

PUBLICATIONS IN REFEREED JOURNALS (* denotes corresponding author)

1. **V.G. Mavrantzas**, A.N. Beris,* “Theoretical study of wall effects on the rheology of dilute polymer solutions”, *J. Rheol.* **1992**, *36*, 175-213.
2. **V.G. Mavrantzas**, A.N. Beris,* "Modeling the rheology and flow-induced concentration changes in polymer solutions", *Phys. Rev. Lett.* **1992**, *69*, 273-276.
3. **V.G. Mavrantzas**, A. Souvaliotis, A.N. Beris,* “Pseudospectral calculations of stress-induced concentration changes in simple viscometric flows of polymer solutions”, *Theoret. Comput. Fluid Dynam.* **1993**, *5*, 3-31.
4. A.N. Beris,* **V.G. Mavrantzas**, “On the compatibility between various macroscopic formalisms for the concentration and flow of dilute polymer solutions”, *J. Rheol.* **1995**, *38*, 1235-1250.
5. B.J. Edwards, A.N. Beris,* **V.G. Mavrantzas**, “A model with two coupled Maxwell modes”, *J. Rheol.* **1996**, *40*, 917-942.
6. **V.G. Mavrantzas**, D.N. Theodorou,* “Atomistic simulation of polymer melt elasticity: Free energy calculation of an oriented polymer melt”, *Macromolecules* **1998**, *31*, 6310-6332.
7. V.A. Harmandaris, **V.G. Mavrantzas**, D.N. Theodorou,* “Atomistic molecular dynamics simulations of polydisperse linear polyethylene melts”, *Macromolecules* **1998**, *31*, 7934-7943.
8. **V.G. Mavrantzas**, A.N. Beris,* “A hierarchical model for surface effects on chain conformation and rheology of polymer solutions: A) General formulation”, *J. Chem. Phys.* **1999**, *110*, 616-627.
9. **V.G. Mavrantzas**, A.N. Beris,* “A hierarchical model for surface effects on chain conformation and rheology of polymer solutions: B) Application to a neutral surface”, *J. Chem. Phys.* **1999**, *110*, 628-638.
10. **V.G. Mavrantzas**, T. Boone, E. Zervopoulou, D.N. Theodorou,* “End-bridging Monte Carlo: A fast algorithm for atomistic simulation of condensed phases of long polymer chains”, *Macromolecules* **1999**, *32*, 5072-5096.
11. V.A. Harmandaris, **V.G. Mavrantzas**, D.N. Theodorou,* “Atomistic molecular dynamics simulations of stress relaxation upon cessation of steady-state uniaxial elongational flow”, *Macromolecules* **2000**, *33*, 8062-8076.
12. **V.G. Mavrantzas**, D.N. Theodorou,* “Atomistic Monte Carlo simulation of the elasticity of long-chain polyethylene melts: Dependence of chain degree of orientation on stress, molecular weight, and rate of elongation”, *Macromol. Theory Simul.* **2000**, *9*, 500-515. (Invited paper for special issue in honor of Prof. Oscar Friedrich Olaj).
13. **V.G. Mavrantzas**, D.N. Theodorou,* “Atomistic simulation of the birefringence of uniaxially stretched polyethylene melts”, *Comput. Theor. Polymer Sci.* **2000**, *10*, 1-13. (Invited paper for special issue in honor of Prof. Ueli Suter).
14. N.Ch. Karayiannis, **V.G. Mavrantzas**, D.N. Theodorou,* “Diffusion of small molecules in disordered media: study of the effect of kinetic and spatial heterogeneities”, *Chem. Eng. Sci.* **2001**, *56*, 2789-2801.
15. E. Zervopoulou, **V.G. Mavrantzas**, D.N. Theodorou,* “A new Monte Carlo simulation approach for the prediction of sorption equilibria of oligomers in polymer melts: Solubility of long alkanes in linear polyethylene”, *J. Chem. Phys.* **2001**, *115*, 2860-2875.
16. I.-E. Mavrantza, D. Prentzas, **V.G. Mavrantzas**,* C. Galiotis, “Detailed atomistic Molecular Dynamics simulation of the orthorhombic phase of polyethylene crystals and n-alkane paraffins with the COMPASS force field”, *J. Chem. Phys.* **2001**, *115*, 3937-3950.
17. A. Uhlherr,* **V.G. Mavrantzas**, M. Doxastakis, D.N. Theodorou, “Directed bridging methods for fast atomistic Monte Carlo simulations of bulk polymers”, *Macromolecules* **2001**, *34*, 8554-8568.
18. M. Doxastakis, **V.G. Mavrantzas**, D.N. Theodorou,* “Atomistic Monte Carlo simulation of cis-1,4 polyisoprene melts. I. Single temperature end-bridging Monte Carlo simulations”, *J. Chem. Phys.* **2001**, *115*, 11339-11351.
19. M. Doxastakis, **V.G. Mavrantzas**, D.N. Theodorou,* “Atomistic Monte Carlo simulation of cis-1,4 polyisoprene melts. II. Parallel-tempering end-bridging Monte Carlo simulations”, *J. Chem. Phys.* **2001**, *115*, 11352-11361.
20. V.A. Harmandaris, M. Doxastakis, **V.G. Mavrantzas**,* D.N. Theodorou, “Detailed molecular dynamics simulation of the self-diffusion of n-alkane and cis-1,4 polyisoprene oligomer melts”, *J. Chem. Phys.* **2002**, *116*, 436-446.

21. **V.G. Mavrantzas**,* H.C. Öttinger, “Atomistic Monte Carlo simulation of polymer melt elasticity: their nonequilibrium thermodynamics GENERIC formulation in a canonical ensemble”, *Macromolecules* **2002**, *35*, 960-975.
22. M.V. Apostolakis, **V.G. Mavrantzas**,* A.N. Beris, “Stress gradient-induced migration effects in the Taylor-Couette flow of a dilute polymer solution”, *J. Non-Newt. Fluid Mech.* **2002**, *102*, 409-445. (Invited paper for special issue in honor of Prof. Andreas Acrivos).
23. A. Uhlherr,* M. Doxastakis, **V.G. Mavrantzas**, D.N. Theodorou, S.J. Leak, N.E. Adam, P.E. Nyberg, “Atomic structure of a high polymer melt”, *Europhys. Lett.* **2002**, *57*, 506-511.
24. N. Ch. Karayiannis, **V.G. Mavrantzas**,* D.N. Theodorou, “A novel Monte Carlo scheme for the rapid equilibration of atomistic model polymer systems of precisely defined molecular architecture”, *Phys. Rev. Lett.* **2002**, *88*, 105503-1 105503-4.
25. A. Uhlherr,* S.J. Leak, N. Adam, P.E. Nyberg, M. Doxastakis, **V.G. Mavrantzas**, D.N. Theodorou, “Parallel, domain decomposition Monte Carlo for the fast simulation of large-scale bulk polymers”, *Comp. Phys. Commun.* **2002**, *144*, 1-22.
26. V.A. Harmandaris, D. Angelopoulou, **V.G. Mavrantzas**, D.N. Theodorou,* “Atomistic molecular dynamics simulation of diffusion in binary n-alkane/polyethylene melts”, *J. Chem. Phys.* **2002**, *116*, 7656-7665.
27. K.Ch. Daoulas, A.F. Terzis, **V.G. Mavrantzas**,* “Detailed atomistic Monte Carlo simulation of grafted polymer melts: I. Conformational and thermodynamic properties”, *J. Chem. Phys.* **2002**, *116*, 11028-11038.
28. N. Ch. Karayiannis, A.E. Giannousaki, **V.G. Mavrantzas**,* D.N. Theodorou, “Atomistic Monte Carlo simulation of strictly monodisperse long polyethylene melts through a generalized chain bridging algorithm”, *J. Chem. Phys.* **2002**, *117*, 5465-5479.
29. K.Ch. Daoulas, **V.G. Mavrantzas**,* D.J. Photinos, “Detailed atomistic Monte Carlo simulation of grafted polymer melts: II. Structural properties and NMR spectra”, *J. Chem. Phys.* **2002**, *118*, 1521-1532.
30. N. Ch. Karayiannis, A.E. Giannousaki, **V.G. Mavrantzas**,* “An advanced Monte Carlo method for the equilibration of model long-chain branched polymers with a well-defined molecular architecture: Detailed atomistic simulation of an H-shaped polyethylene melt”, *J. Chem. Phys.* **2003**, *118*, 2451-2454.
31. V.A. Harmandaris, **V.G. Mavrantzas**,* D.N. Theodorou, M. Kröger, J. Ramírez, H.C. Öttinger, D. Vlassopoulos, “Crossover from Rouse to entangled polymer melt regime: Signals from long, detailed atomistic molecular dynamics simulations, supported by rheological experiments”, *Macromolecules* **2003**, *36*, 1376-1387.
32. K.Ch. Daoulas, A.F. Terzis, **V.G. Mavrantzas**,* “Variable connectivity methods for the atomistic Monte Carlo simulation of inhomogeneous and/or anisotropic polymer systems of precisely defined chain length distribution: Tuning the spectrum of chain relative chemical potentials”, *Macromolecules* **2003**, *36*, 6674-6682.
33. A. Eilmès,* R.W. Munn, **V.G. Mavrantzas**, D.N. Theodorou, A. Góra, “Microscopic calculation of the static electric susceptibility of polyethylene”, *J. Chem. Phys.* **2003**, *119*, 11458-11466.
34. N.Ch. Karayiannis, **V.G. Mavrantzas**, D.N. Theodorou,* “Detailed atomistic simulation of the segmental dynamics and barrier properties of amorphous poly(ethylene terephthalate) and poly(ethylene isophthalate)”, *Macromolecules* **2004**, *37*, 2978-2995.
35. K. Foteinopoulou, **V.G. Mavrantzas**,* J. Tsamopoulos, “Numerical simulation of bubble growth in Newtonian and viscoelastic filaments undergoing stretching”, *J. Non-Newt. Fluid Mech.* **2004**, *122*, 177-200.
36. G. Tsolou, **V.G. Mavrantzas**,* D.N. Theodorou, “Detailed atomistic molecular dynamics simulation of *cis*-1,4-poly(butadiene)”, *Macromolecules* **2005**, *38*, 1478-1492.
37. K.Ch. Daoulas, V.A. Harmandaris, **V.G. Mavrantzas**,* “Detailed atomistic simulation of a polymer melt/solid interface: Structure, density and conformation of a thin film of polyethylene melt adsorbed on graphite”, *Macromolecules* **2005**, *38*, 5780-5795.
38. V.A. Harmandaris, K.Ch. Daoulas, **V.G. Mavrantzas**,* “Molecular dynamics simulation of a polymer melt/solid interface: Local dynamics and chain mobility in a thin film of polyethylene melt adsorbed on graphite”, *Macromolecules* **2005**, *38*, 5796-5809.
39. K.Ch. Daoulas, D.N. Theodorou,* V.A. Harmandaris, N.Ch. Karayiannis, **V.G. Mavrantzas**,

