

Online Program (OP)

Online Discussion Sessions

Monday – Thursday, 9:50am – 11:55am Eastern

There will be two parallel discussion sections. Each session will start with a full-length (20 minute) virtual keynote presentation then authors of flash presentations will be allowed 10 minutes to provide a quick (3 minute) overviews of their key findings followed by questions and discussion with the audience.

Monday (Zoom):

- **Polymer: melts, composites and AM** Chairs: Liheng Cai & Nicole Demarquette
- **Gels, glasses and networks** Chairs: Dana Grecov, Simon Rogers

Tuesday (Zoom):

- **Polymer: solutions, structure and modeling** Chairs: Dimitris Vlassopoulos & Marie-Claude Heuzey
- **Methods and applied rheology** Chairs: Joerg Laeuger & Patrick Anderson

Wednesday (Zoom):

- **Nature-based soft matter** Chairs: Daphne Weihs & Helen Joyner
- **Foams, emulsions and interfaces** Chairs: Rehka Rao & Ruth Cardinaels

Thursday (Gather.town Lecture Hall):

- **Open Rheology Discussion** Chairs: Luca Lanotte & George Petekidis
- **Posters**

Monday 1

Online Discussion: Polymer: melts, composites and AM

Chairs: Liheng Cai & Nicole Demarquette

Paper #	Title	Author
VP5	Can short, unentangled polymers be effective (self)compatibilizers in polymer blends?	Moldenaers, Paula *Keynote*
VP1	Re-entrant melting in interpenetrating and interconnected grafted nano cylinders from amphiphilic star block copolymers	Moghimi, Esmaeel
VP2	Microscopic dynamics and shear rheology of unentangled polymer nanocomposite melts: simulation and theoretical description	Skountzos, Emmanuel
VP4	Nonmonotonic variation of terminal relaxation in star-linear blends	Shanbhag, Sachin
VP6	Use of tailored blend morphologies to obtain electrically conductive composites	Strugova, Daria
VP7	Investigation of compatibilization of PE/PP blend by graphene	Sultana, S M Nourin
VP86	A numerical study of extensional flow-induced crystallization in filament stretching rheometry	Anderson, Patrick
VP8	Die shape optimization for extrudate swell using feedback control	Spanjaards, Michelle
VP9	Capillary extrusion of entangled polymer melts at high stress	Cheng, Shiwang
--	Molecular view on mechanical reinforcement in polymer nanocomposites: new insights from small-angle neutron scattering	Cheng, Shiwang
VP10	Sculpting hydrogels using additive advective processing	Bayles, Alexandra
VP11	Extrudate instabilities in fused filament fabrication additive manufacturing	Swain, Zachary
VP13	Reprocessable, soft, 3D printable elastomers	Cai, Liheng
VP76	Assessing rheological properties of highly-filled polymers for material extrusion additive manufacturing of metallic parts	Ancé, Sarah

Monday 2

Online Discussion: Gels, glasses and networks

Chairs: Dana Grecov, Simon Rogers

Paper #	Title	Author
VP20	Uses of large amplitude oscillatory shear in food products	Joyner, Helen *Keynote*
VP14	Probing in-cage particle dynamics in hard sphere glasses with high frequency rheometry	Petekidis, George
VP15	Thixotropy, non-monotonic stress relaxation, and the second law of thermodynamics	Joshi, Yogesh
VP17	Elastic storage during flow of yield stress materials	Marchand, Manon
VP18	Linear viscoelasticity of associating star polymer networks	Robe, Dominic
VP19	Simulation of Rhamnolipids	Antony, John
VP21	An application of lubrication theory for the flow of liquid crystals in a slider bearing	Grecov, Dana
VP22	The impact of multiple fluids on the purely-elastic instabilities that arise in a microfluidic flow focusing device	Houston, Gemma
VP73	Colloid-polymer mixtures revisited: assessing the role of macromolecular depletant	Vlassopoulos, Dimitris
VP75	Influence of surface roughness on the yielding of thermo-reversible colloidal gels	Müller, Florence J
VP78	On the inverse quenching technique applied to gelatin solutions	Avallone, Pietro R.
VP87	Lubricant effect of graphene in polystyrene	Genoyer, Julie
VP88	Ultrasonic dispersion and time evolution of concentrated cellulose nanocrystal suspensions characterized by rheology	Girard, Mélanie

