: F. Hensen and S.J. Lee (Kolon)
11:00	10-2-1KN **Compatibilization of Polymer Blends** C.W. Macosko (Univ. of Minnesota, USA)	3-3-1KN **Process-Concurrent Calculation of Moulded Part Properties** H. Potente, J. Wendehals and Th. Wenniges (Univ. of Paderborn, Germany)
11:40	10-2-2 **In Situ Generation of Compatibilisers by Reactive Compounding of Functionalised Polystyrenes and Polymethylmethacrylates** Aage Stori (SINTEF, Norway)	3-3-2 **Multiphase Flow Simulation in Extrusion Dies.** R. Katsumoto and J.L. White* (Fuji Photo Film, Japan and *Univ. of Akron, USA)
12:00	10-2-3 **Orientation Development during Processing of Thermotropic Liquid Crystalline Copolyester** Ming Li and Gan-ce Dai (East China Univ. of Science and Tech., PRC)	3-3-3 **Extrusion Die Design** J. Vlachopoulos, B. Koziey* and J. Vlcek** (McMaster University and *Polydynamics, Canada and **Compuplast, Czech Republic)

	Ballroom C	Flamingo D	Skylark E
	Structure Development in Processing Chair: A.J. Ryan and I.J. Chung	**Mixing and Compounding** Chair: J.L. White and H.S. Song	**Composite Processing** Chair: J.C. Seferis and K.J. Ahn
09:00	11-2-1KN **Ultra-fine Structures in Crystalline Polymer Solids Observed by High-Resolution Electron Microscopy** M. Tsuji (Kyoto Univ., Japan)	7-3-1KN **The Role of Rheology in Dispersive Mixing of Immiscible Polymer Blends** C.G. Gogos, M. Avgousti, M. Esseghir and D.W. Yu (Stevens Inst. of Tech., USA)	9-1-1KN **Dynamic Viscoelasticity of Polymers and Composites** J.C. Seferis (Univ. of Washington, USA)
09:40	11-2-2 **Cooperative Crystallization in Polymer Blends** J.M. Schultz (University of Delaware, USA)	7-3-2 **Evolution of Dispersive Mixing in Blends of Polycarbonate and Styrene-Acrtlonitrile Copolymer** S. Lee, H. Kim, S.S. Woo, D.W. Yu*, S.H. Kim*, M. Esseghir* and C.G. Gogos* (Cheil Industries, Korea and *Stevens Inst. of Tech., USA)	9-1-2 **Characteristics of Tooling Composite and Their Effect on Thermo-Mechanical Deformation** K.J. Ahn, K.M. Chung, C.H. Chung, Y.S. Eom, H.S. Choi, J.M. Ha and J.D. Nam* (Korean Air and *Sung Kyun Kwan Univ., Korea)
10:00	11-2-3 **The Kinetics of Extended Chain Crystal Structure Development** M. Kakani, T.C. Tsai, K.A. High, M.S. High and D.A. Tree (Oklahoma State Univ., USA)	7-3-3 **Characterization of Carbon Black Agglomerate Structure and its Relation to Dispersibility** H. Yamada, I. Manas-Zloczower and D. L. Feke (Case Western Reserve Univ., USA)	9-1-3 **Rheological Properties of Long Fiber Reinforced Thermoplastic Composites** T. Kitano, Y. Nagatsuka, M.W. Lee* and Y.M. Lee*, H.K. Choi* and H.S. Kim* (NIMCR, Japan and *NITI, Korea)