- “Self-consistent-field study of compressible semiflexible melts adsorbed on a solid substrate and comparison with atomistic simulations”, *Macromolecules* **2005**, *38*, 7134-7149.
40. N.Ch. Karayiannis, **V.G. Mavrantzas**,* “Hierarchical modelling of the dynamics of polymers with a non-linear molecular architecture: Calculation of branch point friction and chain reptation time of H-shaped polyethylene melts from long molecular dynamics simulations”, *Macromolecules* **2005**, *38*, 8583-8596.
 41. **V.G. Mavrantzas**,* A.N. Beris, F. Leermakers, G. Flier, “Continuum formulation of the Scheutjens-Fleer lattice statistical theory for homopolymer adsorption from solution”, *J. Chem. Phys.* **2005**, *123*, 174901-174915.
 42. G. Tsolou, V.A. Harmandaris, **V.G. Mavrantzas**,* “Atomistic molecular dynamics simulation of the temperature and pressure dependence of local and terminal relaxation in *cis*-1,4-polybutadiene”, *J. Chem. Phys.* **2006**, *124*, 084906.
 43. K. Foteinopoulou, **V.G. Mavrantzas**,* Y. Dimakopoulos, J. Tsamopoulos, “Numerical simulation of multiple bubbles growing in a Newtonian liquid filament undergoing stretching”, *Phys. of Fluids* **2006**, *18*, 042106.
 44. G. Tsolou, V.A. Harmandaris, **V.G. Mavrantzas**,* “Local structure and chain packing in *cis*-1,4-polybutadiene systems: Detailed atomistic molecular dynamics simulation of their temperature and pressure dependence”, *Macromolecular Theory & Simulations* **2006**, *15*, 381-393.
 45. K. Foteinopoulou, N.Ch. Karayiannis, **V.G. Mavrantzas**, M. Kröger,* “Primitive path identification and entanglement statistics in polymer melts: Results from direct topological analysis on atomistic polyethylene models”, *Macromolecules* **2006**, *39*, 4207-4216.
 46. O. Alexiadis, V.A. Harmandaris,* **V.G. Mavrantzas**, L. Delle Site, “Atomistic simulation of alkanethiol self-assembled monolayers on different metal surfaces via a quantum, first-principles parametrization of the sulfur-metal interaction”, *J. Phys. Chem. C* **2007**, *111*, 6380-6391.
 47. C. Baig, **V.G. Mavrantzas**,* “Thermodynamically guided nonequilibrium Monte Carlo for generating realistic shear flows in polymeric systems”, *Phys. Rev. Lett.* **2007**, *99*, 257801.
 48. T.C. Ionescu, B.J. Edwards,* D.J. Keffer, **V.G. Mavrantzas**, “Energetic and entropic elasticity of nonisothermal flowing polymers: Experiment, theory, and simulation”, *J. Rheol.* **2008**, *52*, 105-140.
 49. O. Alexiadis, K.Ch. Daoulas, **V.G. Mavrantzas**,* “An efficient Monte Carlo algorithm for the fast equilibration and atomistic simulation of alkanethiol self-assembled monolayers on a Au(111) substrate”, *J. Phys. Chem. B* **2008**, *112*, 1198-1211.
 50. O. Alexiadis, **V.G. Mavrantzas**, R. Khare, J. Beckers, A.R.C. Baljon,* “End-bridging Monte Carlo simulation of bulk and grafted amorphous polyethylene above and below the glass transition”, *Macromolecules* **2008**, *41*, 987-996.
 51. T.C. Ionescu, B.J. Edwards,* D.J. Keffer, **V.G. Mavrantzas**, “Atomistic simulation of energetic and entropic elasticity in short-chain polyethylenes”, *J. Rheol.* **2008**, *52*, 567-589.
 52. G. Tsolou, V.A. Harmandaris, **V.G. Mavrantzas**,* “Molecular dynamics simulation of temperature and pressure effects on the intermediate length scale dynamics and zero shear rate viscosity of *cis*-1,4-polybutadiene: Rouse mode analysis and dynamic structure factor spectra”, *J. non-Newt. Fluid Mech.* **2008**, *152*, 184-194.
 53. G. Tsolou, **V.G. Mavrantzas**,* Z. Makrodimitri, I.G. Economou, R. Gani, “Atomistic simulation of the sorption of small gas molecules in polyisobutylene”, *Macromolecules* **2008**, *41*, 6228-6238.
 54. P.S. Stephanou, C. Baig, **V.G. Mavrantzas**,* “A generalized differential constitutive equation for polymer melts based on principles of non-equilibrium thermodynamics”, *J. Rheol.* **2009**, *53*, 309-337.
 55. C. Baig,* **V.G. Mavrantzas**,* “Multiscale simulation of polymer melt viscoelasticity guided from non-equilibrium statistical thermodynamics: Atomistic Non-Equilibrium Molecular Dynamics coupled with Monte Carlo in an expanded statistical ensemble”, *Phys. Rev. B* **2009**, *79*, 144302.
 56. K.C. Satyanarayana, J. Abildskov, R. Gani,* G. Tsolou, **V.G. Mavrantzas**, “Computer-aided polymer design using multi-scale modelling”, *Brazilian J. Chem. Eng.* **2010**, *27*, 369-380.
 57. P.S. Stephanou, C. Baig, G. Tsolou, **V.G. Mavrantzas**,* M. Kröger, “Quantifying chain reptation in entangled polymer melts: Topological and dynamical mapping of atomistic simulation results onto the tube model”, *J. Chem. Phys.* **2010**, *132*, 124904.
 58. C. Baig,* **V.G. Mavrantzas**,* “Tension thickening, molecular shape, and flow birefringence of

