



# The Society of Rheology 76th Annual Meeting - Lubbock, Texas

## Meeting Schedule

Monday, February 14, 2005					Tuesday, February 15, 2005					Wednesday, February 16, 2005					Thursday, February 17, 2005					
8:30	G. H. McKinley (PL1)				8:30	C. W. Macosko (PL2)				8:30	D. Weitz (PL3)				8:05					
9:20	Coffee				9:20	Coffee				9:20	Coffee				8:30	FI1	SC31	EM10	MS27	
9:45	GP1	DS1	BS1	MF1	9:45	GP14	SC5	EM1	MS1	9:45	RM4	SC18	SA5	MS14	8:55	FI2	SC32	EM11	MS28	
10:10	GP2	DS2	BS2	MF2	10:10	GP15	SC6	EM2	MS2	10:10	RM5	SC19	SA6	MS15	9:20	FI3	SC33	EM12	MS29	
10:35	GP3	DS3	BS3	MF3	10:35	GP16	SC7	EM3	MS3	10:35	RM6	SC20	SA7	MS16	9:45	Coffee				
11:00	GP4	DS4	BS4	MF4	11:00	GP17	SC8	EM4	MS4	11:00	RM7	SC21	SA8	MS17	10:10	FI4	SC34	EM13	MS30	
11:25	GP5	DS5	BS5	MF5	11:25	GP18	SC9	EM5	MS5	11:25	RM8	SC22	SA9	MS18	10:35	FI5	EM14			MS31
12:00	Society Luncheon				11:50	Lunch				11:50	Lunch				11:00	FI6	SC36	EM15	MS32	MS33
1:50	GP6	DS6	BS6	MF6	1:50	GP19	SC10	EM6	MS6	1:50	RM9	SC23	SA10	MS19	11:25	FI7	SC37	EM16	MS34	
2:15	GP7	DS7	BS7	MF7	2:15	GP20	SC11	EM7	MS7	2:15	RM10	SC24	SA11	MS20	11:50	End				
2:40	GP8	DS8	BS8	MF8	2:40	GP21	SC12	EM8	MS8	2:40	RM11	SC25	SA12	MS21						
3:05	GP9	DS9	BS9	MF9	3:05	GP22	SC13	EM9		3:05	RM12	SC26	SA13	MS22						
3:30	Coffee				3:30	Coffee				3:30	Coffee									
3:55	GP10	SC1	BS10	MF10	3:55	RM1	SC14	SA1	MS10	3:55	RM13	SC27	SA14	MS23						
4:20	GP11	SC2	BS11	MF11	4:20	RM2	SC15	SA2	MS11	4:20	RM14	SC28	SA15	MS24						
4:45	GP12	SC3	BS12	MF12	4:45	RM3	SC16	SA3	MS12	4:45	RM15	SC29	SA16	MS25						
5:10	GP13	SC4	BS13	MF13	5:10	SC17 SA4 MS13				5:10	RM16	SC30	SA17	MS26						
5:35	End				5:35	End					5:35	End								
6:15	Society Reception				5:40	Business Meeting					6:00	Poster Session & Refreshments								
					6:45	Awards Reception														
					8:00	Awards Banquet														

## Session Codes

BS = Biological Systems  
 DS = Dilute Solutions  
 EM = Experimental Methods  
 FI = Fluid Mechanics and Instability

GP = 50 Years of WLF: Glassy Polymers & Related Systems  
 MF = Multiphase Fluids  
 MS = Entangled Melts & Solutions

PL = Plenary Lectures  
 RM = Rheology at Microscopic Scale  
 SA = Self-Assembled & Associating Fluids  
 SC = Suspensions and Colloids

# Monday, February 14

## Morning

8:30 **PL1.** Stretched to breaking point: Measuring the transient extensional rheometry of complex fluids from the dilute solution to the melt. G. H. McKinley Theater

9:20

COFFEE

### Room 104/105

#### Glassy Polymers & Related Systems

9:45 **GP1.** Origins and subsequences.  
R. F. Landel

10:10 **GP2.** Non-WLF behavior of the dynamics of glass-forming liquids in equilibrium but below the calorimetric glass temperature.  
G. B. McKenna and X. Shi

10:35 **GP3.** Dielectric approach to viscous materials. R. Richert

11:00 **GP4.** WLF, fragility, KWW analysis of meosporous silica modified epoxies.  
N. A. D'Souza, Z. Yang, D. Coutinho and K. Balkus

11:25 **GP5.** Translational diffusion of probe molecules in supercooled liquids studied by holographic FRAP. J. R. Rajian and E. L. Quitevis

12:00

### Room 107

#### Dilute Solutions

**DS1.** Characterization of the distribution of long chain branches in polyolefins.  
P. M. Cotts

**DS2.** Critical crosslinking concentrations for guar and guar derivative solutions.  
C. Lei and P. E. Clark

**DS3.** Study of critical volume fraction and diffusion coefficients in nanotube/epoxy dispersion. K. Koziol, S. S. Rahatekar, S. Butler, M. Mackley and A. H. Windle

**DS4.** Determining the distribution and average length of single-walled carbon nanotubes by viscosity measurements in dilute Brownian suspensions. N. G. Parra-Vasquez, I. Stepanek, V. A. Davis, V. C. Moore, E. H. Haroz, R. H. Hauge, R. E. Smalley and M. Pasquali

**DS5.** Reduced-order modeling of dynamics of polymeric solutions under flow : A configuration-based approach.  
V. Venkataramani, R. Sureshkumar and B. Khomami

### Room 108/109

#### Biological Systems

**BS1.** Viscoelasticity of lung surfactant responding to environmental stress.  
A. Goffin, J. Anseth, G. Fuller, D. Upadhyay and P. Kao

**BS2.** Using single lipid tracking to investigate langmuir monolayer properties.  
M. J. Widenbrant and G. Fuller

**BS3.** Expression level of surface proteins under variable stress conditions.  
M. B. Kerby and A. Tripathi

**BS4.** Flow around an endothelial cell attached to a micro-vessel wall.  
P. Dimitrakopoulos and Y. Wang

**BS5.** The effect of magnitude and duration of shear exposure on the characteristics of red blood cell deformability. S. S. Lee, N. J. Kim, K. H. Ahn, S. J. Lee, K. Sun, J. F. Antaki, M. V. Kameneva, J. G. Dobbe and M. R. Hardeman

