# Shi-Qing Wang

List of Publications by Year
in descending order



| | | | |
|---|---|---|---|
| 66 papers | 2,716 citations | 136950<br>32 h-index | 182427<br>51 g-index |
| 74 all docs | 74 docs citations | 74 times ranked | 1242 citing authors |

| # | Article | IF | Citations |
|---|---|---|---|
| 1 | New theoretical considerations in polymer rheology: Elastic breakdown of chain entanglement network. Journal of Chemical Physics, 2007, 127, 064903. | 3.0 | 163 |
| 2 | Direct Visualization of Continuous Simple Shear in Non-Newtonian Polymeric Fluids. Physical Review Letters, 2006, 96, 016001. | 7.8 | 132 |
| 3 | Why Is Crystalline Poly(lactic acid) Brittle at Room Temperature?. Macromolecules, 2019, 52, 5429-5441. | 4.8 | 114 |
| 4 | Homogeneous Shear, Wall Slip, and Shear Banding of Entangled Polymeric Liquids in Simple-Shear Rheometry: A Roadmap of Nonlinear Rheology. Macromolecules, 2011, 44, 183-190. | 4.8 | 113 |
| 5 | Banding in Simple Steady Shear of Entangled Polymer Solutions. Macromolecules, 2008, 41, 2663-2670. | 4.8 | 111 |
| 6 | Relaxation Dynamics in Mixtures of Long and Short Chains:Â Tube Dilation and Impeded Curvilinear Diffusion. Macromolecules, 2003, 36, 5355-5371. | 4.8 | 92 |
| 7 | Nonlinear Flow Behavior of Entangled Polymer Solutions:Â Yieldlike Entanglementâ˘'Disentanglement Transition. Macromolecules, 2004, 37, 9083-9095. | 4.8 | 89 |
| 8 | Elastic Breakup in Uniaxial Extension of Entangled Polymer Melts. Physical Review Letters, 2007, 99, 237801. | 7.8 | 83 |
| 9 | Use of Particle-Tracking Velocimetry and Flow Birefringence To Study Nonlinear Flow Behavior of Entangled Wormlike Micellar Solution:â€‰ From Wall Slip, Bulk Disentanglement to Chain Scission. Macromolecules, 2008, 41, 1455-1464. | 4.8 | 83 |
| 10 | Steady state measurements in stress plateau region of entangled polymer solutions: Controlled-rate and controlled-stress modes. Journal of Rheology, 2008, 52, 957-980. | 2.6 | 77 |
| 11 | A phenomenological molecular model for yielding and brittle-ductile transition of polymer glasses. Journal of Chemical Physics, 2014, 141, 094905. | 3.0 | 75 |
| 12 | How Melt-Stretching Affects Mechanical Behavior of Polymer Glasses. Macromolecules, 2012, 45, 6719-6732. | 4.8 | 70 |
| 13 | New Experiments for Improved Theoretical Description of Nonlinear Rheology of Entangled Polymers. Macromolecules, 2013, 46, 3147-3159. | 4.8 | 70 |
| 14 | Step Shear of Entangled Linear Polymer Melts: New Experimental Evidence for Elastic Yielding. Macromolecules, 2009, 42, 6261-6269. | 4.8 | 69 |
| 15 | Shear banding or not in entangled DNA solutions depending on the level of entanglement. Journal of Rheology, 2009, 53, 73-83. | 2.6 | 69 |
| 16 | Observations of Wall Slip and Shear Banding in an Entangled DNA Solution. Macromolecules, 2008, 41, 2644-2650. | 4.8 | 67 |
| 17 | Exploring stress overshoot phenomenon upon startup deformation of entangled linear polymeric liquids. Journal of Rheology, 2009, 53, 1389-1401. | 2.6 | 62 |
| 18 | What Are the Origins of Stress Relaxation Behaviors in Step Shear of Entangled Polymer Solutions?. Macromolecules, 2007, 40, 8031-8039. | 4.8 | 60 |