- an H-shaped polymer melt in steady shear and planar extension”, *J. Chem. Phys.* **2010**, *132*, 014904.
59. C. Baig, O. Alexiadis, **V.G. Mavrantzas**,* “Advanced Monte Carlo algorithm for the atomistic simulation of short- and long-chain branched polymers: Implementation for H-shaped, q-shaped, and short-chain branched polyethylene melts”, *Macromolecules* **2010**, *43*, 986–1002.
 60. C. Baig,* **V.G. Mavrantzas**, M. Kröger, “Flow effects on melt structure and entanglement network of linear polymers: Results from a nonequilibrium molecular dynamics simulation study of a polyethylene melt in steady shear”, *Macromolecules* **2010**, *43*, 6886–6902.
 61. C. Baig, **V.G. Mavrantzas**,* “From atomistic trajectories to primitive paths to tube models: Linking molecular simulations with the reptation theory for entangled polymer melts”, *Soft Matter* **2010**, *6*, 4603–4612.
 62. C. Baig, P.S. Stephanou, G. Tsolou, **V.G. Mavrantzas**,* M. Kröger, “Understanding Dynamics in Binary Mixtures of Entangled cis-1,4-Polybutadiene Melts at the Level of Primitive Path Segments by Mapping Atomistic Simulation Data onto the Tube Model”, *Macromolecules* **2010**, *43*, 8239–8250.
 63. G. Tsolou, N. Stratikis, C. Baig,* P.S. Stephanou, V.G. Mavrantzas.* “Melt Structure and Dynamics of Unentangled Polyethylene Rings: Rouse Theory, Atomistic Molecular Dynamics Simulation, and Comparison with the Linear Analogues”, *Macromolecules* **2010**, *43*, 10692–10713.
 64. C. Baig,* **V.G. Mavrantzas**,* H.C. Öttinger, “On Maxwell’s Relations of Thermodynamics for Polymeric Liquids away from Equilibrium”, *Macromolecules* **2011**, *44*, 640–646.
 65. P.S. Stephanou, C. Baig,* **V.G. Mavrantzas**,* “Projection of atomistic simulation data for the dynamics of entangled polymers onto the tube theory: Calculation of the segment survival probability function and comparison with modern tube models”, *Soft Matter* **2011**, *7*, 380–395.
 66. P.S. Stephanou, C. Baig,* **V.G. Mavrantzas**,* “Toward an improved description of constraint release and contour length fluctuations in tube models for entangled polymer melts from detailed atomistic molecular dynamics simulation data”, *Macromol. Theory & Simul.*, **2011**, *20*, 752–768.
 67. A.R. Brás,* R. Pasquino, T. Koukoulas, G. Tsolou, O. Holderer, A. Radulescu, J. Allgaier, **V.G. Mavrantzas**, W. Pyckhout-Hintzen, A. Wischnewski, D. Vlassopoulos, D. Richter, “Structure and Dynamics of Polymer Rings by Neutron Scattering: Breakdown of the Rouse Model”, *Soft Matter* **2011**, *7*, 11169–11176.
 68. J. Qin, S.T. Milner,* P.S. Stephanou, **V.G. Mavrantzas**, “Effects of tube persistence length on dynamics of mildly entangled polymers”, *J. Rheology* **2012**, *56*, 707–724.
 69. O. Alexiadis, **V.G. Mavrantzas**,* “All-atom molecular dynamics simulation of temperature effects on the structural, thermodynamic and packing properties of the pure amorphous and pure crystalline phases of regioregular P3HT”, *Macromolecules* **2013**, *46*, 2450–2467.
 70. P.S. Stephanou,* **V.G. Mavrantzas**,* “Quantitative predictions of the linear viscoelastic properties of entangled polyethylene and polybutadiene melts via modified versions of modern tube models on the basis of atomistic simulation data”, *J. Non-Newt. Fluid Mech.* **2013**, *200*, 111–130.
 71. Anastasiou A., E.K. Karahaliou, O. Alexiadis, **V.G. Mavrantzas**,* “Detailed atomistic simulation of the nano-sorption and nano-diffusivity of water, tyrosol, vanillic acid and p-coumaric acid in single wall carbon nanotubes”, *J. Chem. Phys.* **2013**, *139*, 164711.
 72. D.G. Tsalikis, C. Baig, **V.G. Mavrantzas**,* E. Amanatides, D. Mataras,* “A hybrid kinetic Monte Carlo method for simulating silicon films grown by plasma-enhanced chemical vapor deposition”, *J. Chem. Phys.* **2013**, *139*, 204706.
 73. D.G. Tsalikis, T. Koukoulas, V.G. Mavrantzas,* “Dynamic, conformational and topological properties of ring-linear poly(ethylene oxide) blends from molecular dynamics simulations”, *React. & Funct. Polym.* **2014**, *80*, 61–70.
 74. P.S. Stephanou,* **V.G. Mavrantzas**,* “Accurate prediction of the linear viscoelastic properties of highly entangled mono and bidisperse polymer melts”, *J. Chem. Phys.* **2014**, *140*, 214903.
 75. S Tsouka, Y. Dimakopoulos, **V.G. Mavrantzas**, J. Tsamopoulos,* “Stress gradient induced migration of polymers in corrugated channels”, *J. Rheol.* **2014**, *58*, 911–947.
 76. P.S. Stephanou,* **V.G. Mavrantzas**,* G.C. Georgiou, “Continuum model for the phase behavior, microstructure and rheology of unentangled polymer nanocomposite melts”, *Macromolecules*

- 2014, 47, 4493–4513.
77. D.G. Tsalikis, **V.G. Mavrantzas**,* “Threading of ring poly(ethylene oxide) molecules by linear chains in the melt”, *ACS Macro Lett.* **2014**, 3, 763–766.
 78. E.N. Skountzos, A. Anastassiou, **V.G. Mavrantzas**,* D.N. Theodorou, “Determination of the mechanical properties of a poly(methyl methacrylate) nanocomposite with functionalized graphene sheets through detailed atomistic simulations”, *Macromolecules* **2014**, 47, 8072–8088.
 79. F.D. Tsourtou, O. Alexiadis, **V.G. Mavrantzas**,* V. Kolonias, E. Housos, “Atomistic Monte Carlo and Molecular Dynamics simulation of the bulk phase self-assembly of semifluorinated alkanes”, Danckwerts Special Issue, *Chemical Engineering Science* **2015**, 121, 32-50.
 80. T. Mermigkis, D.G. Tsalikis, **V.G. Mavrantzas**,* “Determination of water effective diffusivity in a poly (methyl methacrylate) membrane containing carbon nanotubes using kinetic Monte Carlo simulations”, *J. Chem. Phys.* **2015**, 143, 164903.
 81. A. Anastassiou, **V.G. Mavrantzas**, “Molecular Structure and work of adhesion of poly(n-butyl acrylate) and poly(n-butyl acrylate-co-acrylic acid) on α -quartz, α -ferric oxide, and α -ferrite from detailed molecular dynamics Simulations”, *Macromolecules* **2015**, 48, 8262–8284.
 82. K.D. Papadimitriou, E.N. Skountzos, S.S. Gkempoura, I. Polyzos, **V.G. Mavrantzas**, C. Galiotis, C. Tsitsilianis,* “Molecular modelling combined with advanced chemistry for the rational design of efficient graphene dispersing agents”, *ACS Macro Lett.* **2016**, 5, 24–29.
 83. P.S. Stephanou,* I.Ch. Tsimouri, **V.G. Mavrantzas**, “Flow-induced orientation and stretching of entangled polymers in the framework of non-equilibrium thermodynamics”, *Macromolecules* **2016**, 49, 3161–3173.
 84. D.G. Tsalikis, **V.G. Mavrantzas**,* D. Vlassopoulos, “Analysis of slow modes in ring polymers: Threading of rings controls long-time relaxation”, *ACS Macro Lett.* **2016**, 5, 755–760.
 85. G.D. Papadopoulos, D.G. Tsalikis, **V.G. Mavrantzas**,* “Microscopic dynamics and topology of polymer rings immersed in a host matrix of longer linear polymers: Results from a detailed molecular dynamics simulation study and comparison with experimental data”, *Polymers (Special Issue on Semiflexible Polymers)* **2016**, 8, 283.
 86. P.V. Alatas, D.G. Tsalikis, **V.G. Mavrantzas**,* “Detailed molecular dynamics simulation of the structure and self-diffusion of linear and cyclic n-alkanes in melt and blends”, *Macromolecular Theory & Simulations* (Special 25th Anniversary Issue), **2016**, in press.
 87. D.G. Tsalikis, T. Koukoulas, **V.G. Mavrantzas**,* R. Pasquino, D. Vlassopoulos, W. Pyckhout-Hintzen, A. Wischnewski, M. Monkenbusch, D. Richter, “Microscopic structure, conformational properties and equilibrium dynamics of ring and linear polyethylene oxide (PEO) melts from detailed atomistic molecular dynamics simulations: Dependence on chain length and direct comparison with experimental data”, *Macromolecules* **2016**, submitted.
 88. K.S. Karadima, **V.G. Mavrantzas**,* S.N. Pandis, “Molecular dynamics simulation of local concentration and structure in organic aerosol nanoparticles under atmospheric conditions”, *Physical Chemistry Chemical Physics*, **2016**, in preparation.