10:20	11-2-4 **Structure and Morphology of Poly(tetramethylene succinate) Crystals** K.J. Ihn, E.S. Yoo* and S.S. Im* (Dankook Univerwity and Hanyang University*, Korea)	7-3-4 **The Effects of Processing Aids on the Morphology of Modified Polyphenylene Ether Blends** H. S. Song, S.M. Park, H.J. Lee, J.Y. Hwang and T.H. Kwack (Hanwha Group R&E Center, Korea)	9-1-4 **Effects of Hygrothermal Environments on Mechanical Properties of Pultruded Composites** J.S. Lee, S.B. Lee* and J.W. Lee (Sogang Univ. and *Cheju National Univ., Korea)
10:40	Coffee Break	Coffee Break	Coffee Break
	Structure Development in Processing Chair: A.J. Ryan and I.J. Chung	**Mixing and Compounding** Chair: N. Nakajima and H.W. Rhee	**Composite Processing** Chair: J.C. Seferis and J.W. Lee
11:00	11-3-1KN **Structure Development in Cast-Film Extrusion of Polypropylene** J.M. Haudin, F. Jay and B. Monasse (Ecole des Mines de Paris, France)	7-4-1 **Basic Studies of Flow in a Buss Kokneter** Min Young Lyu and James L. White (Univ. of Akron, USA)	9-2-1 **Numerical Simulation of Three Dimensional Resin Transfer Mold Filling Process** S.T. Lim, M.K. Kang, W.I. Lee and J.Y. Yoo (Seoul National Univ., Korea)
11:20		7-4-2 **Effect of Additive Mixing Conditions on the Surface Roughness and Haze of Blown LDPE Film** Jeong S. Yu, Myung-Ho Kim, and Seok H. Yoon (LG Chemical, Korea)	9-2-2 **Advances in Fiber Orientation Prediction for Injection Molding** B. VerWeyst and C.L. Tucker III (Univ. of Illinois, USA)
11:40	11-3-2 **Effect of Thermal History on Viscoelastic Properties of Thermotropic Liquid Crystalline Copoly (ester-imide)** Tae Kyun Kim and In Jae Chung (KAIST, Korea)	7-4-3 **Monitoring of Homogenization and Structure Analysis in Butadiene-Acrylonitrile Copolymer/ PVC Blend** S.-Y. Kwak and N. Nakajima* (KIST, Korea and *Univ. of Akron, USA)	9-2-3 **Autoclave-Assisted Resin Transfer Molding Process (ARTM) for High Performance Polymeric Composite in Aircraft Applications** J.-D. Nam, S.-W. Kim*, K.-J. Lee* and J.C. Seferis** (Sung Kyun Kwan Univ., *Seoul National Univ., Korea and **Univ. of Washington, USA)
12:00			9-2-4 **Principle of Thermoplastic Composite Processing** T. Matsuo, H. Yamane and T. Yuba (Kyoto Inst. of Tech., Japan)
12:20			9-2-5 **Prediction of Process-Induced Residual Stresses in Pultruded Thermosetting Composites** C.H. Hwang, H.S. Kim, H.M. Park and J.W. Lee (Sogang Univ., Korea)