Tuesday 1

Online Discussion: Polymer: solutions, structure and modeling

Chairs: Dimitris Vlassopoulos & Marie-Claude Heuzey

Paper #	Title	Author
VP32	Photopolymerization of methacrylate: From conversion via rheology to mechanical properties	Cardinaels, Ruth *Keynote*
VP23	Characterizing the Linear viscoelastic behavior of Bimodal polyethylene using their continuous relaxation spectra	Kwakye-Nimo, Shadrach
VP24	Molecular origin of rheological and mechanical properties of well-defined Polystyrene POM-POM model systems	Hirschberg, Valerian
VP26	Rheology of semiflexible polymers in shear flow via Brownian dynamics and quasi-two-parameter theory	Pincus, Isaac
VP3	Mechanical degradation of polyacrylamide solutions in nanoparticle suspensions	Mora, Andrea
VP28	Charge Screening Effects on the Rheology of Polymerized Ionic Liquid Solutions in the Semidilute Unentangled Regime	Matsumoto, Atsushi
VP30	Melt rupture and wall slip of metallocene-catalyzed bimodal molecular weight distribution polyethylene under simple shear	Sattari, Mohammadali
VP31	Unravelling the transient network topology of hydrophobically associating multiblock copolymers and their resulting elasticity and relaxation times	Huysecom, An- Sofie
VP33	Understanding the morphology and self-stratification in multiphase polymer colloidal films	Singh, Piyush
--	Protocol-agnostic material functions and more accurate flow diagnostics based on recoverable strain measurements	Singh, Piyush
--	On simultaneous fitting of nonlinear and linear rheology data: Preventing a false sense of certainty	Singh, Piyush
VP27	A two-species model for the rheology of associative polymer solutions from nonequilibrium thermodynamics	Stephanou, Pavlos
VP74	Evaporative shape transformations in polymeric sessile droplets	Belanger, John
VP77	Active particles in external fields	Shaik, Vaseem A.
VP80	Determination of the Molecular Weight Distribution of Ultra-High Molecular Weight Polyethylene from Solution Rheology	Ianniello, Vincenzo

Tuesday 2

Online Discussion: Methods and applied rheology

Chairs: Joerg Laeuger & Patrick Anderson

Paper #	Title	Author
VP37	Relating photovoltaic module stresses to encapsulant thermomechanics	Roberts, Christine *Keynote*
VP36	Impact of various environmental chemical conditions on the rheological behaviour of a system of mixed clay gels using response surface methodology	Boulet, Camille
VP38	Extensional Rheology and Pinching Dynamics of Associative Polysaccharide Solutions	Lu, Xinyu
VP94	An extensional rheometer for synchrotron SAXS/WAXS to study deformation-induced crystallization near T _g	Kornfield, Julia A.
VP39	Calculation method for the relaxation time spectra of viscoelastic fluids using dynamic moduli	Hamel Ascanio, Luis
VP40	The rheology of methane and carbon dioxide hydrates at extreme high pressures	Guerra, Andre
VP41	Interplay of inertia and stress diffusion in shear flows of viscoelastic fluids	Sharma, Shweta
VP43	The effect of rheological properties on pyroelectrodynamical jets	Tammaro, Daniele
VP44	Koopman with control for constitutive law identification	Southern, Emily
VP45	Development of a lab simulation process to evaluate melt fracture of under water pelletized polymer	Jin, Yi
VP46	Advances in rheo-optical methods	Laeuger, Joerg
VP70	Effect of aromatic and non-aromatic solvents in the interfacial viscoelasticity of Brazilian asphaltenes	Soares, Isabela
VP72	Super resolution microscopy to study rheological transitions during egg-white cooking	Bonilla, Jose