PRESENTATIONS (speaker underlined)

1. V.G. Mavrantzas, A.N. Beris, "Theoretical study of the effects of solid/fluid interface on the rheology of polymer solutions", *March Meeting of the American Physical Society*, Cincinnati, March 18-22, **1991**.
2. V.G. Mavrantzas, A.N. Beris, "Theoretical study of the effects of solid/fluid interface on the rheology of polymer solutions", *"Symposium on Interfacial Phenomena in Viscoelastic Flows"* organized by the Fluid Mechanics Committee of the Applied Mechanics Division of ASME, Columbus, June 16-19, **1991**.
3. V.G. Mavrantzas, A.N. Beris, "Theoretical Study of wall effects on the rheology of dilute polymer solutions", *Society of Rheology Meeting*, Rochester, October 20-24, **1991**.
4. V.G. Mavrantzas, A.N. Beris, "Modeling and simulation of the dilute polymer solution flow behavior next to solid surfaces and interfaces", *National Meeting of the American Chemical Society*, San Francisco, April 5-10, **1992**.
5. V.G. Mavrantzas, A.N. Beris, "Interfacial phenomena in the rheology of dilute polymer solutions", *AIChE Annual Meeting*, Miami Beach, November 1-6, **1992**.
6. A.N. Beris, V.G. Mavrantzas, "Non-local effects in polymer rheology: Polymer-surface interactions", *Society of Rheology Meeting*, Boston, October 17-21, **1993**.
7. V.G. Mavrantzas, A.N. Beris, "Stress-induced polymer migration phenomena in simple viscometric flows", *Society of Rheology Meeting*, Boston, October 17-21, **1993**.
8. V.G. Mavrantzas, A.N. Beris, "Rheology of dilute polymer solutions in the adjacency of a solid surface", *AIChE Annual Meeting*, Saint Lewis, November 7-11, **1993**.
9. V.G. Mavrantzas, A.N. Beris, "Polymer migration in simple viscometric flows", *AIChE Annual Meeting*, Saint Lewis, November 7-11, **1993**.
10. V.G. Mavrantzas, D.N. Theodorou, "From chain chemical structure to polymer melt elasticity: The implementation of new Monte Carlo techniques", *EPF Annual Meeting*, Aghia Pelaghia, Crete, Greece, October 7-11, **1996**.
11. V.G. Mavrantzas, D.N. Theodorou, "From chain chemical structure to polymer melt elasticity: The implementation of new Monte Carlo techniques", *1st Panhellenic Chemical Engineers' Conference*, Patras, Greece, May 29-31, **1997**.
12. V.A. Harmandaris, V.G. Mavrantzas, D.N. Theodorou, "From chemical structure to polymer processing: Atomistic simulation of the viscoelasticity of linear polyethylene melts", *4th Hellenic Polymer Society Symposium (ELEP 1997)*, Patras, Greece, November 20-22, **1997**.
13. V.G. Mavrantzas, V.A. Harmandaris, D.N. Theodorou, "Atomistic simulation of the viscoelasticity of linear polyethylene melts", *1st Hellenic Society of Rheology Meeting*, Heraklion, Greece, August 29-September 2, **1998**.
14. E. Zervopoulou, V.G. Mavrantzas, D.N. Theodorou, "Atomistic simulation of the solubility of small alkanes in long polyethylene melts", *2nd Panhellenic Chemical Engineers' Conference*, Salonica, Greece, May 27-29, **1999**.
15. V.A. Harmandaris, V.G. Mavrantzas, D.N. Theodorou, "Atomistic simulation of the stress relaxation experiment after cessation of steady-state uniaxial elongation", *2nd Panhellenic Chemical Engineers' Conference*, Salonica, Greece, May 27-29, **1999**.
16. M. Apostolakis, J. Hatzinicolaou, V.G. Mavrantzas, "Stress-induced polymer migration effects in the Taylor-Couette device: Numerical calculations with spectral elements", *2nd Panhellenic Chemical Engineers' Conference*, Salonica, Greece, May 27-29, **1999**.
17. V.A. Harmandaris, V.G. Mavrantzas, D.N. Theodorou, "Atomistic Modeling of Viscoelasticity: Simulation of stress relaxation upon cessation of steady-state elongational flow", *Summer School in Polymer Science and Technology*, Psathopirgos, Patras, Greece, September 5-9, **1999**.
18. V.G. Mavrantzas, A.N. Beris, "A hierarchical, self-consistent model for the study of surface effects on the structure and rheology of polymer solutions. I) General formulation with application to the flow past a wall, II) Application to an adsorbing surface", *Proceedings, Interfaces and Colloidal Systems*, Aghia Pelaghia, Heraklion Crete, Greece, September 18-23, **1999**.
19. V.G. Mavrantzas, H.C. Öttinger, "GENERIC: A guide for the design of atomistic Monte Carlo simulations for nonequilibrium systems", *Nonequilibrium Thermodynamics and Complex Fluids*, Oxford, UK, August 14-18, **2000**.
20. V.A. Harmandaris, V.G. Mavrantzas, D.N. Theodorou, "Prediction of the linear viscoelastic

- properties of long-chain polyethylene melts from detailed atomistic simulations on uniaxially stretched melt configurations”, *XIII International Congress on Rheology*, Cambridge, UK, August 20-25, **2000**.
21. **V.G. Mavrantzas**, A.N. Beris, “Polymer depletion phenomena near a solid surface: Modeling the effect of a shear flow”, *XIII International Congress on Rheology*, Cambridge, UK, August 20-25, **2000**.
 22. **K.Ch. Daoulas**, **V.G. Mavrantzas**, D. Photinos, “Grafted Polymer Melts: Detailed Atomistic Simulation of their Interfacial Structure”, *3rd COST P1 Workshop on Soft Condensed Matter*, Patras, September 22-23, **2000**.
 23. **M. Apostolakis**, **V.G. Mavrantzas**, “Polymer diffusion in inhomogeneous flow fields: pseudospectral calculations in the Taylor-Couette geometry”, *35th Annual Meeting of the French Society of Rheology*, Grenoble, October 23-25, **2000**.
 24. N.Ch. Karayiannis, **V.G. Mavrantzas**, **D.N. Theodorou**, “Effects of Jump Rate Distribution and Spatial Heterogeneity”, *AICHE Annual Meeting*, Los Angeles, November 13-17, **2000**.
 25. V.A. Harmandaris, **V.G. Mavrantzas**, **D.N. Theodorou**, “Rheological Properties of Polymer Melts from Molecular Constitution”, *AICHE Annual Meeting*, Los Angeles, November 13-17, **2000**.
 26. **V.G. Mavrantzas**, E. Zervopoulou, M. Doxastakis, **D.N. Theodorou**, “Prediction of Physical Properties of Polymer Melts”, *AICHE Annual Meeting*, Los Angeles, November 13-17, **2000**.
 27. **I.E. Mavrantza**, D. Prentzas, **V.G. Mavrantzas**, C. Galiotis, “Detailed atomistic molecular dynamics simulation of the temperature dependence of the IR vibrational spectra of crystalline polyethylene”, *2nd Seminar of the Greek Network of Polymers*, Patras, April 6, **2001**.
 28. **K. Daoulas**, A.F. Terzis, **V.G. Mavrantzas**, “Melts of macromolecules grafted on a hard surface or graphite: Detailed atomistic simulation of their interfacial structure”, *3rd Panhellenic Chemical Engineers’ Conference*, Athens, Greece, May 31-June 02, **2001**.
 29. **V.A. Harmandaris**, **V.G. Mavrantzas**, D.N. Theodorou, “Prediction of the viscoelastic properties of high-molecular weight polymer melts through molecular dynamics atomistic simulations”, *3rd Panhellenic Chemical Engineers’ Conference*, Athens, Greece, May 31-June 02, **2001**.
 30. **M. Apostolakis**, **V.G. Mavrantzas**, A.N. Beris, “Polymer diffusion in the Taylor-Couette geometry: Calculation of the time-dependent basic flow with pseudo-spectral elements”, *3rd Panhellenic Chemical Engineers’ Conference*, Athens, Greece, May 31-June 02, **2001**.
 31. **M. Apostolakis**, **V.G. Mavrantzas**, A.N. Beris, “Stress-induced migration effects on the viscoelastic Taylor-Couette flow”, *3rd International Meeting of the Hellenic Society of Rheology*, Patras, Greece, June 10-14, **2001**.
 32. **V.A. Harmandaris**, **V.G. Mavrantzas**, D.N. Theodorou, “Prediction of the rheological properties of long polyethylene melts via atomistic molecular dynamics simulations”, *3rd International Meeting of the Hellenic Society of Rheology*, Patras, Greece, June 10-14, **2001**.
 33. **K.Ch. Daoulas**, A.F. Terzis, **V.G. Mavrantzas**, “Detailed end-bridging Monte Carlo simulations of grafted polyethylene melts”, *Euroconference on Interfaces and Thin Films of Polymers and Colloidal Systems*, Acquafredda di Maratea, Italy, September 8-13, **2001**.
 34. **V.G. Mavrantzas**, M. Apostolakis, **A.N. Beris**, “Stress-induced migration effects in the Taylor-Couette flow: Numerical simulation of the stress-concentration coupling”, *73rd Annual Meeting of the Society of Rheology*, Bethesda, Maryland, USA, October 21-25, **2001**.
 35. **Daoulas, K.**; Terzis, A.F.; **Mavrantzas, V.G.**, “Detailed end-bridging Monte Carlo simulations of polymer melts grafted on a solid substrate”, *Proceedings, 5th Hellenic Polymer Society Symposium (ELEP 2001)*, Heraklion, Crete, December 15-17, **2001**.
 36. **Karayiannis, N.C.**; **Mavrantzas, V.G.**; Theodorou, D.N., “A new method for the rapid equilibration of atomistic macromolecular model systems of a precisely defined chemical architecture”, *Proceedings, 5th Hellenic Polymer Society Symposium (ELEP 2001)*, Heraklion, Crete, December 15-17, **2001**.
 37. **V.G. Mavrantzas**, V.A. Harmandaris, D.N. Theodorou, “Atomistic Monte Carlo simulations of the viscoelastic properties of polymer melts”, *4th GRACM Congress on Computational Mechanics*, Patras, Greece, June 27-29, **2002**.
 38. **K.Ch. Daoulas**, **V.G. Mavrantzas**, V.A. Harmandaris, K. Foteinopoulou, D.N. Theodorou, “Atomistic Monte Carlo simulations and SCF Calculations of polymers at interfaces”, *4th GRACM*