Thursday Afternoon
March 30

	Ballroom A	Ballroom B
	Reactive Processing Chair: C.W. Macosko and J.A. Biesenberger	**Extrusion** Chair: D.F. Mielcarek and H. Potente
14:00	10-3-1 **Phase Separation during Curing of Epoxy / Polyetherimide** Jin Wan Park and Sung Chul Kim (KAIST, Korea)	3-4-1KN **Success of Science in Polymer Extrusion** Chan I. Chung (Rensselaer Polytechnic Inst., USA)
14:20	10-3-2 **Processing of Polymers Using Reactive Diluents** J.G.P. Goossens, H.E.H. Meijer (Eindhoven Univ. of Technology, The Netherlands)	
14:40	10-3-3 **Simulation of the Reactive Ex-trusion of Nylon 6 Using Haake Rheometer** Zhen-Guo Yang and B. Lauke* (East China Univ. of Science and Technology, P.R.C. and *Inst. of Polymer Research Dresden, Germany)	3-4-2 **Analysis of Melting Behaviour in Single Screw Extruders** H. Potente and J. Wendehals (Univ. of Paderborn, Germany)
15:00	10-3-4 **SIMPOREA: Simulator for Polymerization Reactor** K. Nagasaka, K. Nakajima, T. Nagashima and R. Mezaki* (Mitsubishi Research Institute and *Mitsubishi Chemical, Japan)	3-4-3 **Analysis of Pressure Fluctuations in a Single Screw Extruder** J. Becker, C. Klason, T. Kitano*, J. Kubát and P. Sáha** (Chalmers Univ. of Tech., Sweden, *NIMCR, Japan and **Technical Univ., Czech Republic)
15:20	10-3-5 **Effect of Transesterification on the Properties of PBT/LC 5000 Blend** Junyeob Lee, Jyongsik Jang, Seung Sang Hwang*, Soon Man Hong*, Tae Suk Park* and Kwang Ung Kim* (Seoul National Univ. and *KIST, Korea)	3-4-4 **Modification of Barrier-Flighted Screw Sections to Eliminate Flow Restrictions** Kun S. Hyun, M.A. Spalding and J.R. Powers* (Dow Chemical and *Styrenics/ETP TS&D, USA)
15:40	Coffee Break	Coffee Break
	Reactive Processing Chair: C.W. Macosko and J.A. Biesenberger	**Extrusion** Chair: D.F. Mielcarek and H. Potente
16:00	10-4-1 **Liquid Dicyanate Resin Transfer Molding** Yung-Tin Chen, C.W. Macosko (Univ. of Minnesota, USA)	3-5-1 **Energy Dissipation in Single Screw Extrusion** Chicheng Wang and G.A. Campbell (Clarkson Univ., USA)
16:20	10-4-2 **Chemical Modification of Polypropylene by Reactive Extrusion : Fibre Preparation and Properties** S.-W. Tsui, M.W.R. Brown, A.F. Johnson and P.D. Coates (Univ. of Bradford, UK)	3-5-2 **Dewatering Processing through Twin Screw Extruder** Akiyoshi Kobayashi and Junya Ishibashi (Toshiba Machine, Japan)
16:40	10-4-3 **Estimation of Viscosity Functions for Thermosets from Spiral Mold Filling** Dae Su Kim, C.W. Macosko (Univ. of Minnesota, USA)	3-5-3 **The Direct Observation at a Transparent Twin Screw Extruder** Yichong Guo, Tinghua Liu, Ziwei Chen and Fuhua Zhu (Beijing Univ. of Chemical Tech., PRC)

	Ballroom C	Flamingo D	Skylark E
	Structure Development in Processing Chair: M. Tsuji and J.M. Haudin		**Composite Processing** Chair: T. Kitano and J.K. Kim (KIST)
14:00	11-4-1KN **Measurements of Structure Development in Fiber Spinning** Alan D. Kennedy (DuPont, USA)		9-3-1 **Effects of Compounding Conditions on Mechanical Properties of Glass Fiber-Reinforced Polyamide-6** S. Nagae, K. Nagura, N. Yamagiwa, Y. Yamane, K. Miyake, and K. Inoue (Kobe Steel, Japan)
14:20			9-3-2 **Toughening of Brittle Epoxy by Inclusion of PBT-PTMG Copolymer** Jun Kyung Kim, Sung Tae Kim and Chul Rim Choe (KIST, Korea)
14:40	11-4-2 **Structure Formation during Spinning of Porous Hollow Fibres from Solutions of Poly(2,6-dimethyl-1,4-phenylene ether) in Cyclohexanol** S. Berghmans, H. Berghmans*, H.E.H. Meijer and J. Mewis* (T. U. Eindhoven, The Netherlands and *K. U. Leuven, Belgium)		9-3-3 **Toughening Effects on The Property Changes of Cured Compimide Type Bismaleimides** Soo-Jin Park and Jae-Rock Lee (Korea Research Inst. of Chemical Technology, Korea)
15:00	11-4-3 **Crystallization of Poly(ethylene terephthalate)(PET)/ Talc and PET/Surlyn Blends in Injection Molding** Masami Okamoto, Yoshihiro Sinida and Nobuyuki Kinami (Toyobo Research Center, Japan)		9-3-4 **Process Induced Matrix Damage in Stitched Structural Composites** S.-B. Shim, A.J. Berg, J.C. Seferis, W. Hudson* and K.J. Ahn** (Univ. of Washington, *Ciba Composites, USA and **Korean Air, Korea)
15:20	11-4-4 **Analysis of Birefringence in Magneto-Optical Discs** B. Friedrichs, M. Horie and Y. Yamaguchi (Mitsubishi Chemical, Japan)		
15:40	Coffee Break		Coffee Break
	Structure Development in Processing Chair: M. Tsuji and J.M. Haudin		
16:00	11-5-1 **Entanglement Effects on the Carbon-Gel Structure in the Carbon Black Filled Elastomers** N. Kida, M. Ito, F. Yatsuyanagi and H. Kaido* (Univ. of Tokyo and *The Yokohama Rubber, Japan)		
16:20	11-5-2 **Effect of Flame Retardant Additives on Structure Development in Polypropylene Fibers** Y. Chen,* Y. Jin and Bhuevenesh Goswami, (Clemson Univ., USA and *China Textile Univ., PRC)		