| # | Article | IF | Citations |
|---|---|---|---|
| 19 | Universal scaling characteristics of stress overshoot in startup shear of entangled polymer solutions. Journal of Rheology, 2008, 52, 681-695. | 2.6 | 56 |
| 20 | Fast flow behavior of highly entangled monodisperse polymers. Rheologica Acta, 1998, 37, 415-423. | 2.4 | 55 |
| 21 | Universal scaling behavior in startup shear of entangled linear polymer melts. Journal of Rheology, 2009, 53, 617-629. | 2.6 | 51 |
| 22 | Exploring the transition from wall slip to bulk shearing banding in well-entangled DNA solutions. Soft Matter, 2009, 5, 780-789. | 2.7 | 48 |
| 23 | Mechanisms for different failure modes in startup uniaxial extension: Tensile (rupture-like) failure and necking. Journal of Rheology, 2013, 57, 223-248. | 2.6 | 47 |
| 24 | Large amplitude oscillatory shear behavior of entangled polymer solutions: Particle tracking velocimetric investigation. Journal of Rheology, 2008, 52, 341-358. | 2.6 | 46 |
| 25 | Exploring Origins of Interfacial Yielding and Wall Slip in Entangled Linear Melts during Shear or after Shear Cessation. Macromolecules, 2009, 42, 2222-2228. | 4.8 | 46 |
| 26 | Salient Features in Uniaxial Extension of Polymer Melts and Solutions: Progressive Loss of Entanglements, Yielding, Non-Gaussian Stretching, and Rupture. Macromolecules, 2011, 44, 5427-5435. | 4.8 | 43 |
| 27 | Interfacial stick-slip transition in simple shear of entangled melts. Journal of Rheology, 2006, 50, 641-654. | 2.6 | 38 |
| 28 | On Chain Statistics and Entanglement of Flexible Linear Polymer Melts. Macromolecules, 2007, 40, 8684-8694. | 4.8 | 38 |
| 29 | Shear banding in entangled polymers in the micron scale gap: a confocal-rheoscopic study. Soft Matter, 2015, 11, 8058-8068. | 2.7 | 38 |
| 30 | Basic characteristics of uniaxial extension rheology: Comparing monodisperse and bidisperse polymer melts. Journal of Rheology, 2011, 55, 1247-1270. | 2.6 | 37 |
| 31 | A Coherent Description of Nonlinear Flow Behavior of Entangled Polymers as Related to Processing and Numerical Simulations. Macromolecular Materials and Engineering, 2007, 292, 15-22. | 3.6 | 35 |
| 32 | Is shear banding a metastable property of well-entangled polymer solutions?. Journal of Rheology, 2012, 56, 1413-1428. | 2.6 | 34 |
| 33 | Crazing and yielding in glassy polymers of high molecular weight. Polymer, 2020, 197, 122445. | 3.8 | 33 |
| 34 | Rupture in rapid uniaxial extension of linear entangled melts. Rheologica Acta, 2010, 49, 1179-1185. | 2.4 | 31 |
| 35 | How polymeric solvents control shear inhomogeneity in large deformations of entangled polymer mixtures. Rheologica Acta, 2011, 50, 97-105. | 2.4 | 27 |
| 36 | Elastic Yielding in Cold Drawn Polymer Glasses Well below the Glass Transition Temperature. Physical Review Letters, 2013, 110, 065506. | 7.8 | 26 |