- Congress on Computational Mechanics*, Patras, Greece, June 27-29, **2002**.
39. **V.G. Mavrantzas**, A.N. Beris, "Modeling interfacial effects on the conformation and rheology of polymer solutions through a hierarchical, continuum model", *Chain Molecules at Interfaces, A Symposium to the memory of Jan Scheutjens*, Wageningen University, The Netherlands, August 25-28, **2002**.
 40. **K.Ch. Daoulas**, **V.G. Mavrantzas**, "Detailed atomistic Monte Carlo simulation of grafted polymer melts: Thermodynamic, conformational and structural properties", *Chain Molecules at Interfaces, A Symposium to the memory of Jan Scheutjens*, Wageningen University, The Netherlands, August 25-28, **2002**.
 41. **N.Ch. Karayiannis**, **V.G. Mavrantzas**, "A novel Monte Carlo scheme for the detailed simulation of nonlinear H-shaped model polyethylene melts", *XVIII Panhellenic Conference on Solid State Physics-Materials Science*, Heraklion, Crete, September 15-18, **2002**.
 42. **K.Ch. Daoulas**, **V.G. Mavrantzas**, "Detailed atomistic Monte Carlo simulation of grafted polymer melts", *Euresco*, Spain, 14-19 September, **2002**.
 43. **V.A. Harmandaris**, **V.G. Mavrantzas**, D.N. Theodorou, "Prediction of the viscoelastic properties of polymer from detailed molecular dynamics simulations and comparison against rheological measurements", *3rd Chemical Engineering Conference for Collaborative Research in Eastern Mediterranean (EMCC-3)*, Thessaloniki, Greece, May 13-15, **2003**.
 44. **K. Foteinopoulou**, **V.G. Mavrantzas**, J. Tsamopoulos, "Numerical calculation of bubble growth in Newtonian and viscoelastic filaments undergoing stretching", *4th Panhellenic Chemical Engineers' Conference*, Patras, Greece, May 29-31, **2003**.
 45. **K.Ch. Daoulas**, A.F. Terzis, **V.G. Mavrantzas**, "A novel method for precisely controlling the chain length distribution in atomistic simulations of inhomogeneous and/or anisotropic polymer systems with chain connectivity-altering Monte Carlo algorithms", *4th Panhellenic Chemical Engineers' Conference*, Patras, Greece, May 29-31, **2003**.
 46. **G. Tsolou**, **V.G. Mavrantzas**, D.N. Theodorou, "Atomistic molecular dynamics simulations of cis-1,4 polybutadiene melts", *4th Panhellenic Chemical Engineers' Conference*, Patras, Greece, May 29-31, **2003**.
 47. **K. Foteinopoulou**, **V.G. Mavrantzas**, J. Tsamopoulos, "Numerical simulation of bubble growth during filament stretching of pressure-sensitive adhesive materials", *XIIIth International Workshop on Numerical Methods for non-Newtonian flows*, Lausanne, Switzerland, June 4-7, **2003**.
 48. **V.G. Mavrantzas**, "Thermodynamically founded hierarchical methodologies for the simulation of polymer melts beyond equilibrium: Detailed atomistic simulation of polymer melt viscoelasticity", *3rd International Workshop on Non-Equilibrium Thermodynamics and Complex Fluids (3rd IWNET)*, Princeton, USA, August 14-17, **2003**.
 49. **V.G. Mavrantzas**, "Modeling interfacial effects on the conformation and rheology of polymer solutions through a hierarchical, continuum model", *3rd International Workshop on Non-Equilibrium Thermodynamics and Complex Fluids (3rd IWNET)*, Princeton, USA, August 14-17, **2003**.
 50. **K. Foteinopoulou**, **V.G. Mavrantzas**, **J. Tsamopoulos**, "Numerical Simulation of bubble growth during filament stretching", *The 5th Euromech Fluid Mechanics Conference*, Toulouse, France, August 24-28, **2003**.
 51. **K.Ch. Daoulas**, **V.G. Mavrantzas**, "Atomistic Monte Carlo simulation studies of polymer melts grafted on solid substrates", *International Conference on Computational Methods in Sciences and Engineering (ICCMSE 2003)*, Kastoria, Greece, September 12-16, **2003**.
 52. **V.A. Harmandaris**, **V.G. Mavrantzas**, D.N. Theodorou, "Molecular Dynamics simulation of the viscoelastic properties of linear polymer melts", *Polymer Processing Society (PPS)*, Athens, Greece, September 14-17, **2003**.
 53. **N.Ch. Karayiannis**, **V.G. Mavrantzas**, D.N. Theodorou, "Study of the segmental dynamics and barrier properties of amorphous PET [poly(ethylene terephthalate)] and PEI [poly(ethylene isophthalate)] through atomistic simulations", *AIChE Annual Meeting*, San Francisco, USA, November 16-21, **2003**.
 54. **N.Ch. Karayiannis**, **V.G. Mavrantzas**, "An advanced Monte Carlo algorithm for the fast equilibration of atomistic models of H-shaped polyethylene melts", *AIChE Annual Meeting*, San Francisco, USA, November 16-21, **2003**.