POSTER PAPERS

Session I (Swan room) Chair: J.A. Covas and H.J. Kang

14:00-17:00 Wendesday Afternoon, March 29 (obligation time: 15:00-16:00)

Extrusion

3-P-1 **Numerical Simulation of Multi-layer Flow for Polymer Melts** K. Matsunaga, T. Kajiwara and K. Funatsu (Kyushu Univ., Japan)

3-P-2 **Integrated Cae Design of Mandrel Pipe Dies** O.S. Carneiro and J.A. Covas (Univ. of Minho, Portugal)

3-P-3 **Study of Three-dimensional Mixing Characteristics of a Single-Screw Extruder via Chaotic Flows** S.J. Kim and T.H. Kwon (Pohang Univ. of Science and Tech., Korea)

Injection and Blow Molding

4-P-1 **In-Mold Measurement of Sink Mark Generation Process by Optical Fiber Sensors** H. Yokoi, N. Masuda, Y.Itou* and S. Takahashi** (Univ. of Tokyo, *Sekisui Chemical and **Polyplastics, Japan)

4-P-2 **Foaming Phenomena in Gas-Assisted Injection Moulded (GAIM) Parts** H. Potente and E. Moritzer (Univ. of Paderborn, Germany)

Fibers and Films

6-P-1 **Molecular Orientation and Periodical Structure of Vacuum Deposited Polyethylene Oligomer Thin Films** H. Shimizu and K. Nakayama (NIMCR, Japan)

6-P-2 **A New Simple Method Determining the Optimum Concentration for UHMW PE Gel Films** E.K. Kim, B.C. Ji, S.S. Han* and S. Y. Kim** (Kyungpook National Univ., *Yeungnam Univ. and **Seoul National Univ., Korea)

6-P-3 **Effect of Melt Draw Down on Dynamic Viscoelastic Properties of Thermotropic Liquid Crystalline Polymer Film** K. Nakayama, S. Puissant, A. Kaito and M. Kyotani (NIMCR, Japan)

6-P-4 **Relation between Relaxation Modulus and Storage Modulus of Polypropylene Monofilament** Seung O Lee and Sang Yong Kim (Seoul National Univ., Korea)

6-P-5 **Effect of the Gelation/Crystallization Temperatures on the Physical Properties of Ultra-high Molecular Weight Polyethylene Gel-spun Fibers** H. Jung* and S.Y. Kim (Seoul National Univ. and *Sam Yang Group R&D Center, Korea)

6-P-6 **Relationship between Thermal Shrinkage and Crystallinity of Poly(ethylene terephthalate) Multifilament** J.S. Kim and S.Y. Kim (Seoul National Univ., Korea)

