



# The Society of Rheology 75th Annual Meeting - Pittsburgh, Pennsylvania

## Meeting Schedule

Monday, October 13, 2003					Tuesday, October 14, 2003					Wednesday, October 15, 2003					Thursday, October 16, 2003				
8:30		R. B. Bird (PL1)			8:30		G. Marrucci (PL2)			8:30		A. B. Metzner (PL3)			8:05	SM42	BR10	ER1	LC19
9:20		Coffee			9:20		Coffee			9:20		Coffee			8:30	SM43	BR11	ER2	LC20
9:45	SM1	VF1	RS1	MM1	9:45	SM15	VF15	EA1	MM15	9:45	SM28	VF28	EA14	LC5	8:55	SM44	BR12	ER3	LC21
10:10	SM2	VF2	RS2	MM2	10:10	SM16	VF16	EA2	MM16	10:10	SM29	VF29	EA15	LC6	9:20	SM45	BR13	ER4	LC22
10:35	SM3	VF3	RS3	MM3	10:35	SM17	VF17	EA3	MM17	10:35	SM30	VF30	EA16	LC7	9:45		Coffee		
11:00	SM4	VF4	RS4	MM4	11:00	SM18	VF18	EA4	MM18	11:00	SM31	VF31	EA17	LC8	10:10	SM46	BR14	ER5	LC23
11:25	SM5	VF5	RS5	MM5	11:25	SM19	VF19	EA5	MM19	11:25	SM32	VF32	EA18	LC9	10:35	SM47	BR15	ER6	LC24
11:50		Lunch			11:50		Lunch			11:50		Lunch			11:00	SM48	BR16	ER7	LC25
1:30	SM6	VF6	RS6	MM6	1:30	SM20	VF20	EA6	MM20	1:30	SM33	BR1	EA19	LC10	11:25	SM49	BR17	ER8	LC26
1:55	SM7	VF7	RS7	MM7	1:55	SM21	VF21	EA7	MM21	1:55	SM34	BR2	EA20	LC11	11:50	SM50	BR18	ER9	LC27
2:20	SM8	VF8	RS8	MM8	2:20	SM22	VF22	EA8	MM22	2:20	SM35	BR3	EA21	LC12	12:15		End		
2:45	SM9	VF9	RS9	MM9	2:45	SM23	VF23	EA9	MM23	2:45	SM36	BR4	EA22	LC13					
3:10		Coffee			3:10		Coffee			3:10		Coffee							
3:35	SM10	VF10	RS10	MM10	3:35	SM24	VF24	EA10	LC1	3:35	SM37	BR5	EA23	LC14					
4:00	SM11	VF11	RS11	MM11	4:00	SM25	VF25	EA11	LC2	4:00	SM38	BR6	EA24	LC15					
4:25	SM12	VF12	RS12	MM12	4:25	SM26	VF26	EA12	LC3	4:25	SM39	BR7	EA25	LC16					
4:50	SM13	VF13	RS13	MM13	4:50	SM27	VF27	EA13	LC4	4:50	SM40	BR8	EA26	LC17					
5:15	SM14	VF14	RS14	MM14	5:15		End			5:15	SM41	BR9	EA27	LC18					
5:40		End			5:30		Business Meeting			5:40		End							
7:00		Awards Reception			7:00		Tuesday Night Reception			6:00		Poster Session & Refreshments							
8:00		Awards Banquet																	

### Session Codes

BR = Biorheology  
 EA = Entangled Polymers and Analytical Rheology  
 ER = Extensional Rheology

LC = Liquid Crystalline Polymers and Self-Assembling Fluids  
 MM = Microrheology, Microfluids and MEMS  
 PL = Plenary Lectures

RS = Rheology of Solids and Near-Solids  
 SM = Suspension and Multiphase Fluids  
 VF = Viscoelastic Flows and Instabilities

# Monday, October 13

## Morning

8:30 **PL1.** Dumbbells, trumbbells, shishkebabs, and pearl necklaces — a gallimaufry of results. R. B. Bird Grand Station I/II  
9:20 COFFEE

### Grand Station I

#### Suspension & Multiphase Fluids

- 9:45 **SM1.** Effect of film formation on tack of waterborne adhesives. M. S. Tirumkudulu, W. B. Russel and T. J. Huang
- 10:10 **SM2.** Soft colloid-polymer mixtures: Kinetic transitions and osmotic interactions. E. Stiakakis, G. Petekidis, D. Vlassopoulos and J. Roovers
- 10:35 **SM3.** Shear thickening of attractive particles in suspensions and gels. V. Gopalakrishnan and C. F. Zukoski
- 11:00 **SM4.** Shear induced anisotropy in reversibly aggregated suspensions. H. Hoekstra, J. Vermant, J. Mewis and T. Narayanan
- 11:25 **SM5.** The rheology of model polyampholyte stabilized colloidal dispersions: Comparison of experiments and theory. L.-N. Krishnamurthy, D. C. Boris and N. J. Wagner

### Grand Station III

#### Viscoelastic Flows & Instabilities

- VF1.** Monte Carlo simulation of uniaxial extension of dilute polymer solutions. X. Li and M. M. Denn
- VF2.** Self-consistent Brownian dynamics simulation of rheology of polymer blends. V. Ganesan, V. Pryamitsyn and B. Narayanan
- VF3.** Brownian dynamics simulations with hydrodynamic interaction for polystyrene solutions in extensional and shear flow. C.-C. Hsieh and R. G. Larson
- VF4.** Effects of spring connector force laws on viscosity and macromolecular extension in steady shear flow of dilute solutions of bead-and-spring polymer chains. G. Pan and C. W. Manke
- VF5.** Cost-effective, multi-mode FENE bead-spring models for dilute polymer solutions. R. Akhavan, Q. Zhou and J. Liu

### Grand Station IV

#### Rheology of Solids & Near-Solids

- RS1.** Elastic instabilities in rubber: Aneurysms, wrinkles and knots. A. N. Gent
- RS2.** Rheo-dielectric behavior of poly(ethylene oxide) containing lithium perchlorate. Y. Matsumiya, N. P. Balsara and H. Watanabe
- RS3.** Normal-stress differences and the detection of disclinations in nematic elastomers. E. Fried
- RS4.** Non-universality of elastic exponents in random bond-bending networks. D. A. Head, F. C. MacKintosh and A. J. Levine
- RS5.** Stress and birefringence relaxation in end-linked elastomers with pendent chains. A. Batra, M. Chaouche, C. Cohen and L. A. Archer