55. V.A. Harmandaris, **V.G. Mavrantzas**, D.N. Theodorou, “Atomistic molecular dynamics simulation of n-alkane self-diffusion in melts and binary blends”, *AICHE Annual Meeting*, San Francisco, USA, November 16-21, **2003**.
56. V.A. Harmandaris, **V.G. Mavrantzas**, D.N. Theodorou, “Atomistic molecular dynamics simulation of the viscoelastic properties of long-chain polyethylene melts: Crossover from Rouse to reptation regime”, *AICHE Annual Meeting*, San Francisco, USA, November 16-21, **2003**.
57. K.Ch. Daoulas, **V.G. Mavrantzas**, “Detailed atomistic Monte Carlo simulation of long-chain end-grafted polymer melts”, *AICHE Annual Meeting*, San Francisco, USA, November 16-21, **2003**.
58. **V.G. Mavrantzas**, H.C. Öttinger, “GENERIC Monte Carlo: A thermodynamically founded Monte Carlo for the hierarchical simulation of complex systems under steady-state flow conditions”, *AICHE Annual Meeting*, San Francisco, USA, November 16-21, **2003**.
59. K. Foteinopoulou, **V.G. Mavrantzas**, J. Tsamopoulos, “Bubble growth during filament stretching of pressure sensitive adhesive materials”, *AICHE Annual Meeting*, San Francisco, USA, November 16-21, **2003**.
60. K.Ch. Daoulas, **V.G. Mavrantzas**, “An atomistic simulation approach to the thermodynamics and structural properties of grafted polymer melts”, *3rd International Conference on Computational Modeling and Simulation of Materials: From the Atomistic to the Engineering Scales*, Acireale (Catania), Italy, May 30 – June 4, **2004**.
61. V.A. Harmandaris, K.Ch. Daoulas, **V.G. Mavrantzas**, “Atomistic simulation of the structure and dynamics of the polyethylene/graphite interface”, *3rd International Conference on Computational Modeling and Simulation of Materials: From the Atomistic to the Engineering Scales*, Acireale (Catania), Italy, May 30 – June 4, **2004**.
62. N.Ch. Karayiannis, **V.G. Mavrantzas**, “Detailed atomistic simulation of long-chain branched polyethylene melts”, *3rd International Conference on Computational Modeling and Simulation of Materials: From the Atomistic to the Engineering Scales*, Acireale (Catania), Italy, May 30 – June 4, **2004**.
63. **V.G. Mavrantzas**, D.N. Theodorou, H.C. Öttinger, “Thermodynamically founded hierarchical methodologies for the simulation of polymer melts beyond equilibrium: detailed atomistic simulation of polymer melt viscoelasticity”, *3rd International Conference on Computational Modeling and Simulation of Materials: From the Atomistic to the Engineering Scales*, Acireale (Catania), Italy, May 30 – June 4, **2004**.
64. K. Foteinopoulou, **V.G. Mavrantzas**, J. Tsamopoulos, “Numerical simulation of bubble growth during filament stretching of Newtonian and viscoelastic fluids”, *4th International Meeting of the Hellenic Society of Rheology*, Athens, Greece, June 27-29, **2004**.
65. G. Tsolou, **V.G. Mavrantzas**, “Atomistic simulation of the dynamics of cis-1,4 polybutadiene and its dependence on pressure and temperature”, *4th International Meeting of the Hellenic Society of Rheology*, Athens, Greece, June 27-29, **2004**.
66. N.Ch. Karayiannis, **V.G. Mavrantzas**, “Branch point friction and its role in the dynamics of H-shaped polyethylene melts as probed by long molecular dynamics simulations”, *4th International Meeting of the Hellenic Society of Rheology*, Athens, Greece, June 27-29, **2004**.
67. N.Ch. Karayiannis, **V.G. Mavrantzas**, “Detailed atomistic simulation of the conformational and dynamic properties of H-shaped polyethylene melts”, *XIVth International Congress on Rheology*, Seoul, Korea, August 22-27, **2004**.
68. **V.G. Mavrantzas**, D.N. Theodorou, H.C. Öttinger, “Thermodynamically founded atomistic Monte Carlo for the simulation of polymer melt viscoelasticity”, *XIVth International Congress on Rheology*, Seoul, Korea, August 22-27, **2004**.
69. N.Ch. Karayiannis, **V.G. Mavrantzas**, “Detailed atomistic simulation of the conformational and dynamic properties of H-shaped polyethylene melts”, *XIVth International Congress on Rheology*, Seoul, Korea, August 22-27, **2004**.
70. K. Foteinopoulou, **V.G. Mavrantzas**, J. Tsamopoulos, “Numerical Simulation of cavitation dynamics in extensional flows of polymeric filaments”, *FLOW 2004 Meeting*, Athens, Greece, November **2004**.
71. N.Ch. Karayiannis, **V.G. Mavrantzas**, “Role of branch point friction in the relaxation of H-polymers from detailed, 3 μ s-long, atomistic molecular dynamics simulations”, *76th Annual*

- Meeting of the Society of Rheology*, Lubock, USA, February 13-17, **2005**.
72. K. Foteinopoulou, **V.G. Mavrantzas**, J. Tsamopoulos, “Numerical calculation of the deformation of multiple bubbles in a filament undergoing stretching”, *2nd Annual European Rheology Conference (AERC-2005)*, Grenoble, France, April 21-23, **2005**.
 73. O. Alexiadis, K.Ch. Daoulas, **V.G. Mavrantzas**, “Atomistic Monte Carlo simulation of alkanethiol based self-assembled monolayers on the Au(1,1,1) surface”, *5th Panhellenic Chemical Engineers Conference*, Thessaloniki, Greece, May 26-28, **2005**.
 74. N.Ch. Karayiannis, **V.G. Mavrantzas**, “Calculation of branch point friction and chain reptation time of H-shaped polyethylene melts from long atomistic molecular dynamics simulations”, *5th Panhellenic Chemical Engineers Conference*, Thessaloniki, Greece, May 26-28, **2005**.
 75. G. Tsolou, **V.G. Mavrantzas**, “Atomistic molecular dynamics simulation of pressure and temperature effects on cis-1,4 polybutadiene and polyethylene”, *5th Panhellenic Chemical Engineers Conference*, Thessaloniki, Greece, May 26-28, **2005**.
 76. V.A. Harmandaris, **V.G. Mavrantzas**, “Chain diffusion and mobility in thin films of polyethylene melts adsorbed on graphite through atomistic simulations”, *European Polymer Congress*, Moscow, Russia, June 27-July 1, **2005**.
 77. K. Foteinopoulou, **V.G. Mavrantzas**, J. Tsamopoulos, “Numerical simulation of multi-bubble growth in filaments undergoing stretching”, *5th GRACM International Congress on Computational Mechanics*, Limassol, Cyprus, June 29-July 1, **2005**.
 78. N.Ch. Karayiannis, **V.G. Mavrantzas**, “Calculation of branch point friction and chain reptation time of H-shaped polyethylene melts from long atomistic molecular dynamics simulations”, *CECAM Meeting on: Modeling and Simulation of Entangled polymeric liquids*, Lyon, France, July 18-21, **2005**.
 79. **V.G. Mavrantzas**, K. Foteinopoulou, J. Tsamopoulos, “On the deformation and translation of multiple bubbles in a viscoelastic filament undergoing stretching”, *SOR 77th Annual Meeting*, Vancouver, British Columbia, Canada, October 16-20, **2005**.
 80. V. Soni, J. Abildskov, G. Jonsson, R. Gani, N. Karayiannis, **V.G. Mavrantzas**, “Model based design of structured polymers using the reverse design approach”, *AICHE Annual Meeting*, San Francisco, USA, November 16-21, **2005**.
 81. T. Ionescu, B.J. Edwards, V.G. Mavrantzas, “Atomistic simulation of energetic and entropic elasticity in short-chain polyethylenes” *AICHE Annual Meeting*, Cincinnati, USA, Oct. 30-Nov. 4, **2005**.
 82. N.Ch. Karayiannis, **V.G. Mavrantzas**, “Hierarchical modeling of polymers with a non-linear molecular architecture: Calculation of branch point friction and chain reptation time of an H-shaped polyethylene melt from detailed atomistic simulations”, *231st ACS National Meeting*, Atlanta, USA, March 26-30, **2006**.
 83. G. Tsolou, **V.G. Mavrantzas**, “Atomistic molecular dynamics simulation of the temperature and pressure dependence of local and terminal relaxation in amorphous polyethylene and cis-1,4 polybutadiene”, *231st ACS National Meeting*, Atlanta, USA, March 26-30, **2006**.
 84. **V.G. Mavrantzas**, A.N. Beris, “Continuum formulation of the Scheutjens-Fleer lattice statistical theory for homopolymer adsorption from solution”, *231st ACS National Meeting*, Atlanta, USA, March 26-30, **2006**.
 85. G. Tsolou, **V.G. Mavrantzas**, “Atomistic molecular dynamics simulation of the temperature and pressure dependence of local and terminal relaxation in cis-1,4 polybutadiene”, *3rd Annual European Rheology Conference (AERC 2006)*, Hersonissos, Crete, Greece, April 27- 29, **2006**.
 86. K. Foteinopoulou, N.Ch. Karayiannis, **V.G. Mavrantzas**, M. Kröger, “Topological analysis of polyethylene melts: Results from a hierarchical modeling approach combining atomistic Monte Carlo and long molecular dynamics simulations followed by a direct analysis of entanglements (poster)”, *3rd Annual European Rheology Conference (AERC 2006)*, Hersonissos, Crete, Greece, April 27- 29, **2006**.
 87. T. Ionescu, B.J. Edwards, D.J. Keffer, **V.G. Mavrantzas**, “Thermodynamics of non-isothermal polymer melts: Experiment, theory and simulation”, *4th International Workshop on Non-Equilibrium Thermodynamics and Complex Fluids (4th IWNET)*, Rhodes, Greece, September 3-7, **2006**.
 88. N.Ch. Karayiannis, **V.G. Mavrantzas**, “Atomistic simulation of polymers with a non-linear