6-P-7 **Study on Draw-Texturing of Superfine PP Drawn Yarn** Y. Zhang, M. Zhu, J. Jiang, W. Wu and Y. Chen (China Textile Univ., PRC)

6-P-8 **A New Superfine Antistatic PP Fiber** M. Zhu, Y. Zhang, Z. Luo, W. Wu and Y. Chen (China Textile Univ., PRC)

Composite Processing

9-P-1 **Thermo-Chemical Model on the Curing Step in the Resin Transfer Molding Process** Miae Choi* and Seung Jong Lee (Seoul National Univ. and *NITI, Korea)

9-P-2 **Wettability and Interfacial Shear Strength in Single Glass Fiber/Thermoplastic Matrix** Y.S. Kwon, J.S. Lee, H.W. Rhee and J.W. Lee (Sogang Univ., Korea)

9-P-3 **Processing-Structure-Properties Relationships in Compression Molding of Short-Fiber Thermosetting Matrix Composites** Jose' M. Kenny, Giuseppe Molina* and Enrico Indino* (Univ. of Perugia and *Fiat Research Center, Italy)

9-P-4 **A Study on the Curing Reaction of Glass Fiber/Epoxy Prepregs** H. Kim, K. Char, Y.S. Eom*, K.M. Chung* and K.J. Ahn* (Seoul National Univ. and *Korean Air, Korea)

9-P-5 **Hygrothermal Cycling Studies of Epoxy/Carbon Fiber Composites** Jae-Do Nam, Dae-Won Suh, Jungjung Wha*, Yongsung Um* and Kyujong Ahn* (Sung Kyun Kwan Univ. and *Korean Air, Korea)

Reactive Processing

10-P-1 **Role of Molecular Structure on the Silane Crosslinking of Polyethylene: The Importance of Resin Molecular Structure Change during Silane Grafting** W.K. Wong and D.C. Varrall (Exxon Chemical Europe, Belgium)

10-P-2 **Studies of Filling Process in Reaction Injection Molding** W. Wang and F. Zhu (Beijing Univ. of Chem. Tech., PRC)

Structure Development in Processing

11-P-1 **Electric Field Induced Morphology of Immiscible Polymer-Blend Solution** Jong-Wook Ha and Seung-Man Yang (KAIST, Korea)

11-P-2 **Chemorheological and Dynamic-mechanical Studies of Brominated Epoxy Resins** F. Fdez. de Nograro, M.D. Martín and I. Mondragon (UPV/EHU, Spain)

11-P-3 **A Phase Transition of Polydomain Structure of Liquid Crystalline Polymers during Weak Shear Flow** Kwang Man Kim and In Jae Chung (KAIST, Korea)

11-P-4 **Comparison of Ultra-Drawing Behavior of Ultra-High-Molecular-Weight Polyethylene between Gel-Like Spherulites Press Method and the Gel-Casting Method** T. Ohta, A. Takada, T. Yamamura, A. Kawaguchi* and S. Murakami* (Osaka City Univ. and *Kyoto Univ., Japan)

11-P-5 **Strain-induced Crystallization of Poly(ethylene 2,6-Naphthalene dicarboxylate), Poly(ethylene Terephthalate) and their Blends** S.J. Oh and K. Nakayama (NIMCR, Japan)

11-P-6 **Structure Development in the Drawing/Heating Process of Poly(ethylene naphthalate) [PEN]** S. Murakami, M. Yamakawa, M. Tsuji and S. Kohjiya (Kyoto Univ., Japan)

11-P-7 **Computation of Solidification of Semi-Crystalline Polymers Using a Variable Interface Temperature Model** A. Bénard, S.G. Advani and J.M. Schultz (Univ. of Delaware, USA)

11-P-8 **Structural Investigation of UHMWPE Gel-Films by High-Resolution Solid State C-13 NMR Spectroscopy and the Relations with Their Properties** Q. Zhu, K. Hong, F. Lu, F. Horii*, M. Tsuji* and R. Kitamaru* (Univ. of Sci. & Tech. of China, PRC and *Kyoto Univ., Japan)