### Grand Station V

#### Microrheology, Microfluids & MEMS

- MM1.** Geometrically mediated breakup of drops in microfluidic devices. D. R. Link, S. L. Anna, D. Weitz and H. A. Stone
- MM2.** Microfluidic analogue of the 4-roll mill: Pressure-driven flow devices with adjustable flow type. S. D. Hudson, F. R. Phelan and J. T. Cabral
- MM3.** Velocity profiles in circular microchannels with hydrophobic and hydrophilic surfaces. L. E. Rodd, S. T. Huntington, K. Lytikainen, D. V. Boger and J. J. Cooper-White
- MM4.** Breakup of a fluid in a confined geometry. J. F. Douglas, N. S. Martys and J. G. Hagedorn
- MM5.** Oscillatory behavior and pattern formation in binary fluids flowing in patterned microchannels. O. Kuksenok, D. Jasnow, J. Yeomans and A. Balazs

11:50 LUNCH

## Afternoon

### Grand Station I

#### Suspension & Multiphase Fluids

- 1:30 **SM6.** Rheology and microrheology of microgels and compressed emulsions. E. Pashkovski, L. Cipelletti, S. Manley and D. Weitz

### Grand Station III

#### Viscoelastic Flows & Instabilities

- VF6.** Dilute polymer flow incorporating slippage and polymer migration: Model formulation and predictions. L. P. Cook and L. Rossi

### Grand Station IV

#### Rheology of Solids & Near-Solids

- RS6.** Physical aging of an epoxy glass-former after one- and two-step relative humidity and temperature jumps. Y. Zheng, R. D. Priestley and G. B. McKenna

### Grand Station V

#### Microrheology, Microfluids & MEMS

- MM6.** Flow control in microenvironments based on micellization in triblock copolymer solutions. B. Stoeber, D. Liepmann and S. J. Muller

1:55	<b>SM7.</b> Structure in concentrated colloidal gels: Relation to interparticle potential and effect of shear flow. <u>S. L. Elliott</u> , <u>R. J. Butera</u> and <u>N. J. Wagner</u>	<b>VF7.</b> Flow stability of sparsely branched metallocene-catalyzed polyethylenes. <u>D. G. Baird</u> , <u>M. J. Bortner</u> and <u>P. J. Doeringhaus</u>	<b>RS7.</b> Structural recovery response of an epoxy resin after carbon dioxide pressure-jumps: Intrinsic isopiestic, asymmetry of approach and memory effects. <u>M. Alcoutlabi</u> , <u>L. Banda</u> and <u>G. B. McKenna</u>	<b>MM7.</b> Strategies for passive fluid mixing in microchannels. <u>J. A. Pathak</u> , <u>D. Ross</u> and <u>K. B. Migler</u>
2:20	<b>SM8.</b> Yielding and rearrangements in colloidal glasses with varying interparticle interactions. <u>G. Petekidis</u> , <u>F. Ozon</u> , <u>D. Vlassopoulos</u> , <u>M. Ballauff</u> and <u>P. N. Pusey</u>	<b>VF8.</b> The relationship of pressure sensitive adhesive rheology to high speed label converting processes. <u>E. G. Melby</u> , <u>S. Agarwal</u> and <u>R. K. Gupta</u>	<b>RS8.</b> Rheology of cohesive granular materials: Flow down an incline. <u>R. C. Brewster</u> , <u>L. E. Silbert</u> and <u>A. J. Levine</u>	<b>MM8.</b> Migration of a complex structured particle in Newtonian fluid. <u>M. Makino</u> and <u>M. Doi</u>
2:45	<b>SM9.</b> Structure and dynamics of hard fractal nanoparticle suspension. <u>W. E. Smith</u> and <u>C. F. Zukoski</u>	<b>VF9.</b> Persistence of straining and flow classification. <u>R. L. Thompson</u> and <u>P. R. Souza Mendes</u>	<b>RS9.</b> Forces in granular hopper flow. <u>J. W. Landry</u> and <u>G. Grest</u>	<b>MM9.</b> From two-point microrheology to cell mechanics. <u>J. C. Crocker</u> , <u>B. D. Hoffman</u> and <u>G. Massiera</u>
3:10			COFFEE	
3:35	<b>SM10.</b> Shear controlled aggregation and break-up in suspensions, studied with video microscopy. <u>M. H. Duits</u> , <u>V. A. Tolpekin</u> , <u>D. van den Ende</u> and <u>J. Mellema</u>	<b>VF10.</b> Structure formation in drag reducing polymer solutions. <u>M. Liberatore</u> and <u>A. J. McHugh</u>	<b>RS10.</b> Characterization of cured and uncured highly filled polymers using the new SER extensional rheometer fixture. <u>M. Sentmanat</u>	<b>MM10.</b> A microbubble method to measure biaxial creep of nanometer thickness films. <u>P. A. O'Connell</u> and <u>G. B. McKenna</u>
4:00	<b>SM11.</b> Rheology and microstructure of sterically stabilized, acicular precipitated calcium carbonate dispersions and the shear thickening behavior. <u>R. G. Egres</u> and <u>N. J. Wagner</u>	<b>VF11.</b> The effect of rheological properties in viscoelastic turbulent channel flow. <u>K. D. Housiadas</u> and <u>A. N. Beris</u>	<b>RS11.</b> On the implementation of time-temperature superposition. <u>S. Varghese</u> and <u>D. A. Hill</u>	<b>MM11.</b> Surface dynamics in semi-crystalline polymer films. <u>K. Tanaka</u> , <u>A. Sakai</u> , <u>A. Takahara</u> and <u>T. Kajiyama</u>
4:25	<b>SM12.</b> Rheological properties and flow-small angle neutron scattering of stable dispersions of nanoparticles at high shear rates. <u>Y. S. Lee</u> and <u>N. J. Wagner</u>	<b>VF12.</b> Interpretation of Virk phenomenonology for polymer turbulent drag reduction. <u>R. G. Larson</u> and <u>A. Roy</u>	<b>RS12.</b> A rheological investigation of the phase transition behaviour of thermoplastic polyurethanes. <u>D. Nichetti</u> and <u>N. Grizzuti</u>	<b>MM12.</b> Nanorheology using the atomic force microscope. <u>P. M. McGuiggan</u> and <u>D. J. Yarusso</u>
4:50	<b>SM13.</b> Kinematic shock waves in colloidal suspensions. <u>M. Kilfoil</u> and <u>D. Weitz</u>	<b>VF13.</b> Polymer chain dynamics and turbulent bursts: A mechanism of drag reduction. <u>V. Gupta</u> , <u>C. Li</u> , <u>R. Sureshkumar</u> and <u>B. Khomami</u>	<b>RS13.</b> Cooperative dynamics in glass-forming liquids. <u>B. M. Erwin</u> , <u>R. H. Colby</u> and <u>S. K. Kumar</u>	<b>MM13.</b> Rheology and birefringence at high shear rates. <u>K. S. Mriziq</u> , <u>M. D. Dadmun</u> and <u>H. D. Cochran</u>
5:15	<b>SM14.</b> Direct visualization of shear-induced colloidal crystallization by confocal laser scanning microscopy. <u>T. Solomon</u> and <u>M. Solomon</u>	<b>VF14.</b> Interactions between polymer rheology and turbulent coherent structures in drag-reducing fluids. <u>P. A. Stone</u> and <u>M. D. Graham</u>	<b>RS14.</b> Role of molecular tacticity on the crystal structure and plastic deformation behavior of semi-syndiotactic polypropylenes. <u>M. Sevegney</u> , <u>G. Parthasarthy</u> , <u>R. M. Kannan</u> and <u>A. Siedle</u>	<b>MM14.</b> A novel rheometer plate fabricated using MEMS processes for accurate measurements of $N_1$ and $N_2$ . <u>S.-G. Baek</u> and <u>J. J. Magda</u>
5:40			END	
7:00			AWARDS RECEPTION Reflections/Waterfront	
8:00			AWARDS BANQUET Admiral	