- molecular architecture: Calculation of branch point friction and chain reptation time of an H-shaped polyethylene melt (poster)", *4th International Workshop on Non-Equilibrium Thermodynamics and Complex Fluids (4th IWNET)*, Rhodes, Greece, September 3-7, **2006**.
89. K. Foteinopoulou, N.Ch. Karayiannis, **V.G. Mavrantzas**, M. Kröger, "Primitive path identification and entanglement statistics in polymer melts: results from a direct topological analysis on atomistically detailed polyethylene models", *4th International Workshop on Non-Equilibrium Thermodynamics and Complex Fluids (4th IWNET)*, Rhodes, Greece, September 3-7, **2006**.
 90. V. Dimitriadis, N.Ch. Karayiannis, **V.G. Mavrantzas**, E. Chiotellis, D. Mouratides, C.D. Kiparissides, "Structure and dynamics of polyethylene melts bearing short chain branches frequently spaced along their backbone as revealed from atomistic simulations (poster)", *4th International Workshop on Non-Equilibrium Thermodynamics and Complex Fluids (4th IWNET)*, Rhodes, Greece, September 3-7, **2006**.
 91. G. Tsolou, **V.G. Mavrantzas**, "Atomistic molecular dynamics simulation of the temperature and pressure dependences of local and terminal relaxations in cis-1,4-polybutadiene", *4th International Workshop on Non-Equilibrium Thermodynamics and Complex Fluids (4th IWNET)*, Rhodes, Greece, September 3-7, **2006**.
 92. V. Soni, J. Abildskov, G. Jonsson, R. Gani, N.Ch. Karayiannis, **V.G. Mavrantzas**, "Multiscale modeling property for design of polymer based products", *AICHE Annual Meeting*, San Francisco, USA, Nov. 12 - 17, **2006**.
 93. T. Ionescu, B.J. Edwards, D.J. Keffer, **V.G. Mavrantzas**, "Thermodynamics of non-isothermal polymer melts: Experiment, theory and simulation", *AICHE Annual Meeting*, San Francisco, USA, Nov. 12 - 17, **2006**.
 94. R. Khare, O. Alexiadis, **V.G. Mavrantzas**, A. Baljon, "Monte Carlo simulations of the glass transition in polyethylene", *AICHE Annual Meeting*, San Francisco, USA, Nov. 12 - 17, **2006**.
 95. O. Alexiadis, K.Ch. Daoulas, **V.G. Mavrantzas**, "An efficient Monte Carlo algorithm for the fast equilibration and atomistic simulation of alkanethiol based self-assembled monolayers on a Au(111) substrate", *6th Hellenic Polymer Society Symposium (ELEP 2006)*, Patras, Greece, November 3-5, **2006**.
 96. V. Dimitriadis, N.Ch. Karayiannis, **V.G. Mavrantzas**, E. Chiotellis, D. Mouratides, C.D. Kiparissides, "An advanced Monte Carlo algorithm for the fast thermal equilibration of polyethylene melts bearing short chain branches frequently spaced along their backbone (poster)", *6th Hellenic Polymer Society Symposium (ELEP 2006)*, Patras, Greece, November 3-5, **2006**.
 97. R. Khare, O. Alexiadis, **V.G. Mavrantzas**, J. Beckers, A. Baljon, "Monte Carlo Simulation of the Glass Transition in Polyethylene", March 2007 Meeting of the Amer. Phys. Soc., Denver, Colorado, USA, March 5-9, **2007**.
 98. C. Baig, **V.G. Mavrantzas**, "Thermodynamically guided atomistic simulation of polymer melts beyond equilibrium", *4th Annual European Rheology Conference (AERC-2007)*, Naples, Italy, April 12-14, **2007**.
 99. O. Alexiadis, V.A. Harmandaris, **V.G. Mavrantzas**, L. Delle Site, "Atomistic simulation of alkanethiol self-assembled monolayers on different metal surfaces via a quantum, first-principles parameterization of the sulfur-metal interaction (poster)", *11th International Conference on Properties and Phase Equilibria (PPEPPD 2007)*, Hersonissos, Crete, Greece, May 20-25, **2007**.
 100. G. Tsolou, **V.G. Mavrantzas**, "The temperature dependence of the Rouse mode relaxation spectrum and the zero shear rate viscosity of cis-1,4-polybutadiene: results from long atomistic molecular dynamics simulations down to the glass transition temperature (poster)", *11th International Conference on Properties and Phase Equilibria (PPEPPD 2007)*, Hersonissos, Crete, Greece, May 20-25, **2007**.
 101. V. Soni, J. Abildskov, G. Jonsson, R. Gani, G. Tsolou, N.Ch. Karayiannis, **V.G. Mavrantzas**, "Integrating multilevel modelling aspects to predict gas permeability in polymers for the design of membranes (poster)", *11th International Conference on Properties and Phase Equilibria (PPEPPD 2007)*, Hersonissos, Crete, Greece, May 20-25, **2007**.
 102. P.S. Stephanou, C. Baig, **V.G. Mavrantzas**, "Generalizing the Giesekus model so that it can account for chain finite-extensibility effects and analysis of its predictions for polymer melts in viscometric flows", *6th Panhellenic Chemical Engineers Conference*, Athens, Greece, May 31-

June 2, 2007.

103. G. Tsolou, **V.G. Mavrantzas**, “The temperature dependence of the Rouse mode relaxation spectrum and zero shear rate viscosity in cis-1,4-polybutadiene: Results from long atomistic molecular dynamics simulations down to the glass transition temperature, T_g (poster)”, *XVth International Workshop on Numerical Methods for Non-Newtonian Flows (IWNMNNF 2007)*, Rhodes, Greece, June 6-10, 2007.
104. P.S. Stephanou, C. Baig, **V.G. Mavrantzas**, “A generalized single-conformation tensor viscoelastic model based on principles of non-equilibrium thermodynamics (poster)”, *XVth International Workshop on Numerical Methods for Non-Newtonian Flows (IWNMNNF 2007)*, Rhodes, Greece, June 6-10, 2007.
105. C. Baig, **V.G. Mavrantzas**, “Atomistic Monte Carlo simulation of a polymer melt under a flow field by employing generalized ensembles”, *XVth International Workshop on Numerical Methods for Non-Newtonian Flows (IWNMNNF 2007)*, Rhodes, Greece, June 6-10, 2007.
106. G. Tsolou, **V.G. Mavrantzas**, “Atomistic molecular dynamics simulation of the static and dynamic properties of cis- and trans-1,4-polybutadiene systems over a wide range of temperature and pressure conditions”, *2007 European Polymer Federation Congress (EPF 2007)*, Portorož-Portorose, Slovenia, July 2-6, 2007.
107. G. Tsolou, **V.G. Mavrantzas**, “The effect of molecular architecture on the dynamic properties of polymers: atomistic MD simulations of cis- and trans-1,4-polybutadiene below and above the entanglement length”, *2007 International Soft Matter Conference*, Aachen, Germany, October 1-4, 2007.
108. G. Tsolou, **V.G. Mavrantzas**, “The temperature dependence of the Rouse relaxation spectrum and the zero shear rate viscosity of cis-1,4-polybutadiene: Results from long atomistic molecular dynamics simulations down to the glass transition temperature (poster)”, *2007 International Soft Matter Conference*, Aachen, Germany, October 1-4, 2007.
109. C. Baig, **V.G. Mavrantzas**, “Atomistic non-equilibrium molecular dynamics simulation of an H-shaped polyethylene melt under shear”, *The Society of Rheology 79th Annual Meeting (SOR 2007)*, Salt Lake City, Utah, USA, October 7-11, 2007.
110. C. Baig, **V.G. Mavrantzas**, “Thermodynamically guided non-equilibrium Monte Carlo methodology for generating realistic shear flows of polymer melts”, *The Society of Rheology 79th Annual Meeting (SOR 2007)*, Salt Lake City, Utah, USA, October 7-11, 2007.
111. P.S. Stephanou, C. Baig, **V.G. Mavrantzas**, “A generalized, thermodynamically-founded Giesekus model incorporating chain finite-extensibility and bounded free energy effects (poster)”, *The Society of Rheology 79th Annual Meeting (SOR 2007)*, Salt Lake City, Utah, USA, October 7-11, 2007.
112. O. Alexiadis, **V.G. Mavrantzas**, “Atomistic Monte Carlo simulation of alkanethiol self-assembled monolayers on different metal surfaces”, *Condensed Matter Physics Conference of Balkan Countries*, Mugla University, Mugla, Turkey, May 26-28, 2008.
113. C. Baig, **V.G. Mavrantzas**, “Thermodynamically-guided nonequilibrium Monte Carlo method for generating realistic shear flows in polymeric materials”, *The XVth International Congress on Rheology (ICR)*, Monterey, California, USA, August 3-8, 2008.
114. J.M. Kim, C. Baig, B.J. Edwards, D.J. Keffer, **V.G. Mavrantzas**, “Rheology of short-chain branched polyethylene melts under shear: Results from NEMD simulations and comparison with linear and H-shaped analogues”, *The XVth International Congress on Rheology (ICR)*, Monterey, California, USA, August 3-8, 2008.
115. G. Tsolou, **V.G. Mavrantzas**, Z. Makrodimitri, I.G. Economou, “Atomistic simulation of the sorption of small gas molecules in polyisobutylene”, *XXIV Panhellenic Conference on Solid State Physics and Materials Science*, Heraklion, Crete, September 24-27, 2008.
116. P.S. Stephanou, C. Baig, G. Tsolou, **V.G. Mavrantzas**, M. Kröger, “Topological and Dynamical Mapping of atomistic simulation data onto the tube model for entangled polymer melts (poster)”, *XXIV Panhellenic Conference on Solid State Physics and Materials Science*, Heraklion, Crete, September 24-27, 2008.
117. G. Tsolou, **V.G. Mavrantzas**, A. Makrodimitri, I.G. Economou, “Atomistic simulation of the sorption of small gas molecules in polyisobutylene (poster)”, *7th Panhellenic Conference on Polymers*, Ioannina, Greece, September 28-October 1, 2008.