| # | Article | IF | Citations |
|---|---|---|---|
| 37 | Nonlinear rheology of entangled polymers at turning point. Soft Matter, 2015, 11, 1454-1458. | 2.7 | 26 |
| 38 | Crazing and strain localization of polycarbonate glass in creep. Polymer, 2013, 54, 3363-3369. | 3.8 | 25 |
| 39 | Elastic Yielding after Cold Drawing of Ductile Polymer Glasses. Macromolecules, 2014, 47, 3661-3671. | 4.8 | 25 |
| 40 | Polystyrene Glasses under Compression: Ductile and Brittle Responses. ACS Macro Letters, 2015, 4, 1072-1076. | 4.8 | 24 |
| 41 | Mapping Brittle and Ductile Behaviors of Polymeric Glasses under Large Extension. ACS Macro Letters, 2015, 4, 1110-1113. | 4.8 | 23 |
| 42 | Strain Hardening During Uniaxial Compression of Polymer Glasses. ACS Macro Letters, 2014, 3, 784-787. | 4.8 | 19 |
| 43 | Nonlinear stress relaxation behavior of ductile polymer glasses from large extension and compression. Polymer, 2015, 81, 129-139. | 3.8 | 19 |
| 44 | Chain Network: Key to the Ductile Behavior of Polymer Glasses. Macromolecules, 2018, 51, 1666-1673. | 4.8 | 19 |
| 45 | Elastic yielding after step shear and during LAOS in the absence of meniscus failure. Rheologica Acta, 2010, 49, 985-991. | 2.4 | 17 |
| 46 | Brittleâ€ductile transition in uniaxial compression of polymer glasses. Journal of Polymer Science, Part B: Polymer Physics, 2019, 57, 758-770. | 2.1 | 17 |
| 47 | How and Why Polymer Glasses Lose Their Ductility Due to Plasticizers. Macromolecules, 2017, 50, 2024-2032. | 4.8 | 14 |
| 48 | Inducing nano-confined crystallization in PLLA and PET by elastic melt stretching. Soft Matter, 2021, 17, 1457-1462. | 2.7 | 14 |
| 49 | Breakdown of Timeâ€"Temperature Equivalence in Startup Uniaxial Extension of Entangled Polymer Melts. Macromolecules, 2013, 46, 4151-4159. | 4.8 | 13 |
| 50 | Rheology of Entangled Polymers Not Far above Glass Transition Temperature: Transient Elasticity and Intersegmental Viscous Stress. Macromolecules, 2014, 47, 5839-5850. | 4.8 | 13 |
| 51 | Entangled Linear Polymer Solutions at High Shear: From Strain Softening to Hardening. Macromolecules, 2016, 49, 9647-9654. | 4.8 | 11 |
| 52 | Delineating nature of stress responses during ductile uniaxial extension of polycarbonate glass. Polymer, 2016, 89, 143-153. | 3.8 | 11 |
| 53 | Examining an Alternative Molecular Mechanism To Toughen Glassy Polymers. Macromolecules, 2020, 53, 323-333. | 4.8 | 11 |
| 54 | From Wall Slip to Bulk Shear Banding in Entangled Polymer Solutions. Macromolecular Chemistry and Physics, 2019, 220, 1800327. | 2.2 | 9 |

| # | Article | IF | Citations |
|---|---|---|---|
| 55 | Letter to the Editor: Melt rupture unleashed by few chain scission events in fully stretched strands. Journal of Rheology, 2019, 63, 105-107. | 2.6 | 8 |
| 56 | Origin of mechanical stress and rising internal energy during fast uniaxial extension of SBR melts. Polymer, 2017, 124, 68-77. | 3.8 | 7 |
| 57 | Strain localization during squeeze of an entangled polymer melt under constant force. Journal of Rheology, 2018, 62, 491-499. | 2.6 | 7 |
| 58 | Double Yielding in Deformation of Semicrystalline Polymers. Macromolecular Chemistry and Physics, 2020, 221, 2000151. | 2.2 | 7 |
| 59 | Experiments-inspired molecular modeling of yielding and failure of polymer glasses under large deformation. , 2016, , 395-424. | | 7 |
| 60 | Watching shear thinning in creep: Entanglement-disentanglement transition. Polymer, 2017, 125, 254-264. | 3.8 | 6 |
| 61 | Exploring rheological responses to uniaxial stretching of various entangled polyisoprene melts. Journal of Rheology, 2019, 63, 763-771. | 2.6 | 6 |
| 62 | Effects of Molecular Weight Reduction on Brittleâ€“Ductile Transition and Elastic Yielding Due to Noninvasive Î³ Irradiation on Polymer Glasses. Macromolecules, 2017, 50, 2447-2455. | 4.8 | 4 |
| 63 | Uncommon nonlinear rheological phenomenology in uniaxial extension of polystyrene solutions and melts. Soft Matter, 2020, 16, 3705-3716. | 2.7 | 4 |
| 64 | Characterizing effects of fast melt deformation on entangled polymers in their glassy state. Journal of Chemical Physics, 2019, 151, 124906. | 3.0 | 3 |
| 65 | Nanoconfined Crystallization in Poly(lactic acid) (PLA) and Poly(ethylene terephthalate) (PET) Induced by Various Forms of Premeltâ€Deformation. Macromolecular Rapid Communications, 2023, 44, . | 3.9 | 3 |
| 66 | Inhomogeneous chain relaxation of entangled polymer melts from stepwise planar extension in absence of free surface. Journal of Rheology, 2020, 64, 1251-1262. | 2.6 | 2 |