# Tuesday, October 14

## Morning

8:30 **PL2.** The nonlinear response of entangled polymers. Does theory explain all the facts? *G. Marrucci and G. Ianniruberto* Grand Station I/II  
 9:20 COFFEE

	<i>Grand Station I</i> Suspension & Multiphase Fluids	<i>Grand Station III</i> Viscoelastic Flows & Instabilities	<i>Grand Station IV</i> Entangled Polymers & Analytical Rheology	<i>Grand Station V</i> Microrheology, Microfluids & MEMS
9:45	<b>SM15.</b> Stability of cocontinuous polymer blends. <i>J. A. Galloway and C. W. Macosko</i>	<b>VF15.</b> Modeling 3-D viscoelastic flows with free surfaces and interfaces. <i>X. Xie, K. Zygorakis and M. Pasquali</i>	<b>EA1.</b> Dielectric and viscoelastic behavior of polyisoprene blends: Test of tube dilation mechanism. <i>H. Watanabe and S. Ishida</i>	<b>MM15.</b> Shear and extensional microrheometry of protein solutions and other complex biofluids. <i>C. Clasen, N. Kojic, J. Bico and G. H. McKinley</i>
10:10	<b>SM16.</b> Thermodynamic modeling of polymer blends with matrix phase viscoelasticity. <i>B. J. Edwards and M. Dressler</i>	<b>VF16.</b> A numerical study of viscoelastic free surface flows using the finite element method – Hele Shaw cell flows. <i>G. Bhatara, E. Shaqfeh and B. Khomami</i>	<b>EA2.</b> Constitutive transition in strong flow of entangled polymeric fluids. <i>P. Tapadia and S.-Q. Wang</i>	<b>MM16.</b> DNA dynamics in a microchannel: Confinement, hydrodynamic interactions and shear-induced migration. <i>R. M. Jendrejack, J. J. de Pablo and M. D. Graham</i>
10:35	<b>SM17.</b> Shear behavior of attractive and repulsive emulsions: Relationship of attractive forces, negative normal stresses, and vorticity alignment. <i>A. Montesi, A. Peña and M. Pasquali</i>	<b>VF17.</b> Modeling free boundary flows in wire coating and pipe extrusion. <i>A. Hade and J. Giacomin</i>	<b>EA3.</b> Stress relaxation measurement following step strains in entangled linear polymer liquids. <i>D. Venerus</i>	<b>MM17.</b> Flow-induced interfacial nanostructures by dip coating micellar solutions. <i>A. Shen</i>
11:00	<b>SM18.</b> Extension of the Maffettone and Minale model to predict effects of high order in capillary number. <i>M. Minale</i>	<b>VF18.</b> Molecular architecture controls misting in roll coating. <i>M. S. Owens, C. W. Macosko and L. E. Scriven</i>	<b>EA4.</b> A reptation model without an excluded volume constraint. <i>F. Xu, M. M. Denn and J. D. Schieber</i>	<b>MM18.</b> Dynamics of single polymer collisions in microfluidic devices. <i>G. C. Randall and P. Doyle</i>
11:25	<b>SM19.</b> Drop dynamics with non-Newtonian liquids under shear flow: Phenomenological model and experimental results. <i>P. L. Maffettone, F. Greco, S. Guido and M. Simeone</i>	<b>VF19.</b> Flow instabilities near soft elastic solids: Linear and nonlinear behavior. <i>V. Gkanis, M. Eggert and S. Kumar</i>	<b>EA5.</b> A rigorous approach to the dynamics of entangled polymer melts. <i>M. A. Tchesnokov, J. Molenaar and J. J. Slot</i>	<b>MM19.</b> Single molecule visualization of DNA in pressure-driven flow in a rectangular microchannel. <i>C. K. Smith, R. Duggal and M. Pasquali</i>
11:50	LUNCH			

## Afternoon

	<i>Grand Station I</i> Suspension & Multiphase Fluids	<i>Grand Station III</i> Viscoelastic Flows & Instabilities	<i>Grand Station IV</i> Entangled Polymers & Analytical Rheology	<i>Grand Station V</i> Microrheology, Microfluids & MEMS
1:30	<b>SM20.</b> Effect of compatibilization on the deformation and breakup of droplets in polymer blends. <i>E. Van Hemelrijck, P. Van Puyvelde and P. Moldenaers</i>	<b>VF20.</b> Modeling of fast contraction flows of polymers. <i>J.-H. Jeong and A. I. Leonov</i>	<b>EA6.</b> A sliplink model with self consistent constraint release. <i>J. D. Schieber and D. Nair</i>	<b>MM20.</b> Dynamics of the interfacial layer between a flowing polymer melt and a solid wall. <i>M. A. Tchesnokov, J. Molenaar and J. J. Slot</i>