### Theater

#### Multiphase Fluids

**MF1.** Revision of some theories allowing determination of interfacial tension in polymer blends. M. M. Bousmina

**MF2.** Shear effects on rheology and phase behavior of polymer blends. B. Narayanan, V. Pryamitsyn and V. Ganesan

**MF3.** Creep recovery of compatibilized blends. S. Velankar and J. Wang

**MF4.** The mesoscale structure of immiscible liquid-liquid systems during phase inversion. M. J. Biggs and R. Layfield

**MF5.** Polymer mutual diffusion via rheology of multilayers. R. Zhao and C. W. Macosko

SOCIETY LUNCHEON Lubbock Memorial Civic Center

## Afternoon

### Room 104/105

#### Glassy Polymers & Related Systems

### Room 107

#### Dilute Solutions

### Room 108/109

#### Biological Systems

### Theater

#### Multiphase Fluids

1:50	<b>GP6.</b> Disentangling density and temperature effects. <u>C. M. Alba-Simionesco</u> , <u>G. Tarjus</u> , <u>A. Alegria</u> and <u>S. Mossa</u>	<b>DS6.</b> Study of the effects of drag-reducing polymers on flow of red blood cells in tubes. <u>J. Marhefka</u> , <u>P. Marascalco</u> and <u>M. V. Kameneva</u>	<b>BS6.</b> Using multiple particle tracking to study extracellular matrices. <u>P. S. Doyle</u> and <u>T. Savin</u>	<b>MF6.</b> Rheological study of the influence of shear flow on crystallization of polyhedral oligosilsesquioxanes (POSS) in PEG-based multiblock polyurethanes. <u>J. Wu</u> , <u>Q. Ge</u> , <u>K. A. Burke</u> and <u>P. T. Mather</u>
2:15	<b>GP7.</b> Scaling of the segmental relaxation times of polymers. <u>C. M. Roland</u> and <u>R. Casalini</u>	<b>DS7.</b> Capillary thinning rheometry. <u>M. S. Owens</u> , <u>W. Suszynski</u> , <u>L. E. Scriven</u> and <u>C. W. Macosko</u>	<b>BS7.</b> Microstructural and microrheological properties of novel self-assembled hydrogels. <u>C. Veerman</u> , <u>K. Rajagopal</u> , <u>J. P. Schneider</u> and <u>E. M. Furst</u>	<b>MF7.</b> Rheological effects of drag-reducing polymers on blood flow in microcirculation. <u>M. V. Kameneva</u>
2:40	<b>GP8.</b> The relationship between polymer mobility and potential energy. <u>D. B. Adolf</u> , <u>J. Budzien</u> and <u>J. McCoy</u>	<b>DS8.</b> Modeling and experiments of electrostatically driven Boger fluid jets. <u>C. P. Carroll</u> and <u>Y. L. Joo</u>	<b>BS8.</b> Active and passive microrheology of semiflexible fd virus solutions. <u>K. M. Addas</u> , <u>M. Keller</u> , <u>E. Sackmann</u> , <u>C. F. Schmidt</u> and <u>J. X. Tang</u>	<b>MF8.</b> Rheology and flow-induced structure in a polystyrene-polyisoprene biocontinuous microemulsion. <u>K. Brinker</u> and <u>W. Burghardt</u>
3:05	<b>GP9.</b> Are rate processes of amorphous materials determined by the fractional free volume?. <u>D. J. Plazek</u>	<b>DS9.</b> An approximate solution to flow through a contraction for high Trouton ratio fluids. <u>A. S. Lubansky</u> , <u>D. V. Boger</u> and <u>J. J. Cooper-White</u>	<b>BS9.</b> Relaxation mechanism of extended biopolymers. <u>P. Dimitrakopoulos</u> and <u>I. D. Dissanayake</u>	<b>MF9.</b> Phase diagram of non-Brownian carbon nanotube suspensions. <u>E. K. Hobbie</u> , <u>D. Fry</u> and <u>H. Wang</u>
3:30	COFFEE			
	<b>Suspensions and Colloids</b>			
3:55	<b>GP10.</b> WLF/VFT equation look-alikes, with thermodynamic accounts of the fragility, inside. <u>C. A. Angell</u>	<b>SC1.</b> Interparticle attractions and the zero shear viscosity of near hard sphere colloidal dispersions. <u>N. J. Wagner</u> , <u>L. Krishnamurthy</u> and <u>J. Mewis</u>	<b>BS10.</b> Rheological studies of nano-hydroxyapatite suspensions for biomedical applications. <u>K. Chandrasekhar</u> , <u>J. Paguio</u> , <u>A. E. Senador</u> , <u>M. Wei</u> and <u>M. T. Shaw</u>	<b>MF10.</b> Measurements of particle orientation in simple shear and channel flows of polypropylene/clay nanocomposites. <u>L. Dykes</u> and <u>W. Burghardt</u>
4:20	<b>GP11.</b> The WLF temperature and volume dependences of molecular mobility in glass-forming substances originates from the secondary Johari-Goldstein relaxation. <u>K. L. Ngai</u>	<b>SC2.</b> Yielding and flow of colloidal glasses and gels. <u>K. Pham</u> , <u>G. Petekidis</u> , <u>P. N. Pusey</u> and <u>D. Vlassopoulos</u>	<b>BS11.</b> Characterization of polymer hydrogels formed via saccharide-peptide interactions. <u>B. S. Chae</u> , <u>N. Yamaguchi</u> , <u>K. L. Kiick</u> and <u>E. M. Furst</u>	<b>MF11.</b> Investigating filler reinforcement and nonlinear viscoelastic behavior of silica particle filled polybutadiene. <u>Z. Zhu</u> , <u>T. Thompson</u> , <u>S.-Q. Wang</u> , <u>E. von Meerwall</u> and <u>A. Halasa</u>
4:45	<b>GP12.</b> Nanothermodynamics and the Williams-Landel-Ferry equation. <u>R. V. Chamberlin</u>	<b>SC3.</b> Structural evolution and non-linear rheology of weak colloidal gels during start-up of steady shear flow. <u>A. Mohraz</u> and <u>M. J. Solomon</u>	<b>BS12.</b> Molecular and rheological characterization of hyaluronic acid and equine synovial fluid. <u>D. Leiske</u> , <u>S. Tracy</u> , <u>H. Schmidt</u> , <u>J. Parker</u> and <u>S. Rochefort</u>	<b>MF12.</b> Mobility and in situ aggregation of charged microparticles at oil-water interface. <u>S. Tarimala</u> , <u>S. Ranabothu</u> , <u>J. Verneti</u> and <u>L. L. Dai</u>
5:10	<b>GP13.</b> Local energy exchange model for predicting super-Arrhenian behavior. <u>G. A. Medvedev</u> and <u>J. M. Caruthers</u>	<b>SC4.</b> Times scales and aggregation mechanisms in a Laponite-poly(ethylene oxide) dispersion under shear flow. <u>J. R. de Bruyn</u> , <u>F. Pignon</u> , <u>J.-M. Piau</u> and <u>A. Magnin</u>	<b>BS13.</b> Study of the effects of blood soluble drag-reducing polymers (DRPs) on blood viscoelastic and coagulation parameters. <u>P. Marascalco</u> , <u>T. Snyder</u> , <u>J. Marhefka</u> and <u>M. V. Kameneva</u>	<b>MF13.</b> Higher harmonics in large amplitude oscillatory shear response. <u>K. H. Ahn</u> , <u>K. Hyun</u> , <u>E. Baek</u> , <u>K. Cho</u> and <u>S. J. Lee</u>
5:35	END			
6:15	SOCIETY RECEPTION Caprock Winery (buses leave at 6:15)			