Plastics Recycling

12-P-1 **Life Cycle Analysis and Recycling** B.M. Humelsine (Wellman, USA)

12-P-2 **Development of Recycling Technology for Waste Tires** Jin K. Kim and Ha-Na Cho (Gyeongsang National Univ., Korea)

Session II (Swan room) Chair: J.M. Kenny and H.J. Choi

09:00-12:00 Thursday Morning, March 30 (obligation time: 10:00-11:00)

Rheology and Rheometry

1-P-1 **Dynamic Behaviors of an ER Fluid at Small Strain** Young Sil Lee and O Ok Park (KAIST, Korea)

1-P-2 **Rheological and Thermal Properties of Blends of Syndiotactic and Atactic Polystyrene** Joon-Yong Park and O Ok Park (KAIST, Korea)

1-P-3 **Rheological Properties of PS/PαMS Blends and PS-*block*-PαMS Copolymer** Jin Kon Kim and Hee-Hyun Lee (Pohang Univ. of Science and Tech., Korea)

1-P-4 **Rheological Properties of Polyisobutylene Solution from Rod-Climbing Experiment** H.S. Shon*, H.J. Choi and H.J. Lee (Inha Univ. and *Orion Electric, Korea)

1-P-5 **Development of a New Constitutive Equation for Polymer Melts based on the Partially Extending Strand Convection and the Anisotropic Mobility** S. Kihara, T. Kajiwara and K. Funatsu (Kyushu Univ., Japan)

1-P-6 **A Study on the Shear Rheology of Poly(methyl methacrylate) Resin** H.S. Song, S.M. Park, H.J. Lee, J.Y. Hwang and T.H. Kwack (Hanwha Group R&E Center, Korea)

1-P-7 **Preparation of Alumina Slurry using Polyelectrolyte for Tape Casting, and its Rheological Behavior** Beyong-Hwan Ryu, Hang-Kyo Jin, Jae-Cheon Koh, Jung-Min Lee and Suguru Suzuki* (Korea Research Inst. of Chemical Tech., Korea and *Nagoya Inst. of Tech., Japan)

1-P-8 **Viscosity of Alumina Slurry Prepared with Polar and Non-Polar Vehicle for Tape Casting** Beyong-Hwan Ryu, Hang-Kyo Jin, Jae-Cheon Koh, Jung-Min Lee and Suguru Suzuki* (Korea Research Inst. of Chemical Tech., Korea and *Nagoya Inst. of Tech., Japan)

1-P-9 **The Pulsatile Flow Characteristics of Non-Newtonian Fluids in the Stenotic and Bifurcated Tubes** Sang-Ho Suh and Sang-Sin Yoo* (Soongsil Univ. and *Hankuk Avation Univ, Korea)

Injection and Blow Molding

4-P-3 **Effects of In-Plane Velocity Gradients on Melt Flow and Fiber Orientation in Injection Molding** S.T. Chung and T.H. Kwon (Pohang Univ. of Science and Tech., Korea)

4-P-4 **High Weissenberg Number Simulation of Annular Extrudate Swell for Parison Formation in Blow Molding** S. Tanoue, T. Kajiwara and K. Funatsu (Kyushu Univ., Japan)

4-P-5 **Quality Control of the Plastics Processing through the Comprehensive Application of the Fuzzy Cluster Analysis and the Neural Network** H. Potente, Y.H. Du and T. Wenniges (Univ. of Paderborn, Germany)

4-P-6 **Prediction of Mechanical Properties in Injected Molded Part Using A Neural Network** Hern-Jin Park and Byung H. Kim* (Sunkyong Industries, Korea and *Univ. of Massachusetts, USA)

4-P-7 **Effects of Material Properties and Processing Conditions on the Dimensional Stability of Injection Molded Parts** Jose' M. Kenny and Giuseppe Molina* (Univ. of Perugia and *Fiat Research Center, Italy)