1:55	<b>SM21.</b> Drop breakup in shear flow. <u>V. Cristini</u>	<b>VF21.</b> Modeling and simulation of polymer degradation in contraction flow. <u>I. B. Owusu and Y. L. Joo</u>	<b>EA7.</b> Developing useful phenomenological rheology models with physically meaningful parameters. <u>C. P. Lusignan</u>	<b>MM21.</b> Probe surface chemistry and particle size dependence of microrheological measurements in F-actin. <u>B.-S. Chae and E. M. Furst</u>
2:20	<b>SM22.</b> A new mechanism for drop breakup in emulsions under shear. <u>X. F. Zhao and J. L. Goveas</u>	<b>VF22.</b> Parallel shear flow of a fluid with pressure dependent viscosity. <u>M. Renardy</u>	<b>EA8.</b> Nonresonant mechanical hole burning spectroscopy to study dynamic heterogeneity in polymers. <u>X. F. Shi and G. B. McKenna</u>	<b>MM22.</b> Membrane and interfacial microrheology. <u>A. J. Levine and F. C. MacKintosh</u>
2:45	<b>SM23.</b> Modeling coalescence, breakup and relaxation of polymer droplets. <u>A. A. Leyrat, M. Brizard, C. Verdier, T. Biben and C. Misbah</u>	<b>VF23.</b> Characterization and control of sharkskin instability through localized thermal modification. <u>E. Miller and J. P. Rothstein</u>	<b>EA9.</b> Dynamical properties of hairy wormlike micelles. <u>G. Massiera, L. Ramos and C. Ligoure</u>	<b>MM23.</b> Investigating stress fluctuations and active behavior of living cells. <u>B. D. Hoffman, A. W. Lau, T. C. Lubensky and J. C. Crocker</u>
3:10	COFFEE			
3:35	<b>SM24.</b> Large scale hydrodynamic simulations of emulsions and foams. <u>J. L. Higdon and M. S. Talbot</u>	<b>VF24.</b> Constitutive origin of sharkskin-like melt fracture: An update. <u>Z. Zhu and S.-Q. Wang</u>	<b>EA10.</b> Relaxation dynamics of entangled cis-polyisoprene physisorbed at surfaces. <u>Q. Zhang and L. A. Archer</u>	<b>LC1.</b> Kinetics of shear banding in wormlike micellar solutions probed by simultaneous rheometry and particle image velocimetry. <u>Y. T. Hu</u>
4:00	<b>SM25.</b> A constitutive equation for highly viscous foam. <u>M. Doi and A. M. Kraynik</u>	<b>VF25.</b> The gas-assisted full slip extrusion of molten polyethylene. <u>R. Liang and M. R. Mackley</u>	<b>EA11.</b> Pressure dependent viscosities and dissipation heating in high shear rate capillary rheometry. <u>H. M. Laun</u>	<b>LC2.</b> Study of the shear banding in wormlike micellar solutions using NMR. <u>M. R. López González, P. Photinos and P. T. Callaghan</u>
4:25	<b>SM26.</b> Rheological study of injection-molded LDPE foams. <u>X. Chen, M.-C. Heuzey and P. J. Carreau</u>	<b>VF26.</b> Negative wake and velocity discontinuity of a bubble rising in a viscoelastic fluid. <u>S. Pillapakkam and P. Singh</u>	<b>EA12.</b> The effects of supercritical CO <sub>2</sub> and pressure on the rheological properties of a molten polyethylene. <u>H. E. Park and J. M. Dealy</u>	<b>LC3.</b> Tuning rheological properties of cationic surfactant solutions by varying solvent polarity, temperature and counterion concentration. <u>Y. Zhang, J. Schmidt, Y. Talmon and J. Zakin</u>
4:50	<b>SM27.</b> Stability of "solid-stabilized" emulsions. <u>G. G. Fuller and E. Stancik</u>	<b>VF27.</b> The influence of elasticity on the drop formation and spraying processes. <u>H. Shore, G. Park and G. M. Harrison</u>	<b>EA13.</b> Fast oscillation. <u>S. W. Race, K. Hedman and B. C. Mei</u>	<b>LC4.</b> Transient extensional rheology of wormlike micelle solutions. <u>J. P. Rothstein</u>
5:15	END			
5:30	BUSINESS MEETING Grand Station III			
7:00	TUESDAY NIGHT RECEPTION River Cruise and Dinner			

# Wednesday, October 15

## Morning

8:30	<b>PL3.</b> Development of the science of rheology since its formal inception. <i>A. B. Metzner</i> Grand Station I/II			
9:20	COFFEE			
	<b>Grand Station I</b>	<b>Grand Station III</b>	<b>Grand Station IV</b>	<b>Grand Station V</b>
	<b>Suspension &amp; Multiphase Fluids</b>	<b>Viscoelastic Flows &amp; Instabilities</b>	<b>Entangled Polymers &amp; Analytical Rheology</b>	<b>Liquid Crystalline &amp; Self-Assembling</b>
9:45	<b>SM28.</b> Effect of the rheology of the suspending fluid on string formation in suspensions. <i>J. Vermant, R. Scirocco and J. Mewis</i>	<b>VF28.</b> Electrification of linear polyethylenes melts under stable and unstable flow. <i>J. Pérez-González and L. de Vargas</i>	<b>EA14.</b> Solution rheology of entangled polymer mixtures. <i>S. Wang, S.-Q. Wang, A. Halasa, W.-L. Hsu, J. P. Zhou and R. P. Quirk</i>	<b>LC5.</b> Sharp-interface description of isotropic-nematic phase transitions. <i>E. Fried</i>
10:10	<b>SM29.</b> Jamming in concentrated suspensions. <i>K. M. Knipmeyer and D. J. Pine</i>	<b>VF29.</b> An optimal control formulation for identifying rheological parameters of elastic fluids. <i>M. F. Naccache, F. A. Rochinha and R. L. Thompson</i>	<b>EA15.</b> Rheological characterization of polymer melts with narrow molecular weight distribution. <i>D. Venerus and T. Schweizer</i>	<b>LC6.</b> Regular and chaotic rheological behavior of tumbling nematic liquid crystals. <i>S. Hess</i>
10:35	<b>SM30.</b> Direct simulations of particle suspensions of Oldroyd-B fluids in sliding bi-periodic domains: Rheology and microstructural development. <i>W. R. Hwang, M. A. Hulsen and H. H. Meijer</i>	<b>VF30.</b> Tests of time-dependent viscoelastic flow simulations of a shear thinning fluid using axisymmetric flow birefringence. <i>J. Bryant and W. Burghardt</i>	<b>EA16.</b> Effects of polydispersity on the rheological properties of entangled polystyrene solution. <i>X. Ye and T. Sridhar</i>	<b>LC7.</b> Structure phenomena of nematic polymers flowing between parallel plates. <i>M. G. Forest, Q. Wang, H. Zhou and R. Zhou</i>
11:00	<b>SM31.</b> Diffusivities and front propagation in sedimentation. <i>P. J. Mucha and M. P. Brenner</i>	<b>VF31.</b> Role of inertia and gap temperature on the thermoelastic instability in Taylor-Couette flow. <i>D. Thomas, R. Sureshkumar and B. Khomami</i>	<b>EA17.</b> Effect of molecular architecture on the rheology of polymer blends: Birefringence and rheo-FTIR. <i>S. B. Kharchenko and R. M. Kannan</i>	<b>LC8.</b> Multiscale modeling of liquid crystal polymers through kinetic and phenomenological approaches. <i>Q. Wang, M. C. Calderer and M. G. Forest</i>
11:25	<b>SM32.</b> Spin viscosity in suspensions. <i>S. Feng, A. Graham, J. Abbott and H. Brenner</i>	<b>VF32.</b> Purely elastic instabilities in non-viscometric viscoelastic flows. <i>B. Sadanandan and R. Sureshkumar</i>	<b>EA18.</b> Diffusion and rheology of entangled binary mixtures. <i>S. Wang, E. von Meerwall, S.-Q. Wang, A. Halasa, W.-L. Hsu, J. P. Zhou and R. P. Quirk</i>	<b>LC9.</b> A diffuse-interface method for simulating the deformation and retraction of liquid crystalline drops. <i>P. Yue, J. J. Feng, C. Liu, J. Shen and C. Zhou</i>
11:50	LUNCH			

