

Selected Publications of R. G. Winkler

- R. G. Winkler, P. Reineker, and M. Schreiber
Dynamical calculation of entropy elastic forces in molecular chains
Europhys. Lett. **8**, 493 (1989)
- P. Reineker, R. G. Winkler
Deterministic chaos in the dynamics of a freely jointed molecular chain
Physics Letters A **141**, 264 (1989)
- R. G. Winkler, P. J. Ludovice, D. Y. Yoon, H. Morawitz
Computer simulations of n-alkane melts
J. Chem. Phys. **95**, 4709 (1991)
- R. G. Winkler, H. Morawitz, D. Y. Yoon
Novel molecular dynamics simulations at constant pressure
Mol. Phys. **75**, 669 (1992)
- R. G. Winkler
Extended-phase-space isothermal molecular dynamics: Canonical harmonic oscillator
Phys. Rev. A **45**, 2250 (1992)
- R. G. Winkler, P. Reineker
Finite size distribution and partition functions of Gaussian chains: Maximum entropy approach
Macromolecules **25**, 6891 (1992)
- R. G. Winkler, T. Matsuda, D. Y. Yoon
Stochastic dynamics simulations of polymethylene melts confined between solid surfaces
J. Chem. Phys. **98**, 729 (1992)
- M. Schulz, R. G. Winkler, P. Reineker
Reptation of polymer chains: A combined Monte Carlo and molecular dynamics study
Phys. Rev. B **48**, 581 (1993)
- R. Hentschke, R. G. Winkler
Molecular dynamics simulation study of the adsorption of chain alkanes from solution onto graphite
J. Chem. Phys. **99**, 5528 (1993)
- R. G. Winkler, P. Reineker, L. Harnau
Models and equilibrium properties of stiff molecular chains
J. Chem. Phys. **101**, 8119 (1994)
- M. Schulz, R. G. Winkler, P. Reineker
Random copolymers with short-range interaction in the equilibrium state: Mean field approximation and numerical studies
Phys. Rev. Lett. **73**, 1602 (1994)

- R. G. Winkler, V. Kraus, P. Reineker
Time reversible phase-space conserving molecular dynamics at constant temperature
J. Chem. Phys. **102**, 9018 (1995)
- J. P. Spatz, S. Sheiko, M. Möller, R. G. Winkler, P. Reineker, O. Marti
Forces affecting the specimen the in tapping mode
Nanotechnology **6**, 40 (1995)
- E. Yu. Kramarenko, R. G. Winkler, P. G. Khalatur, A. R. Khokhlov, P. Reineker
*Molecular dynamics study of adsorption of polymer chains with variable degree of rigidity:
I. static properties*
J. Chem. Phys. **104**, 4806 (1996)
- L. Harnau, R. G. Winkler, P. Reineker
Dynamic structure factor of semiflexible macromolecules in dilute solution
J. Chem. Phys. **104**, 6355 (1996)
- R. G. Winkler, J. P. Spatz, S. Sheiko, M. Möller, P. Reineker, O. Marti
Imaging material properties by resonant tapping force microscopy: A model investigation
Phys. Rev. B **54**, 8908 (1996)
- R. G. Winkler, M. Gold, P. Reineker
Collapse of polyelectrolyte macromolecules by counterion condensation and ion pair formation: A molecular dynamics simulation study
Phys. Rev. Lett. **80**, 3731 (1998)
- L. Harnau, R. G. Winkler, P. Reineker
Comment on "Chain motion in an unentangled polyethylene melt: A critical test of the Rouse model by molecular dynamics simulations and neutron spin echo spectroscopy"
Phys. Rev. Lett. **82**, 2408 (1999)
- L. Harnau, R. G. Winkler, P. Reineker
On the dynamics of polymer melts: Contribution of Rouse and bending modes
Europhys. Lett. **45**, 488 (1999)
- R. G. Winkler
Analytical calculation of the relaxation dynamics of partially stretched flexible chain molecules: Necessity of a wormlike chain approach
Phys. Rev. Lett. **82**, 1843 (1999)
- E. Yu. Kramarenko, I. I. Potemkin, A. R. Khokhlov, R. G. Winkler, P. Reineker
Surface micellar nanopattern formation of adsorbed diblock copolymer systems
Macromolecules **32**, 3495 (1999)
- T. Hofmann, R. G. Winkler, P. Reineker
Dynamics of a polymer chain in an elongational flow
Phys. Rev. E **61**, 2840 (2000)

- J. P. Spatz, P. Eibeck, S. Mössmer, M. Möller, E. Yu. Kramarenko, P. G. Khalatur, I. I. Potemkin, A. R. Khokhlov, R. G. Winkler, P. Reineker
Order-disorder transition in surface-induced nanopattern of diblock copolymer films
Macromolecules **33**, 150 (2000)
- R. G. Winkler, M. O. Steinhauser, P. Reineker
Complex formation in systems of oppositely charged macromolecules: A molecular dynamics simulation study
Phys. Rev. E **66**, 021802 (2002)
- R. G. Winkler
Deformation of semiflexible chains
J. Chem. Phys. **118**, 2919 (2003)
- M. Ripoll, K. Mussawisade, R. G. Winkler, G. Gompper
Low-Reynolds-number hydrodynamics of complex fluids by Multi-Particle-Collision dynamics
Europhys. Lett. **68**, 106 (2004)
- R. G. Winkler, A. G. Cherstvy
Critical adsorption of polyelectrolytes onto charged spherical colloids
Phys. Rev. Lett. **96**, 066103 (2006)
- K. Hur, R. G. Winkler, D. Y. Yoon
Comparison of ring and linear Polyethylene from molecular dynamics simulations
Macromolecules **39**, 3975 (2006)
- M. Ripoll, R. G. Winkler, G. Gompper
Star polymers in shear flow
Phys. Rev. Lett. **96**, 188302 (2006)
- E. P. Petrov, T. Ohrt, R. G. Winkler, P. Schwill
Diffusion and segmental dynamics of double-stranded DNA
Phys. Rev. Lett. **97**, 258101 (2006)
- L. Cannavacciuolo, R. G. Winkler, G. Gompper
Mesoscale simulations of polymer dynamic in microchannel flows
EPL **83**, 34007 (2008)
- M. Ripoll, P. Holmqvist, R. G. Winkler, G. Gompper, J. K. G. Dhont, M. P. Lettinga
Attractive colloidal rods in shear flow
Phys. Rev. Lett. **101**, 168302 (2008)
- G. Gompper, T. Ihle, D. M. Kroll, R. G. Winkler
Multi-particle collision dynamics – a particle-based mesoscale simulation approach to the hydrodynamics of complex fluids
Adv. Polym. Sci. **221**, 1 (2009)