# Tuesday, February 15

## Morning

8:30 **PL2.** Rheometry: From concentric cylinders to optical tweezers. C. W. Macosko Theater  
9:20 COFFEE

	<i>Room 104/105</i>	<i>Room 107</i>	<i>Room 108/109</i>	<i>Theater</i>
	<b>Glassy Polymers &amp; Related Systems</b>	<b>Suspensions and Colloids</b>	<b>Experimental Methods</b>	<b>Entangled Melts &amp; Solutions</b>
9:45	<b>GP14.</b> Energy landscape picture of overaging and rejuvenation in a glass. <u>D. J. Lacks</u> and <u>M. Osborne</u>	<b>SC5.</b> Polymer molecular weight effects on the rheology of Laponite-PEO dispersions. <u>H. A. Baghdadi</u> and <u>S. R. Bhatia</u>	<b>EM1.</b> Use of vibrational linear dichroism for correlating local functional group orientation to bulk stress relaxation in model acrylic polymers. <u>C. B. Walsh</u> and <u>G. L. Johnson</u>	<b>MS1.</b> Flow induced correlation effects within a linear chain in a polymer melt. <u>R. Stepanyan</u> , <u>J. J. Slot</u> , <u>J. Molenaar</u> and <u>M. A. Tchesnokov</u>
10:10	<b>GP15.</b> Enhanced cooperativity below the caging temperature of glass-forming liquids. <u>B. M. Erwin</u> , <u>R. H. Colby</u> , <u>S. Y. Kamath</u> and <u>S. K. Kumar</u>	<b>SC6.</b> Effects of brush grafting density and matrix chain length on wetting/rheology of coated nanospheres in PDMS melts. <u>D. L. Green</u> and <u>J. Mewis</u>	<b>EM2.</b> Methods for direct visualization of three-dimensional order in colloidal structures assembled by sedimentation. <u>A. Mohraz</u> , <u>T. Solomon</u> and <u>M. J. Solomon</u>	<b>MS2.</b> The chain retraction potential in a fixed entanglement network. <u>S. A. Shanbhag</u> and <u>R. G. Larson</u>
10:35	<b>GP16.</b> Non-linear changes in specific volume: A route to resolve an entropy crisis. <u>S. Rastogi</u>	<b>SC7.</b> Non-Einstein like behavior of nanoscopic sized fillers in polymer melts. <u>A. Tuteja</u> , <u>M. E. Mackay</u> , <u>C. J. Hawker</u> and <u>B. van Horn</u>	<b>EM3.</b> Small angle neutron scattering under flow in the 1-2 plane: Rheo-SANS of phase-separating self-assembled wormlike surfactants and MLV formation kinetics. <u>N. J. Wagner</u> , <u>M. Liberatore</u> , <u>F. Nettesheim</u> and <u>L. Porcar</u>	<b>MS3.</b> Re-entanglement kinetics in sheared polybutadiene solutions. <u>C. M. Roland</u> , <u>C. G. Robertson</u> , <u>S. Warren</u> and <u>D. J. Plazek</u>
11:00	<b>GP17.</b> Predicting engineering properties in glassy networks from molecular-based parameters. <u>A. J. Lesser</u> and <u>K. Calzia</u>	<b>SC8.</b> Rheology of polyolefin coated aluminum nanoparticles suspensions. <u>B. Mary</u> , <u>C. Dubois</u> , <u>P. J. Carreau</u> and <u>P. Brousseau</u>	<b>EM4.</b> Particle migration patterns observed in oscillatory flow by NMRI. <u>C. Xi</u> and <u>N. C. Shapley</u>	<b>MS4.</b> Exploring nonlinear flow behavior of entangled polymers. <u>P. S. Tapadia</u> and <u>S.-Q. Wang</u>
11:25	<b>GP18.</b> Nonlinear response of glassy polymers: Microscopic origins of torque, normal force and volume changes in torsion. <u>A. L. Flory</u> and <u>G. B. McKenna</u>	<b>SC9.</b> Steady state and transient rheological behavior of organoclay-polypropylene nanocomposites. <u>S. Ceccia</u> , <u>J. L. Vermant</u> and <u>P. L. Maffettone</u>	<b>EM5.</b> Characterization of divergence in velocity fields during entry flow of a viscoelastic fluid by MRI velocimetry methods. <u>G. E. Pavlovskaya</u>	<b>MS5.</b> Interfacial and bulk healing dynamics of entangled polymer liquids at large shear stresses. <u>H. Qi</u> and <u>L. A. Archer</u>
11:50			LUNCH	