4-P-8 **Contribution of Pressure and/or Shear Stress for Crystallization Behaviors in Injection Molding** H. Ito, K. Minagawa*, J. Takimoto*, K. Tada** and K. Koyama* (Tsuruoka National College of Tech., *Yamagata Univ. and **Plamedia Research, Japan)

Polymer Blends and Alloys

8-P-1 **Properties of Linear and Dynamically Vulcanized LLDPE/EPDM Blends** Gue-Whuen Kim, Won Jei Cho, and Chang-Sik Ha (Pusan National Univ., Korea)

8-P-2 **Thermal Behaviour Studies of Polyarylate/Copolyester Blends** T.S. Oh, B.K. Jeong and J.H. Ryou (RIST, Korea)

8-P-3 **Transesterification Reaction of Polyarylate/Copolyester Blends** T.S. Oh, B.K. Jeong and J.H. Ryou (RIST, Korea)

8-P-4 **Morphology and Tensile Strength of Liquid Crystalline Copolyester/Thermoplastic Blends** Kilwon Cho and Noh-Cheol Park (Pohang Univ. of Science and Tech., Korea)

8-P-5 **Morphology Development via Reaction-Induced Phase Separation in Epoxy/Poly(ether sulfone) Blends: Morphology Control using Poly(ether sulfone)with Functional End-Group** Bong Sup Kim and T. Inoue* (Korea Research Inst. of Chem. Tech., Korea and *Tokyo Inst. of Tech., Japan)

8-P-6 **Orientation and Properties of Extrudates for TLCP/PC Blends** Y.S. Kim and J.W. Lee (Sogang Univ., Korea)

8-P-7 **Physical Properties and Microstructures of the Thermoplastic Polyurethane Blends** Y.B. Ban, S. Lee, J.H. Kwak, K.N. Lee, J.W. Lee* and J.S. Choi (Dongsung Chemical and *Sogang Univ., Korea)

8-P-8 **Effect of Flame Retardant on PC/ABS Alloy System** S.H. Park, H.J. Choi*, J.K. Kim** and J.I. Jun***(Sunkyong Industries, *Inha Univ., **Gyeongsang National Univ. and ***Cheil Industries, Korea)

8-P-9 **Brittle-Ductile Transition in Ternary Blend Systems** S. Yang, K. Char, J.C. Lim*, and H. Kim* (Seoul National Univ. and *Cheil Industries, Korea)

8-P-10 **Polyamide/Polysulfone/COOH-functional Polysulfone Blends: Synthesis of the Reactive Polymer and Consequences of the Reaction on the Morphology, and Mechanical Properties** Ph. Maréchal, T. Chiba, T. Inoue, M. Weber* and E. Koch** (Tokyo Inst. of Tech., Japan, *BASF, Germany and **BASF, Japan)

8-P-11 **Novel Blends for Moulding Compounds Using the Concept of Partial Compatibility** S.F. Bush, J.M. Methven, D.R. Blackburn and M. Esfandeh (UMIST, UK)

8-P-12 **Properties of Amorphous Nylon and Polyester Blends** T.K. Kang*, H.I. Kim*, W.J. Cho, Y. Kim and C.S. Ha (Pusan National Univ. and *Daelim Industrial, Korea)

8-P-13 **Effect of Reactive Compatibilizer on Thermal and Mechanical Properties of PA/PC Blends** H.K. Choi, Y.M. Lee, M.W. Lee, H.S. Kim, S. Horiuchi*, T. Hatakeyama* and T. Kitano* (NITI, Korea and *NIMCR, Japan)

8-P-14 **Studies in Polycarbonate Polystyrene Blends** D.A. Walhekar, D.D. Kale and S. Satish* (Univ. of Bombay and *Indian Petrochemical, India)

8-P-15 **A Study on Compatibility of PU/PVA Blends** M. Zhu, D. Chen, H. Zhou and Y. Chen (China Textile Univ., PRC)