## Afternoon

	<b>Grand Station I</b>	<b>Grand Station III</b>	<b>Grand Station IV</b>	<b>Grand Station V</b>
	<b>Suspension &amp; Multiphase Fluids</b>	<b>Biorheology</b>	<b>Entangled Polymers &amp; Anal. Rheology</b>	<b>Liquid Crystalline &amp; Self-Assembling</b>
1:30	<b>SM33.</b> Nonlocal electrostatics and structural coarsening in electrorheological fluids. <i>D. Klingenberg and J. F. Morris</i>	<b>BR1.</b> Mechanical properties of living cells measured by magnetic twisting cytometry. <i>G. Massiera and J. C. Crocker</i>	<b>EA19.</b> Theoretical modeling of the conformation of entangled linear polymers under rapid flow as measured by small angle neutron scattering. <i>R. S. Graham, A. E. Likhtman, T. C. McLeish, T. M. Nicholson, D. J. Read and O. G. Harlen</i>	<b>LC10.</b> Rheology of multi-component rod-like micellar solutions. <i>P. Pimenta, J. Gambogi and E. Pashkovski</i>

1:55	<b>SM34.</b> Steady and transient shear flow of magnetic dispersions: Structure and rheology. <i>M. Piao, A. M. Lane and J. M. Wiest</i>	<b>BR2.</b> Microrheology and adhesion in cellular systems. <i>A. A. Leyrat, E. Canetta, R. Chotard-Ghodsnia, C. Verdier and A. Duperray</i>	<b>EA20.</b> Predicting the viscosity of a miscible polymer blend. <i>T. P. Lodge and J. C. Haley</i>	<b>LC11.</b> Unusually slow reheat of rheology and structure in some viscoelastic micellar fluids. <i>G. C. Kalur and S. R. Raghavan</i>
2:20	<b>SM35.</b> Magnetorheological suspensions: Rheology and applications in controllable energy absorption. <i>S. S. Deshmukh and G. H. McKinley</i>	<b>BR3.</b> Affine versus nonaffine deformations of semiflexible polymer networks. <i>D. A. Head, A. J. Levine and F. C. MacKintosh</i>	<b>EA21.</b> Predicting rheological behavior of polymer melts using a coupled relaxation mode model. <i>B. Jiang, P. A. Kamekar, D. J. Keffer and B. J. Edwards</i>	<b>LC12.</b> The microstructure and rheology of mixed cationic/anionic wormlike micelles. <i>B. A. Schubert, N. J. Wagner and E. W. Kaler</i>
2:45	<b>SM36.</b> Induced particle aggregation in suspensions: Effect on rheological properties. <i>F. E. Filisko, R. Lynch and Y. Meng</i>	<b>BR4.</b> Micromechanics of self-assembling peptides. <i>T. Savin and P. Doyle</i>	<b>EA22.</b> Linear melt rheology of Cayley trees, combs and star-combs. <i>D. Vlassopoulos, M. Kapnistos, J. Roovers, I. Halary, N. Hadjichristidis and R. J. Blackwell</i>	<b>LC13.</b> Stepping at steady state: The kinetics of onion formation. <i>G. M. Wilkins and P. D. Olmsted</i>
3:10			COFFEE	
3:35	<b>SM37.</b> Rheology of multi-walled carbon nanotube suspensions. <i>E. K. Hobbie, S. Lin-Gibson, H. Wang, J. A. Pathak and E. Grulke</i>	<b>BR5.</b> Parameter-free predictions of the behavior of dilute polymer solutions in extensional flows: Comparison with experiment. <i>R. Prabhakar and J. Ravi Prakash</i>	<b>EA23.</b> Linear and nonlinear relaxation dynamics of entangled branched polymers. <i>J. Juliani and L. A. Archer</i>	<b>LC14.</b> Effect of complex flow kinematics on the molecular orientation distribution in injection molding of liquid crystalline copolyesters. <i>W. Burghardt, S. Rendon and R. Bubeck</i>
4:00	<b>SM38.</b> Orientation effects on the capillary instabilities for thin liquid crystalline fibers embedded in a flexible polymer matrix. <i>J. Wu and P. T. Mather</i>	<b>BR6.</b> Conformational and stress relaxation of initially straight flexible polymers. <i>P. Dimitrakopoulos</i>	<b>EA24.</b> The effect of polydispersity on the rheology of branched polymer melts using the "hierarchical model". <i>S. J. Park and R. G. Larson</i>	<b>LC15.</b> Continuous preparation and characterisation of thermoplastic/carbon nanotube composites. <i>C. A. Bernardo, J. A. Covas, O. S. Carneiro, J. M. Maia, F. W. van Hattum, I. Kiricsi, L. Biró and Z. Horvath</i>
4:25	<b>SM39.</b> Experiments and modeling for a time dependent thixotropic suspension. <i>R. R. Rao, D. B. Adolf and L. A. Mondy</i>	<b>BR7.</b> On the coarse-graining of DNA and other polymers into bead-spring chains. <i>P. T. Underhill and P. Doyle</i>	<b>EA25.</b> Hyperbranched polymer rheology. <i>J. M. Pristera, R. H. Colby, T. Long and S. Unal</i>	<b>LC16.</b> Lyotropic nematic dispersions of single-walled carbon nanotubes in strong acids. <i>V. A. Davis, N. G. Parra-Vasquez, L. M. Ericson and M. Pasquali</i>
4:50	<b>SM40.</b> Collision efficiency of orthokinetic agglomeration of particulate suspensions subjected to polymer bridging flocculation. <i>S. Agarwal, R. K. Gupta and D. Doraiswamy</i>	<b>BR8.</b> Stress and configuration relaxation of initially straight stiff polymers. <i>P. Dimitrakopoulos and I. D. Dissanayake</i>	<b>EA26.</b> An examination of entangled star polymers under shear flow using birefringence. <i>A. K. Tezel and L. G. Leal</i>	<b>LC17.</b> Shear rheology of a hydroxypropylcellulose melt in the anisotropic and isotropic states. <i>E. S. Scribber, D. G. Baird and T. S. Wilson</i>
5:15	<b>SM41.</b> Nanoparticles induced non-Einstein like behavior of polymer melts. <i>A. Tuteja, M. E. Mackay and C. J. Hawker</i>	<b>BR9.</b> Transition from flow-aligning to buckling in shear flows of dilute semiflexible polymers. <i>M. Pasquali, C. Wiggins and A. Montesi</i>	<b>EA27.</b> Effects of polydispersity and branch-point motion on the rheology of entangled polymers. <i>S. Shanbhag and R. G. Larson</i>	<b>LC18.</b> Effect of high electric fields on the isotropic phase of a lyotropic liquid crystalline system. <i>T. J. Menna and F. E. Filisko</i>
5:40			END	
6:00			POSTER SESSION & REFRESHMENTS	Reflections/Waterfront