## Afternoon

	<i>Room 104/105</i>	<i>Room 107</i>	<i>Room 108/109</i>	<i>Theater</i>
	<b>Glassy Polymers &amp; Related Systems</b>	<b>Suspensions and Colloids</b>	<b>Experimental Methods</b>	<b>Entangled Melts &amp; Solutions</b>
1:50	<b>GP19.</b> Volume recovery of polystyrene. <u>S. Kolla</u> , <u>P. Bernazzani</u> and <u>S. L. Simon</u>	<b>SC10.</b> Laser tweezer microrheology of colloidal suspensions. <u>E. M. Furst</u> , <u>J. P. Pantina</u> , <u>M.-H. Lee</u> and <u>A. Meyer</u>	<b>EM6.</b> A new rheometer with unprecedented low torque performance. <u>B. A. Costello</u> , <u>N. R. Doe</u> , <u>P. W. Foster</u> and <u>R. E. Smith</u>	<b>MS6.</b> Origin of super soft states in bulk polymers. <u>T. Pakula</u>

2:15	<b>GP20.</b> Investigating environmental stress cracking using contact angle measurements. <u>A. J. Lesser and P. Walsh</u>	<b>SC11.</b> Measuring the critical stress to breakup aggregates of carbon nanotubes using microfluidic traps. <u>P. R. Start, S. D. Hudson, E. K. Hobbie and K. Migler</u>	<b>EM7.</b> A novel nanobubble method for measuring the creep compliance of ultrathin polymer films. <u>P. A. O'Connell and G. B. McKenna</u>	<b>MS7.</b> A molecular model for slip at polymer melt/solid interfaces. <u>M. A. Tchesnokov, J. Molenaar, J. J. Slot and R. Stepanyan</u>
2:40	<b>GP21.</b> Determination of WLF constants for a food polymer system: Effect of water activity and degree of crosslinking. <u>J. L. Kokini, M. E. Yildiz and B. Ashokan</u>	<b>SC12.</b> Probing frequency dependence of fluid structure in a nano-particle suspension. <u>Y. Zheng, D. De Kee and X. Wang</u>	<b>EM8.</b> A study of dynamic heterogeneity in polymers by mechanical spectral hole burning (MSHB). <u>X. Shi and G. B. McKenna</u>	<b>MS8.</b> Affect of interfacial slip on polymer/polymer adhesion. <u>P. J. Cole, J. Zhang and C. W. Macosko</u>
3:05	<b>GP22.</b> Controlled Epoxy network structure-property relationships: Effect of chain termination and host crosslink density. <u>N. E. Verghese, M. J. Marks, A. Laboy-Torro and H. Q. Pham</u>	<b>SC13.</b> Application of Nth-nearest neighbor statistics to characterize clustering in melt-cast composite materials. <u>J. W. Leggoe</u>	<b>EM9.</b> A new real time measurement of the true gap size during parallel-plate and cone-and-plate rheological testing. <u>J. Laeuger, P. Heyer and G. Raffer</u>	
3:30	COFFEE			
	<b>Rheology at Microscopic Scale</b>			
3:55	<b>RM1.</b> Polymer films at the air/water interface: Rheology and simulation. <u>G. T. Gavranovic, J. M. Deutsch and G. Fuller</u>	<b>SC14.</b> Viscoelasticity of suspensions of Xanthan gum gel fragments. <u>G. B. Thurston</u>	<b>Self-Assembled &amp; Associating Fluids</b>	
4:20	<b>RM2.</b> Influence of elasticity on the dynamic interface shapes of polymer melts and Boger fluids. <u>G. K. Seevaratnam, S. Garoff and L. M. Walker</u>	<b>SC15.</b> Magnetic emulsions with tunable stability. <u>S. Melle, M. Lask and G. Fuller</u>	<b>SA1.</b> Correlations between rheology and molecular structure for telechelic associative polymers. <u>X. Meng and W. B. Russel</u>	<b>MS10.</b> On the modeling of the Rheotens experiment for polymer melts with kinetic theory constitutive viscoelastic equations. <u>A. K. Doufous, I. Graf and M. Mangnus</u>
4:45	<b>RM3.</b> Formation of Newtonian and polymeric drops via shear-dominated flows in microchannels. <u>A. J. Greiner, G. F. Christopher, J. A. Taylor and S. L. Anna</u>	<b>SC16.</b> Transient rheology and structure evolution in ER and MR suspensions. <u>D. J. Klingenberg, J. Hoerrmann, D. Kittipoomwong, Y. Pappas, J. C. Ulicny and J. F. Morris</u>	<b>SA2.</b> Variation of hydrophobic interactions in nonionic surfactant/associative polymer systems. <u>S. Talwar, L. F. Scanu and S. A. Khan</u>	<b>MS11.</b> A critical study of high-rate uniaxial extensional melt flow and the melt fracture behavior of linear polyethylenes. <u>M. L. Sentmanat, E. Muliawan and S. Hatzikiriakos</u>
5:10		<b>SC17.</b> Flow based control of conductivity in nanotube suspensions. <u>S. Kharchenko, J. Obrzut, J. Douglas and K. Migler</u>	<b>SA3.</b> Rheometric estimation of binding constant for cyclodextrin-hydrophobe complexation in associative polymers. <u>S. Mahammad and S. A. Khan</u>	<b>MS12.</b> Chain dynamics in linear polymer melts: A neutron spin echo study. <u>A. Wischniewski, M. Zamponi, M. Monkenbusch, L. Willner, D. Richter, A. Likhtman, T. McLeish, B. Farago and G. Kali</u>
5:35			<b>SA4.</b> pH-triggered release of polycation-b-poly(ethylene glycol) from liposomes. <u>D. T. Auguste, R. K. Prud'homme, T. Deming, S. Armes and J. Kohn</u>	<b>MS13.</b> Tube dilation and reptation in binary blends of monodisperse linear polymers. <u>S. J. Park and R. G. Larson</u>
5:40			END	
6:45			BUSINESS MEETING Room 107	
8:00			AWARDS RECEPTION Museum of Texas Tech (buses leave at 6:45)	
			AWARDS BANQUET Museum of Texas Tech	