Wednesday 1

Online Discussion: Nature-based soft matter

Chairs: Daphne Weihs & Helen Joyner

Paper #	Title	Author
VP47	Non-linear transient stretching and relaxation of highly deformed vesicles reveals a deflation-dependent bending modulus	Schroeder, Charles *Keynote*
VP48	Saliva rheology and its effect on aerosol generation during sneezing	Rodriguez Hakim, Mariana
VP49	Spinning a yarn of the molecular rheology of natural silk spinning: Sticky reptation in extensional flow	Schaefer, Charley
VP50	Rheology and direct write printing of chitosan - graphene oxide nanocomposite hydrogels for differentiation of neuroblastoma cells	Thareja, Prachi
VP51	Diffusion of proteins in the continuous phase of block polymer liquid crystals	Valentine, Connor
VP52	Millifluidic bulge test reveals local and bulk mechanical properties of engineered biofilms	Chittur, Priya
VP53	Mechanical pre-metastatic lung terraforming by breast cancer-derived extracellular vesicles	Weihs, Daphne
VP54	Determining the yield stress of a biopolymer-bound soil composite for extrusion-based 3D printing applications	Biggerstaff, Adrian
VP55	Physical aging in chocolate subsequent to thermal and mechanical rejuvenation	Bhattacharyya, Tulika
VP56	Drying-induced stratification in complex mixes of dairy proteins	Lanotte, Luca
VP57	Application of high pressure shear rheology to assess CO ₂ gas bubble nucleating proficiency of native starch particles and dispersed proteins	Zink, Joël
VP59	Extensional stress-relaxation measurements on wheat flour dough – The key to finalizing the Fractional K-BKZ framework?	Meeus, Yannick
VP82	Mechanical and Structural Analysis of Channel Networks in Bacterial Biofilms	Geisel, Steffen

Wednesday 2

Online Discussion: Foams, emulsions and interfaces

Chairs: Rehka Rao & Ruth Cardinaels

Paper #	Title	Author
VP65	Nanometric sized ions as foam Stabilizers	Bauduin, Pierre *Keynote*
VP60	Colloidal gelation in foam: probing the impact of elastic continuous phases on foam mechanics	Salonen, Anniina
VP61	Delayed elastic and ageing creep response of foams	Lavergne, François
VP62	An essential factor of perfluoroalkyl surfactant attributing to efficacy in firefighting foams	Banerjee, Anirudha
VP63	Simulating foam and bubble suspensions using an extended stokesian dynamics approach with bubble interaction	Rosenbaum, Eilis
VP64	Controlling the morphology of polymeric foams: an experimental and numerical investigation	Villone, Massimiliano
VP66	Foam coarsening under steady shear : Interplay between bubble rearrangement and film thinning dynamics	Saint-Jalmes, Arnaud
VP67	Evaporation and atomization of ultra-stable emulsion droplets	Rastogi, Preetika
VP68	Microstructure and interfacial rheology of ellipsoids at interfaces - role of surface modification	Kumar, Hemant
VP69	Structure-rheology relationship of β -lactoglobulin's quaternary structure through interfacial rheology	Ramamirtham, Sashikumar
VP71	Drag on a spherical particle at the air-liquid interface: Interplay between compressibility, Marangoni flow and surface viscosities	Jaensson, Nick
VP84	Interfacial Rheology of phospholipid monolayers	Renggli, Damian
VP91	Yielding of model viscoplastic interfaces in shear and compression: landmark observations and constitutive modelling	Alicke, Alexandra

Thursday

Open Rheology Discussion
Live in the Gather Lecture Hall

Chairs: Luca Lanotte & George Petekidis

Paper #	Title	Author
VP85	Fast flows on linear and branched wormlike micelles	Pasquino, Rossana *Keynote*
VP25	The Role of Hydrodynamics in Flowing Semidilute Solutions of Ring/Linear Polymer Blends	Sing, Charles E.
VP58	Propagating high stress fronts responsible for shear thickening in a cornstarch suspension	Urbach, Jeffrey S.
VP79	Nonlinear shear rheometry of unentangled polymers	Costanzo, Salvatore
VP81	Frequency dependence and critical transition can be induced by a negligible Van der Waals force in non-Brownian Newtonian Suspensions	Minale, Mario
VP83	Entrance flow of unfoamed and foamed Herschel-Bulkley fluids	Mishra, Kim S.
VP89	Rheological implications of pH induced particle-particle association in aqueous suspension of an anisotropic charged clay	Shoaib, Mohmmad
...	Alteration of soft glassy dynamics in aqueous suspensions of an anisotropic charged swelling clay through pH changes	Shoaib, Mohmmad
VP92	Droplet-based microfluidic tool to quantify viscosity of concentrating multicomponent protein solutions	Yang, Deyu
VP93	Processing irreversibly adsorbed, solvent-responsive nanoparticles at the oil-water interface	Walker, Lynn

Thursday

Online Poster Session (VP100 and up)

Paper #	Title	Author
VP100	Effect of specific surface area on the rheology of graphene nanoplatelet-filled PEO composites	Haridas, Haritha
VP101	Pickering Interfacial Photocatalysis of o-Xylene	Maji, Nitai Chandra
VP102	Analytical modeling of interfacial diffusion for symmetric bilayer entangled polymer films	Behzadfar, Ehsan