# Thursday, October 16

## Morning

### Grand Station I

#### Suspension & Multiphase Fluids

- 8:05 **SM42.** Rheology of highly concentrated particle-liquid systems. R. G. Morgan and J. F. Morris
- 8:30 **SM43.** Visco-elastic surfactant fluids as particle transport media for hydraulic fracturing operations. P. F. Sullivan, H. Huang and E. Nelson
- 8:55 **SM44.** Characterization of bauxite residue for neutralization of acid mine drainage. E. M. Humiston
- 9:20 **SM45.** Influence of filler-content on rheology of non-aqueous dispersions. R. Gummaraju, K. Vance and H. Plaumann
- 9:45
- 10:10 **SM46.** Rheological behavior of polystyrene (PS) with incorporation of hybrid polyhedral oligosilsesquioxane (POSS). J. Wu, T. S. Haddad and P. T. Mather
- 10:35 **SM47.** Morphological effects of tethered and untethered polyhedral oligosilsesquioxanes (POSS) on the viscometric and linear viscoelastic properties of PMMA. E. T. Kopesky, G. H. McKinley, R. E. Cohen and T. S. Haddad
- 11:00 **SM48.** Rheology of polyamide-6/clay based layered silicate nanocomposites. R. K. Ayver and A. I. Leonov
- 11:25 **SM49.** Rheo-dielectric studies of the aggregation of submicron TiO<sub>2</sub> suspended in polyethylene. T. Hao and R. E. Riman

### Grand Station III

#### Biorheology

- BR10.** Kinetics of helix reversion and physical gelation of gelatin. R. H. Colby, L. Guo and C. P. Lusignan
- BR11.** Evolution of microstructure and rheology in mixed biopolymer systems. V. Pai, M. Srinivasarao and S. A. Khan
- BR12.** Rheology of hagfish mucins. S. A. Melotti, G. J. Braithwaite, D. S. Fudge and J. M. Gosline
- BR13.** Heart-valve mechanics: Elastic and viscoelastic. E. Barber, E. Carew, T. C. Doehring, D. R. Einstein, A. D. Freed and I. Vesely
- BR14.** Influence of hydrodynamic interactions on the coil-stretch transition of polymers in extensional and mixed flows. C. M. Schroeder, E. Shaqfeh and S. Chu
- BR15.** Molecular conformation of DNA in free-surface flows of dilute solutions. R. Duggal and M. Pasquali
- BR16.** Electrophoretic dynamics of large DNA stars. D. Heuer and L. A. Archer
- BR17.** Direct visualizations of polymer tumbling in steady shear flow. R. E. Teixeira, H. P. Babcock, E. Shaqfeh and S. Chu

### Grand Station IV

#### Extensional Rheology

- ER1.** The use of capillary breakup extensional viscosity to examine concentration dependence of relaxation time. G. M. Neal and G. J. Braithwaite
- ER2.** Extensional rheology of paper coating colors at high strain rates. A. Arzate, G. Ascanio, P. J. Carreau and P. A. Tanguy
- ER3.** Elongational viscosity of narrow molar mass distribution polystyrene. A. Bach, K. Almdal, H. K. Rasmussen, K. Mortensen and O. Hassager
- ER4.** An extensional viscosity for fluid breakup. D. F. James
- COFFEE
- ER5.** Fingerprinting polymer macrostructure using the new SER extensional rheometer fixture. M. Sentmanat
- ER6.** Prediction of elongational viscosities of polymer melts by stochastic simulation. J.-I. Takimoto and M. Doi
- ER7.** Recovery and rupture in elongational flow of entangled polymers. Y. M. Joshi and M. M. Denn
- ER8.** Relating molecular structure and rheology of model branched polystyrene melts by MSF theory. M. H. Wagner, J. Hepperle and H. Münstedt

### Grand Station V

#### Liquid Crystalline & Self-Assembling

- LC19.** Solution rheology of comb-like associative polymers: Effects of backbone composition and hydrophobe concentration. A. A. Abdala and S. A. Khan
- LC20.** Reverse gelation of associative network polymers. H. H. Winter and P. Mandare
- LC21.** Characteristic rheological behaviour of associating polymers. L. Pellens, R. G. Corrales, J. Vermant and J. Mewis
- LC22.** Structure-rheology relationships for associative polymers based on polyoxyethylene macromers: A polysoap treatment. A. R. Hirst and R. J. English
- LC23.** Amphiphilic block copolypeptide hydrogels: Tuning gel rheology through molecular architecture. V. Breedveld, A. Nowak, T. J. Deming and D. J. Pine
- LC24.** Strong gels from associative PLA-PEO-PLA triblock copolymers. K. A. Amer, H. Sardinha, G. N. Tew and S. R. Bhatia
- LC25.** Linear viscoelasticity of telechelic fluoroalkyl PEGs. R. L. Hough and R. J. English
- LC26.** On the weak nematic elasticity. A. I. Leonov and V. S. Volkov



11:50 **SM50.** The effect of hydrodynamic interactions on the kinetics of ternary mixtures with reversible chemical reactions. *K. Good, O. Kuksenok, G. Buxton, V. V. Ginzburg and A. Balazs*

**BR18.** Effect of molecular weight of polymer matrix on electrophoretic mobility of large linear and star shaped DNA. *S. Saha and L. A. Archer*

**ER9.** Investigation of semihyperbolically converging dies for the measurement of elongational viscosity of polymeric fluids. *K. Feigl, B. J. Edwards, F. X. Tanner and J. R. Collier*