# Wednesday, February 16

## Morning

8:30

**PL3.** Rheology and microrheology of composite actin networks. D. Weitz Theater

9:20

COFFEE

### Room 104/105

#### Rheology at Microscopic Scale

9:45 **RM4.** Single particle motion in colloidal dispersions as a model for nonlinear microrheology. J. F. Brady, A. S. Khair, I. Carpen and T. M. Squires

10:10 **RM5.** Probing the microstructure of Carbopol using multiple particle tracking and dynamic light scattering. F. Oppong, L. Rubatat, B. J. Frissen, A. E. Bailey and J. R. de Bruyn

10:35 **RM6.** Microbead rheology of lung mucus: Experiments and modeling. G. Forest, D. Hill, L. Yao and R. Superfine

11:00 **RM7.** Analysis of the embedment of nanospheres into polymer surfaces: Is there a liquid layer?. S. A. Hutcheson and G. B. McKenna

11:25 **RM8.** Scaling laws for polymers using mesoscopic simulations. V. Symeonidis, B. Caswell and G. E. Karniadakis

11:50

### Room 107

#### Suspensions and Colloids

**SC18.** Transient response of the electrical conductivity of suspensions upon a reversal in the direction of shear. E. R. Greenberg and F. A. Gadala-Maria

**SC19.** Anisotropy of sheared carbon nanotube suspensions. E. K. Hobbie, D. Fry and H. Wang

**SC20.** Effects of fiber shape on the rheology of fiber suspensions. E. J. Tozzi, C. T. Scott and D. J. Klingenberg

**SC21.** Dilute rheology of functionalized SWNTs (*f*-SWNTs) in strong acids. P. K. Rai, N. G. Parra-Vasquez, V. A. Davis, R. A. Pinnick, A. K. Sadana, J. Chattopadhyay, F. Liang, E. Billups, R. H. Hauge, R. E. Smalley and M. Pasquali

**SC22.** Alignment and orientation effects of particles suspended in viscoelastic fluids. J. L. Vermant, D. Gunez, R. Scirocco and J. Mewis

### Room 108/109

#### Self-Assembled & Associating Fluids

**SA5.** Tuning the linear viscoelastic behavior of wormlike micelles. M. J. Gerber, M. T. Truong and L. M. Walker

**SA6.** Development of a solvent/temperature superposition for a solution of rod-like micelles. P. Sullivan, R. K. Prud'homme and W. Siriwatwechakul

**SA7.** Fluctuations and order in wormlike micelles under shear. P. T. Callaghan, M. R. Lopez-Gonzalez, W. M. Holmes and P. J. Photinos

**SA8.** Viscosity increase with temperature caused by a vesicle to wormlike micelle transition. T. S. Davies, D. M. Griffin and S. R. Raghavan

**SA9.** Nanoparticle dynamics in solutions of wormlike micelles. M. Liberatore, F. Nettesheim, E. W. Kaler and N. J. Wagner

### Theater

#### Entangled Melts & Solutions

**MS14.** Prediction of linear viscoelastic properties for polydisperse mixtures of entangled star and linear polymers : Modified tube-based model and comparison with experimental results. E. van Ruymbeke, R. Keunings and C. Bailly

**MS15.** Evaluation of a new constitutive equation for mixtures of entangled linear polymers and application to the study LAOS polystyrene melts. A. Levygue, C.-Y. Liu, N. Coppin, H. Burhin, C. Bailly and R. Keunings

**MS16.** The composition dependence of viscosity in miscible polymer blends. T. P. Lodge and J. C. Haley

**MS17.** Evaluation of different methods for the determination of the plateau modulus  $G_N^0$  and the entanglement molecular weight  $M_e$ . C.-Y. Liu, E. van Ruymbeke, A. Leygue, R. Keunings and C. Bailly

**MS18.** Rheology of architecturally complex polymer melts. M. Kapnistos, D. Vlassopoulos, J. Roovers, N. Hadjichristidis and G. Leal

LUNCH

## Afternoon

### Room 104/105

#### Rheology at Microscopic Scale

### Room 107

#### Suspensions and Colloids

### Room 108/109

#### Self-Assembled & Associating Fluids

### Theater

#### Entangled Melts & Solutions

- 1:50 **RM9.** Extensional flow of dilute polymer solutions through microfabricated hyperbolic contractions. M. S. N. Oliveira, L. E. Rodd and G. H. McKinley
- 2:15 **RM10.** Dynamics of wormlike micelles in extensional flows. P. A. Stone, P. Dalhaimer, D. E. Discher, E. J. Amis, S. D. Hudson and K. Migler
- 2:40 **RM11.** Microfluidic rheometry using flow-induced birefringence. J. A. Pathak and S. D. Hudson
- 3:05 **RM12.** Rheological study of fluid flow in microchannels subjected to uniform injection and suction. M. Layeghi
- 3:30
- 3:55 **RM13.** Chaotic mixing in a microfluidic device driven by oscillatory electroosmotic flow. F. R. Phelan Jr., J. A. Pathak and J. Obrzut
- 4:20 **RM14.** The potential for micron scale spatially resolved rheology using classical nano-indentation techniques. C. C. White, P. Drzal and M. Vanlandingham
- 4:45 **RM15.** Measurements of viscoelastic functions in both time and frequency domains using nanoindentation. H. Lu, G. Huang and B. Wang
- 5:10 **RM16.** A self-aligned apparatus for studying microscale flows. D. Yao, Z. Xie and Q. Zou
- 5:35
- 6:00
- SC23.** Hybrid simulations of the rheology of colloidal dispersions in simple and polymeric fluids. V. Pryamitsyn and V. Ganesan
- SC24.** Study of a dissipative particle dynamics based approach for modeling suspensions. N. S. Martys
- SC25.** Diffusion and reaction of Brownian particles in a dense suspension of traps. M. W. Vaughn
- SC26.** The elastic and plastic properties of disordered soft particle pastes. J. Seth, M. Cloitre and R. T. Bonnecaze
- SC27.** Understanding particle-surface interactions in colloidal gels from wall-slip. A. M. Sanchez and S. A. Khan
- SC28.** Complex rheology and modeling of a thixotropic suspension. A. M. Grillet, R. R. Rao, L. A. Mondy, S. Kawaguchi and D. B. Adolf
- SC29.** Thixotropy and rheology of aggregated dispersions with wetting polymer. A. Potanin
- SC30.** Thixotropy by magnetic resonance imaging (MRI). P. Coussot, F. Bertrand, H.-T. Huynh, S. Jarny, N. Roussel and S. Rodts
- SA10.** Linear and non-linear rheology of mixed anionic surfactant solutions. P. Pimenta and E. Pashkovski
- SA11.** Effect of a block copolymer on the contour length and rheology of a solution of wormlike micelles of a zwitterionic surfactant. A. Nandi, E. W. Kaler, P. Sullivan and Y. Chen
- SA12.** Scaling theory at gelation point: chitosan concentration and temperature effects. J. Cho, M.-C. D. Heuzey, A. Begin and P. J. Carreau
- SA13.** Evaluation of nanoparticle arrays templated by self-assembled block copolymer gels. D. C. Pozzo and L. M. Walker
- SA14.** Multiple gelation mechanisms in block copolymers. P. Mandare and H. H. Winter
- SA15.** Experimental characterization of critical gel behavior of thermoplastic poly(esterurethanes). D. Nichetti and N. Grizzuti
- SA16.** Extrusion of triblock and pentablock copolymer blends. A. Phatak, V. C. Holmberg, C. W. Macosko and F. S. Bates
- SA17.** Relationship between phase behavior and actuation in smectic elastomers. I. A. Rousseau and P. T. Mather
- MS19.** Viscoelastic properties of cyclic polyethylene. J. Wang and G. B. McKenna
- MS20.** Motion of branch point in asymmetric star polymers. J. H. Lee, L. J. Fetters and L. A. Archer
- MS21.** Role of branch point friction in the relaxation of H-polymers from detailed, 3is-long, atomistic molecular dynamics simulations. N. Karayiannis and V. Mavrantzas
- MS22.** Linear-viscoelastic properties of long-chain branched polyolefin melts and their relation to molecular structure. H. Münstedt, D. W. Auhl, F. Stadler, J. Stange and C. Gabriel
- MS23.** An examination of entangled star polymers under shear using birefringence. A. Tezel and G. Leal
- MS24.** Nonlinear relaxation dynamics of entangled star polymers. L. A. Archer and J. H. Lee
- MS25.** Torque and normal force responses of branched polyethylene melts in reversing double-step strain flows. C. Sui and G. B. McKenna
- MS26.** The rheology and degradation of renewable resource polymers. P. A. Daly and G. M. Harrison
- COFFEE
- END
- POSTER SESSION & REFRESHMENTS    Lubbock Memorial Civic Center