**LC27.** Anomalous rheology in a diblock copolymer/hydrocarbon system and its kinetic origin. *Z. Liu and M. T. Shaw*

12:15

END

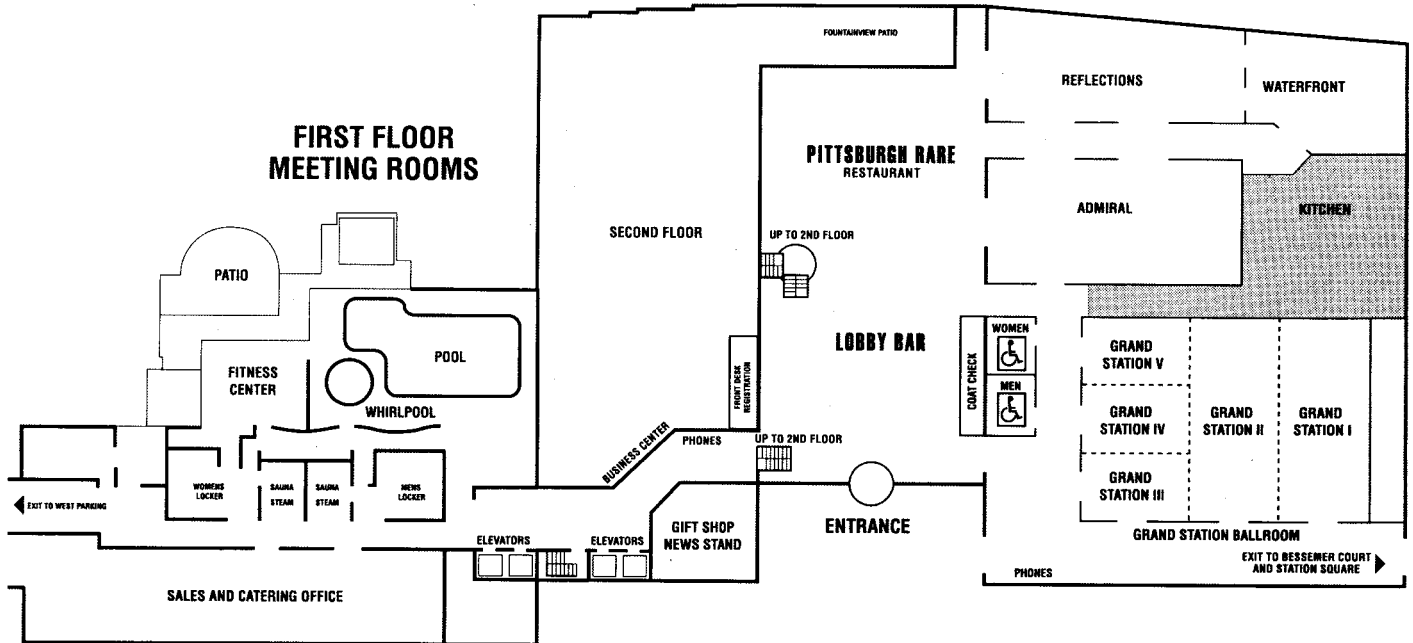
# Poster Session

Wednesday 6:00 PM Relections/Waterfront

- PO1.** Microhydrodynamics of concentrated hard sphere suspensions by particle-tracking confocal microscopy. *Q. Lu, C. Dibble and M. Solomon*
- PO2.** Dynamics and structure of dense colloid polymer mixtures. *S. Ramakrishnan, Y.-L. Chen, S. Shah, K. Schweizer and C. Zukoski*
- PO3.** Shear and extensional thickening of filled silica suspensions. *G. Bettin and G. H. McKinley*
- PO4.** Direct imaging of three-dimensional structure of colloidal gels by confocal microscopy. *M. H. Lee and E. M. Furst*
- PO5.** Real-time X-ray radiography of a bubble rising through a concentrated suspension. *A. M. Grillet, L. A. Mondy, V. Chawla and A. Graham*
- PO6.** Microrheology of dense colloidal suspensions. *A. Meyer, M. H. Lee and E. M. Furst*
- PO7.** Effect of particle surface modification in concentrated suspension on rheological behavior. *A. Hamamoto and S. J. Muller*
- PO8.** Experimental observation of the pair-distribution function in concentrated suspensions. *J. Fan, A. Graham, J. Abbott and L. A. Davis*
- PO9.** Shear-thinning of polydisperse suspensions. *A. Graham, J. Abbott, V. Chawla, R. S. Admuthe and P. Reardon*
- PO10.** Stress fluctuations of a jammed emulsion under shear. *G. Massiera and J. C. Crocker*
- PO11.** Flow properties of thermo-responsive fluids. *P. Mullick and C. F. Zukoski*
- PO12.** Shear effects on microstructural dynamics of biopolymer microemulsions. *J. Nesamony and W. M. Kolling*
- PO13.** Red blood cell deformation under shear and elongational flow. *S. S. Lee, N. J. Kim, S. K. Lee, K. H. Ahn and S. J. Lee*
- PO14.** Effect of drag-reducing polymers on red blood cells in microchannel flow. *Z. J. Wu, P. J. Marascalco, G. C. Smith, J. N. Marhefka and M. V. Kameneva*
- PO15.** The effects of particles on the degradation of drag-reducing polymers (DRP) in flow. *J. N. Marhefka, P. J. Marascalco, D. K. Arnold and M. V. Kameneva*
- PO16.** Quantification and characterization of DNA damage induced by the Fenton reaction and pyrogallol using a novel falling needle viscometric assay. *H. L. Park and N. A. Park*
- PO17.** DNA molecular configurations in flows near a glass surface. *L. Fang, L. Li, H. Hu and R. G. Larson*
- PO18.** Motions of single protein filaments F-actin in the entangled isotropic networks and in the nematic liquid crystalline phase. *J. Viamontes, D. M. Harrington and J. X. Tang*
- PO19.** One and two point microrheology of actin solutions. *M. Atakhorrani, G. H. Koenderink and C. F. Schmidt*
- PO20.** Viscoelastic properties of hydrogels formed via intramolecular folding and self-assembly of amphiphilic  $\beta$ -hairpin molecules. *B. Ozbas, K. Rajagopal, L. Pakstis, J. Gill, J. Schneider and D. Pochan*
- PO21.** Investigating the local structural properties of MAX1 (b-hairpin peptide) using multiple particle tracking microrheology. *C. S. Palla, K. Rajagopal, J. Schneider and E. M. Furst*
- PO22.** High-bandwidth microrheology applied to solutions and networks of semiflexible biopolymers. *K. M. Addas, J. X. Tang and C. F. Schmidt*
- PO23.** Dynamic mechanical study of chitosan solutions. *J. Cho, M.-C. Heuzey, A. Begin and P. J. Carreau*
- PO24.** Charge density effects in polyelectrolyte solution rheology. *S. Dou and R. H. Colby*
- PO25.** Numerical simulations of structure formation in sheared nematic LCP. *R. Zhou, M. G. Forest and Q. Wang*
- PO26.** One and two point microrheology in wormlike micelle systems. *M. Atakhorrani, M. Buchanan, J.-F. Paliarne and C. F. Schmidt*
- PO27.** On the strength of monodomain attractors in sheared nematic polymers. *X. Zheng, M. G. Forest, R. Zhou and Q. Wang*
- PO28.** Transient dynamics and rheology of sheared nematics polymers. *L. Yao, M. G. Forest, R. Zhou, Q. Wang and X. Zheng*
- PO29.** Transient molecular orientation in the wagging regime of a poly(benzyl glutamate) solution. *W. Burghardt, S. Fay and S. Rendon*
- PO30.** Orientation of platelets in multilayered nanocomposite polymer films. *M. M. Malwitz, S. Lin-Gibson, E. K. Hobbie, P. D. Butler and G. Schmidt*
- PO31.** Shear gelation and relaxation of polymer-clay dispersions. *D. C. Pozzo and L. M. Walker*
- PO32.** Rheological properties of polystyrene /clay nanocomposites prepared by in-situ free radical polymerization. *Y. Zhong and S.-Q. Wang*