# Thursday, February 17

## Morning

	Room 104/105	Room 107	Room 108/109	Room 111/112
	<b>Fluid Mechanics and Instability</b>	<b>Suspensions and Colloids</b>	<b>Experimental Methods</b>	<b>Entangled Melts &amp; Solutions</b>
8:05			<b>EM10.</b> A novel “cleat” geometry for quantitative rheological characterization of foods and biomaterials. <u>C. S. Nickerson</u> and <u>J. A. Kornfield</u>	<b>MS27.</b> Morphology and viscoelastic properties of polystyrene blended with fully condensed polyhedral oligomeric silsesquioxane. <u>M. Namani</u> , <u>H.-P. Geng</u> and <u>A. Lee</u>
8:30	<b>FI1.</b> Post-breakup asymptotics for a Giesekus jet. <u>M. Renardy</u>	<b>SC31.</b> NMR profilometry. <u>S. A. Altobelli</u> , <u>R. R. Rao</u> and <u>L. A. Mondy</u>	<b>EM11.</b> Determination of melt extensional viscosity of polymers and polymer blends with a new elongation fixture for rotational rheometers. <u>A. J. Franck</u> and <u>M. L. Yao</u>	<b>MS28.</b> Effects of functionalized nanoparticles on the morphology of polystyrene-block-polybutadiene-block-polystyrene (SBS) triblock copolymers. <u>D. B. Drzakowski</u> and <u>A. Lee</u>
8:55	<b>FI2.</b> Effect of flow instability on molecular conformation and drag. <u>R. Sureshkumar</u> and <u>B. Sadanandan</u>	<b>SC32.</b> Properties of a concentrated suspension flowing through an abrupt expansion measured by NMRI. <u>T. Moraczewski</u> and <u>N. C. Shapley</u>	<b>EM12.</b> Mixing and extensional rheology of bread dough. <u>T. S. Ng</u> , <u>M. Padmanabhan</u> and <u>G. H. McKinley</u>	<b>MS29.</b> Scaling relations for shear-induced isothermal crystallization of poly(butene-1) samples. <u>H. M. Laun</u> , <u>C. Hadinata</u> , <u>M. Ruellmann</u> and <u>C. Gabriel</u>
9:20	<b>FI3.</b> Nonlinear hydrodynamics of time-dependent viscoelastic Taylor-Couette flows of dilute polymer solutions. <u>D. G. Thomas</u> , <u>R. Sureshkumar</u> and <u>B. Khomami</u>	<b>SC33.</b> Frame invariant suspension rheology applied to the abrupt contraction and expansion. <u>R. M. Miller</u> and <u>J. F. Morris</u>	<b>EM13.</b> Validation of a controlled-strain simple shear rheometer for vocal fold tissue characterization. <u>R. W. Chan</u> , <u>M. Rodriguez</u> and <u>B. Lee</u>	<b>MS30.</b> Modeling flow-enhanced crystallization in fiber spinning. <u>A. J. McHugh</u> , <u>W. Kohler</u> and <u>P. Shrikhande</u>
9:45			COFFEE	
10:10	<b>FI4.</b> Dilute worm-like micellar solutions: Model and numerics in Taylor-Couette flow. <u>L. P. Cook</u> and <u>L. F. Rossi</u>	<b>SC34.</b> Diffusive coarsening of foams: von Neumann’s law in 3D. <u>A. M. Kraynik</u> , <u>S. Hilgenfeldt</u> and <u>D. Weaire</u>	<b>EM14.</b> Solving wall slip in parallel disk rheometry data using Tikhonov regularisation. <u>S. Zahirovic</u> , <u>L. Y. Yeow</u> , <u>D. V. Boger</u> and <u>F. Grieser</u>	<b>MS31.</b> Kinetics in melting of polymers: A route to new state of melt. <u>S. Rastogi</u> , <u>D. Lippits</u> , <u>G. Peters</u> and <u>H. Meijer</u>
10:35	<b>FI5.</b> Slow flow hole pressure for a tube on one wall of a plane channel. <u>B. Caswell</u> , <u>V. Symeonidis</u> and <u>G. E. Karniadakis</u>		<b>EM15.</b> Testing polymers under supercritical CO <sub>2</sub> using a pressure cell. <u>E. F. Brown</u>	<b>MS32.</b> In situ measurements of molecular orientation in commercial thermotropic liquid crystalline polymers in transient shear flows. <u>S. Rendon</u> , <u>W. Burghardt</u> and <u>R. Bubeck</u>
11:00	<b>FI6.</b> A continuum mechanical gradient theory with application to turbulent flows. <u>M. Alizadeh</u>	<b>SC36.</b> Flow characteristics of tailings paste for surface disposal. <u>D. F. James</u> , <u>M. Kwak</u> and <u>K. Klein</u>	<b>EM16.</b> Chemorheological degradation of natural rubber at elevated temperatures: Experiments and simulation. <u>A. Wineman</u> , <u>J. A. Shaw</u> and <u>A. Jones</u>	<b>MS33.</b> Modeling of the shear-induced isotropic-to-nematic phase transition of side chain liquid-crystalline polymers. <u>S. Hess</u> and <u>P. Ilg</u>
11:25	<b>FI7.</b> Determination of the flow and mixing in a continuous mixer using 3D Finite Element Methods simulation. <u>J. L. Kokini</u> and <u>B. Ashokan</u>	<b>SC37.</b> Injection molding of a ceramic suspension: Rheological measurements and computational modeling. <u>R. R. Rao</u> , <u>T. A. Baer</u> , <u>L. A. Mondy</u> , <u>L. Halblieb</u> , <u>A. M. Grillet</u> and <u>P. Yang</u>	<b>EM17.</b> Combinatorial squeezing-flow array for grading of asphalt. <u>A. E. Senador</u> , <u>M. T. Shaw</u> , <u>P. T. Mather</u> and <u>Y. Patil</u>	<b>MS34.</b> Non-linear dynamics in side-chain liquid crystal polymers. <u>L. Noirez</u>
11:50			END	





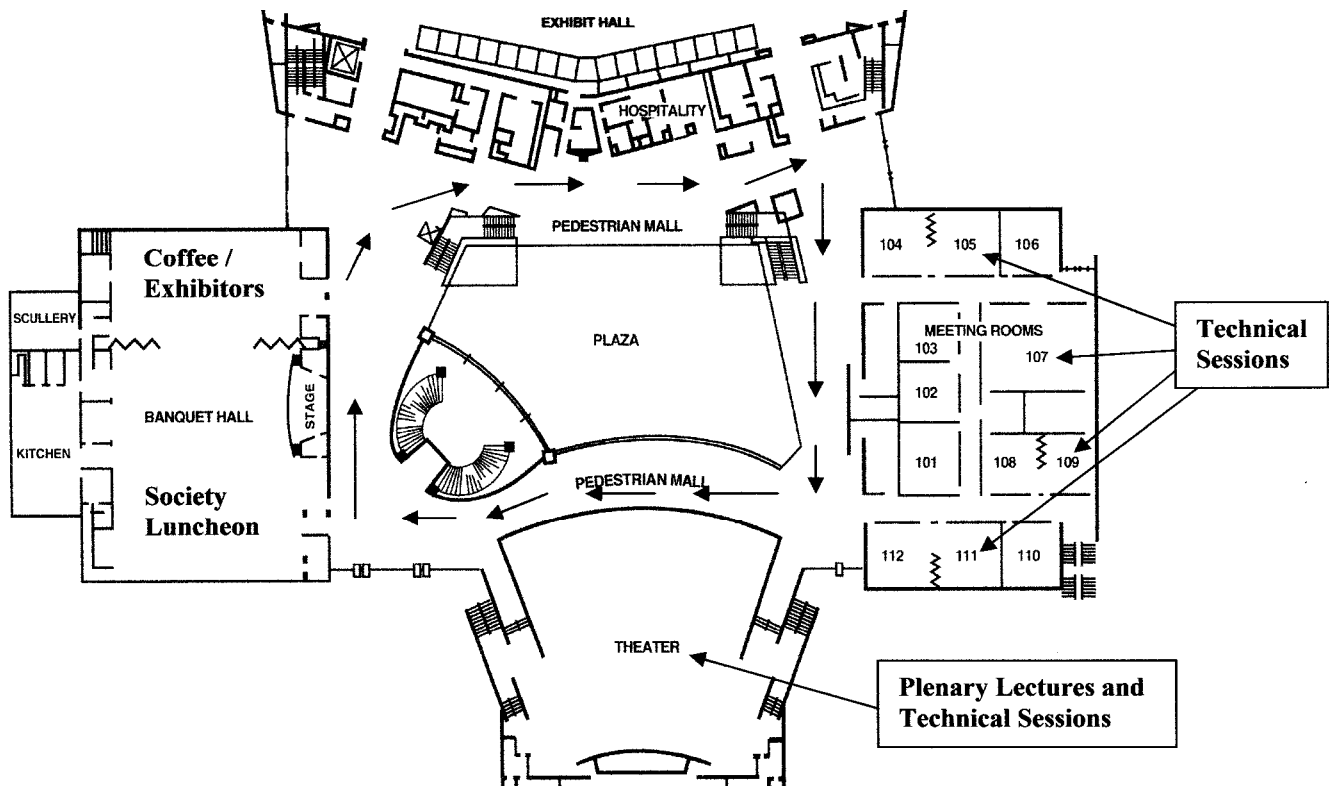
# Poster Session

Wednesday 6:00 PM Lubbock Memorial Civic Center

- PO1.** Development of a microfluidic rheometer for measuring the complex modulus and complex viscosity of complex fluids. J. A. Pathak and K. L. Beers
- PO2.** Rheological behavior of waterborne polyurethane dispersions. S. A. Madbouly, J. U. Otaigbe, A. K. Nanda and D. A. Wicks
- PO3.** Gelation kinetics of waterborne polyurethane dispersions studied by rheometric methods. S. A. Madbouly, J. U. Otaigbe, A. K. Nanda and D. A. Wicks
- PO4.** Crossing dynamics of surfactant threadlike micelles. S. Yamamoto and S.-A. Hyodo
- PO5.** Strain hardening occurrence in uniaxial elongational viscosity by addition of a small amount of PTFE nanofiber. T. Kurose, T. Takahashi and K. Koyama
- PO6.** Transient behavior of Boger fluids under extended shear flow in a cone-and-plate rheometer. V. M. Calado, J. M. White and S. J. Muller
- PO7.** Apparent mass uptake measurements in thin polymer films using a quartz crystal microbalance: Errors induced by film expansion stresses. L. Banda, M. Alcoutabi and G. B. McKenna
- PO8.** Edge effects from imperfect loadings (excess or deficit) in rotational parallel plate rheometry. D. W. Giles and R. W. Hooper
- PO9.** Interfacial tension errors in the Cohen and Carriere analysis of fiber retraction. S. Velankar and J. Martin
- PO10.** Rheological behavior of oligoimide/clay nanocomposite dispersions. G. M. Divoux, V. E. Yudin and J. U. Otaigbe
- PO11.** Evaluating the effectiveness of processing techniques for PP nanocomposites through rheology. M. K. Dolgovskij and C. W. Macosko
- PO12.** Case study: Vane rheometry superiority over smooth disk geometry in evaluating rubber-particle-filled asphalt emulsions as cold-patch sealants. D. J. Moonay
- PO13.** The impact of nanoconfinement, surfaces and interfaces on the structural relaxation of polymeric glasses monitored on the molecular-scale by fluorescence. R. D. Priestley, L. J. Broadbelt and J. M. Torkelson
- PO14.** Surface gelation of beta-casein. G. B. Bantchev and D. K. Schwartz
- PO15.** Multi correlator fiber-optics dynamic light scattering apparatus. G. B. Bantchev, P. Russo and R. L. McCarley
- PO16.** Ballistic performance and squeeze-flow characterization of STFs reinforced by short discontinuous fibers. C. H. Nam, M. J. Decker, C. Halbach, E. D. Wetzel and N. J. Wagner
- PO17.** A new pressurizable dilatometer for measuring the time-dependent bulk modulus of polymers. Y. Meng, P. A. O'Connell, G. B. McKenna and S. L. Simon
- PO18.** A new phenomenological rheology model to interpret oscillatory shear data. C. P. Lusignan
- PO19.** Melt rheology of poly(vinylidene fluoride): Evidence of long chain branching?. L. F. Scanu, J. M. DeSimone, G. W. Roberts and S. A. Khan
- PO20.** Molecular weight dependence of fragility in polystyrene and poly(vinylpyridine). P. G. Santangelo, R. Casalini, G. C. Robertson and C. M. Roland
- PO21.** Are we in equilibrium yet, Charlie Brown?. Q. Li, D. J. Plazek and S. L. Simon
- PO22.** Interfacial dynamics spectral boundary element algorithm. J. Wang, Y. Wang and P. Dimitrakopoulos
- PO23.** Micro-macro simulation with anisotropic FENE dumbbell model. S. Song, J. M. Kim, K. H. Ahn and S. J. Lee
- PO24.** Modeling fiber spinning of PLA. W. Kohler, A. J. McHugh and P. Shrikhande
- PO25.** Modeling the blown film process. L. K. Henrichsen and A. J. McHugh
- PO26.** Real-time access to experiment and theory in the rheology class room. H. H. Winter and M. Mours
- PO27.** Dynamic Monte Carlo simulation of polymer shear flow. S. Al-Hassan and J. R. Dorgan
- PO28.** Modeling aerosol transport in the vicinity of urban vegetative canopies. J. W. Leggoe, E. D. Eastep, J. N. Rendon and J. L. Williams
- PO29.** HAAKE MARS - a new dimension in modularity. J. Nijman



## Floor Plan – Lubbock Memorial Civic Center



## Social Program

**Sunday, February 13**

### Welcoming Reception

7:00 PM – 9:00 PM Atrium of the Holiday Inn and Towers

**Monday, February 14**

### Society Luncheon

12:00 – 1:40 PM Lubbock Memorial Civic Center

Prof. David Boger, Laureate Professor at *University of Melbourne*, will give a talk titled “**Rheology and the Triple Bottom Line**”.

### Society Reception

6:15 PM – 10:00 PM Caprock Winery

Busses will leave for the winery from the Holiday Inn at 6:15 PM.

**Tuesday, February 15**

### Business Meeting

5:40 PM

Room 107, Lubbock Mem. Civic Center

### Awards Reception

7:00 PM – 8:00 PM Museum of Texas Tech

Busses will leave for the museum from the Holiday Inn at 6:45 PM.

### Awards Banquet

8:00 PM – 10:00 PM Museum of Texas Tech

**Wednesday, February 16**

### Poster Session Refreshments

6:00 PM – 8:00 PM Lubbock Memorial Civic Center