- PO33.** Rheology of single-walled carbon nanotube/PMMA nanocomposites. *F. Du, R. Scogna, J. Fischer and K. Winey*
- PO34.** Non-linear melt rheology of carbon nanotubes/polypropylene nanocomposites: Elasticity and negative Weissenberg numbers. *S. B. Kharchenko, K. B. Migler, J. F. Douglas, T. Kashiwagi and E. Grulke*
- PO35.** Rheology of poly-methacrylate glasses. *B. M. Erwin and R. H. Colby*
- PO36.** Description and validation of a nonlinear viscoelastic theory for glassy polymers. *D. B. Adolf, R. S. Chambers and J. M. Caruthers*
- PO37.** Torque and normal force measurements in polymer glasses. *A. Flory and G. B. McKenna*
- PO39.** Effects of the degree of undercooling on flow-induced crystallization in polymer melts. *N. Grizzuti, S. Coppola and P. L. Maffettone*
- PO40.** Influence of long chain branching on elongation and shear properties of polyethylene. *F. A. Firozi and R. Ahmed*
- PO41.** Structural formation of amorphous poly(ethylene terephthalate) under uniaxial deformation. *D. Kawakami, S. Ran, C. Burger, I. Sics, C. Avila-orta and B. S. Hsiao*
- PO42.** Rheological effects in reactive blending of polymers. *N. Dufaure, P. J. Carreau, M.-C. Heuzey and A. Michel*
- PO43.** Rheological response of isotactic polypropylene/polyamide-6 blends during coalescence. *J. E. Perilla and S. C. Jana*
- PO44.** Yield-like constitutive transition in entangled melts. *P. Tapadia and S.-Q. Wang*
- PO45.** Rheological behavior of ethylene vinyl acetate copolymer with vinyl acetate and dicumyl peroxide contents. *Y.-T. Sung, W. J. Seo, J. H. Park and W. N. Kim*
- PO46.** Rheology of polyethylenes with novel branching topology. *R. Patil, R. H. Colby, G. Chen and Z. Guan*
- PO47.** Enhanced melt strength and stretching of linear-low density polyethylene extruded under strong slip conditions. *T. D. J. Guadarrama-Medina, J. Pérez-González and L. de Vargas*
- PO48.** Rheological characterization of structural evolution in triblock copolymers. *A. Philips and S.-Q. Wang*
- PO49.** LAOS (Large Amplitude Oscillatory Shear) behavior of PEO-PPO-PEO triblock copolymer solution. *K. Hyun, K. H. Ahn and S. J. Lee*
- PO50.** Spreading of model non-Newtonian fluids. *G. K. Seevaratnam, L. M. Walker and S. Garoff*
- PO51.** Multiplicity and stability analysis of the nonisothermal film blowing process. *H. W. Jung, J. S. Lee and J. C. Hyun*
- PO52.** Stability analysis of the film casting process with encapsulation die. *J. S. Lee, H. W. Jung and J. C. Hyun*
- PO53.** Microrheology of elastomeric polypropylene probed by rheo-optical FTIR spectroscopy. *R. Inapagolla, R. Kannan, W. Wiyatno, G. G. Fuller and R. Waymouth*
- PO54.** Conformational evolution of polymer chains over extended time periods and polymer lengths. *P. Dimitrakopoulos*
- PO55.** Integral model simulations of stress distributions in an axisymmetric stagnation flow. *J. Bryant and W. Burghardt*
- PO56.** A mesoscopic description of diffusion process through polymeric materials. *Q. Liu and D. De Kee*
- PO57.** Accurate numerical simulation with essential reduced-order microstructure models. *V. Venkataramani, R. Sureshkumar and B. Khomami*
- PO58.** Effect of flow field on polymer chain scission in extensional and turbulent flows. *S. A. Vanapalli, M. T. Islam and M. Solomon*
- PO59.** Molecular dynamics of a polymer tethered to a solid surface in a flow. *Y. Gratton and G. W. Slater*
- PO60.** Tensile properties and structure of topological gel: Molecular dynamics study. *F. Sawa, T. Okamoto, T. Aoyagi, J.-I. Takimoto and M. Doi*
- PO61.** Multi-decade viscosity analyses during chemical and thermoreversible gelation, using Brookfield viscometers or rheometers and a novel control algorithm. *D. J. Moonay*
- PO62.** A new integrated Rheo Small Angle Light Scattering (Rheo-SALS) device. *J. Laeuger and G. Pfeifer*
- PO63.** Development of a combinatorial rheometer for polymer formulations. *H. J. Walls, R. F. Berg, A. Karim and E. J. Amis*
- PO64.** Rheological properties of bread dough: Application of the Cox-Merz and Laun rules. *R. J. Love, Y. Hemar, R. McKibbin and M. P. Morgenstern*
- PO65.** Evaluation of the variability of the WLF constants of extruded soy flour with the extent of cooking. *B. K. Ashokan and J. L. Kokini*
- PO66.** Interfacial rheology system for a commercial rheometer. *E. F. Brown*

## Floor Plan – Sheraton Station Square Hotel



### Social Program

- |                              |  |
|------------------------------|--|
| <b>Sunday, October 12</b>    | <b>Welcoming Reception</b><br>7:00 PM – 9:00 PM    Reflections/Waterfront (Sheraton)   |
| <b>Monday, October 13</b>    | <b>Awards Reception</b><br>7:00 PM – 8:00 PM    Reflections/Waterfront (Sheraton)<br><i>Sponsored by a generous contribution from Thermo Electron Corporation</i>      |
|                              | <b>Awards Banquet</b><br>8:00 PM                      Admiral (Sheraton)   |
| <b>Tuesday, October 14</b>   | <b>Business Meeting</b><br>5:30 PM                      Grand Station III (Sheraton)   |
|                              | <b>Tuesday Night Reception (River Cruise)</b><br>7:00 PM                      Gateway Clipper Docks<br><i>Sponsored by a generous contribution from TA Instruments</i> |
| <b>Wednesday, October 15</b> | <b>Poster Session Refreshments</b><br>6:00 PM – 8:00 PM    Reflections/Waterfront (Sheraton)<br><i>Sponsored by a generous contribution from Paar Physica USA</i>      |