118. P.S. Stephanou, C. Baig, G. Tsolou, **V.G. Mavrantzas**, M. Kröger, “Topological and Dynamical Mapping of atomistic simulation data onto the tube model for entangled polymer melts”, *7th Hellenic Polymer Society Symposium (ELEP 2008)*, Ioannina, Greece, September 28-October 1, **2008**.
119. P.S. Stephanou, C. Baig, G. Tsolou, **V.G. Mavrantzas**, M. Kröger, “Quantifying chain reptation in entangled polymers by mapping atomistic simulation results onto the tube model (poster)”, *International Workshop on the Development and Analysis of Multiscale Methods*, Institute for Mathematics and its Applications (IMA), Minneapolis, Minnesota, USA, November 3-7, **2008**.
120. K.C. Satyanarayana, J. Abildskov, R. Gani, G. Tsolou, **V.G. Mavrantzas**, “Computer aided polymer design using multiscale modeling”, *AIChE Annual Meeting*, Philadelphia, Nov. 16-21, **2008**.
121. K.C. Satyanarayana, J. Abildskov, R. Gani, G. Tsolou, **V.G. Mavrantzas**, “Atomistic Simulation of the Diffusion of Small Gas Molecules in polyisobutylene”, *AIChE Annual Meeting*, Philadelphia, Nov. 16-21, **2008**.
122. C. Baig, **V.G. Mavrantzas**, “Multiscale simulation of polymer melt viscoelasticity guided from nonequilibrium statistical thermodynamics”, *4th Annual European Rheology Conference (AERC-2009)*, Edinburgh, U.K., April 14-17, **2009**.
123. C. Baig, P.S. Stephanou, **V.G. Mavrantzas**, “A generalized differential constitutive equation for polymer melts based on principles of nonequilibrium thermodynamics”, *4th Annual European Rheology Conference (AERC-2009)*, Edinburgh, U.K., April 14-17, **2009**.
124. G. Tsolou, P.S. Stephanou, C. Baig, **V.G. Mavrantzas**, M. Kröger, “Quantifying chain reptation in entangled polymer melts: Topological and dynamical mapping of atomistic simulation results onto the tube model”, *4th Annual European Rheology Conference (AERC-2009)*, Edinburgh, U.K., April 14-17, **2009**.
125. C. Baig, P.S. Stephanou, **V.G. Mavrantzas**, “Multiscale simulation of polymer melt viscoelasticity guided from nonequilibrium statistical thermodynamics: Atomistic nonequilibrium thermodynamics coupled with Monte Carlo in an expanded statistical ensemble”, *7th Panhellenic Chemical Engineers Conference*, Patras, Greece, June 3-5, **2009**.
126. P.S. Stephanou, C. Baig, G. Tsolou, **V.G. Mavrantzas**, M. Kröger, “Quantifying chain reptation in entangled polymer melts: Topological and dynamical mapping of atomistic simulation results onto the tube model”, *7th Panhellenic Chemical Engineers Conference*, Patras, Greece, June 3-5, **2009**.
127. G. Tsolou, **V.G. Mavrantzas**, “Study of the unique dynamic, barrier and glass transition properties of polyisobutylene through detailed molecular dynamics simulations”, *7th Panhellenic Chemical Engineers Conference*, Patras, Greece, June 3-5, **2009**.
128. C. Baig, O. Alexiadis, **V.G. Mavrantzas**, “Advanced Monte Carlo moves for the atomistic simulation of polymer melts with a variety of molecular architectures”, *4th International Conference from Scientific Computing to Computational Engineering (4th IC-SCCE)*, Athens, Greece, July 7-10, **2010**.
129. P.S. Stephanou, C. Baig, G. Tsolou, **V.G. Mavrantzas**, “Mapping atomistic simulation results for the dynamics of entangled polymer melts onto the tube model of the reptation theory”, *4th International Conference from Scientific Computing to Computational Engineering (4th IC-SCCE)*, Athens, Greece, July 7-10, **2010**.
130. C. Baig, P.S. Stephanou, G. Tsolou, **V.G. Mavrantzas**, “From atomistic trajectories to primitive paths to the reptation theory: Topological and dynamical mapping of molecular dynamics simulation data onto the tube model”, *8th Hellenic Polymer Society Symposium (ELEP 2010)*, Hersonissos, Crete, October 24-29, **2010**.
131. G. Tsolou, N. Stratikis, C. Baig, P.S. Stephanou, **V.G. Mavrantzas**, “Melt Structure and Dynamics in melts of Unentangled Polyethylene Rings: Rouse Theory, Atomistic Molecular Dynamics Simulation, and Comparison with the Linear Analogues”, *8th Hellenic Polymer Society Symposium (ELEP 2010)*, Hersonissos, Crete, October 24-29, **2010**.
132. C. Baig, P.S. Stephanou, G. Tsolou, **V.G. Mavrantzas**, “Quantitative analysis of segmental tube survival probabilities in entangled binary polymer mixtures from a direct mapping of atomistic MD simulation results onto the tube model”, *AIChE Annual Meeting*, Salt Lake City, Utah, USA, Nov. 7-12, **2010**.

133. G. Tsolou, N. Stratikis, C. Baig, P.S. Stephanou, **V.G. Mavrantzas**, “Atomistic molecular-dynamics study of the structural and dynamical properties of unentangled polymer rings: Comprehensive analysis of the Rouse model and comparison with the simulation predictions”, *AIChE Annual Meeting*, Salt Lake City, Utah, USA, Nov. 7-12, **2010**.
134. G.N. Nomikos, D.I. Kondarides, **V.G. Mavrantzas**, X.E. Verykios, “Photocatalytic reactor design for energy and environmental applications”, *8th Panhellenic Chemical Engineers Conference*, Thessaloniki, Greece, May 26-28, **2011**.
135. G.N. Nomikos, D.I. Kondarides, **V.G. Mavrantzas**, X.E. Verykios, “Photocatalytic reactor design for energy and environmental applications”, *2011 International Conference on H₂ production (ICH2P-2011)*, Thessaloniki, Greece, June 19-22, **2011**.
136. P.S. Stephanou, G. Tsolou, N. Stratikis, C. Baig, V.G. Mavrantzas, “Rouse theory for polymer rings and comparison with atomistic molecular-dynamics simulations”, *6th International Meeting of the Hellenic Society of Rheology*, Athens, Greece, June 28-29, **2011**.
137. P.S. Stephanou, C. Baig, G. Tsolou, M. Kröger, V.G. Mavrantzas, “Quantifying chain reptation in entangled polymer melts: Topological and dynamical mapping of atomistic simulation results onto the tube model”, *6th International Meeting of the Hellenic Society of Rheology (HSR 2011)*, Athens, Greece, June 28-29, **2011**.
138. A. Anastasiou, C. Baig, **V.G. Mavrantzas**, “Non-equilibrium Molecular Dynamics simulation of the stretching behavior of adhesive polymers”, *6th International Meeting of the Hellenic Society of Rheology (HSR 2011)*, Athens, Greece, June 28-29, **2011**.
139. P.S. Stephanou, C. Baig, **V.G. Mavrantzas**, “Generalized viscoelastic model for polymer melts guided by principles of non-equilibrium thermodynamics: Single- and multi-mode formulations”, *7th GRACM International Congress on Computational Mechanics (7th GRACM)*, Athens, Greece, June 30-July 2, **2011**.
140. A. Anastasiou, C. Baig, **V.G. Mavrantzas**, “Non-equilibrium molecular dynamics simulation of the stretching behavior of adhesive polymers”, *7th GRACM International Congress on Computational Mechanics (7th GRACM)*, Athens, Greece, June 30-July 2, **2011**.
141. E. Karahaliou, O. Alexiadis, V.G. Mavrantzas, “Monte Carlo Simulation of Water Nanosorption in Carbon Nanotubes”, *2011 International Conference on the Science and Application of Nanotubes (NT2011)*, Cambridge, UK, July 11-16, **2011**.
142. A. Anastasiou, C. Baig, **V.G. Mavrantzas**, “Non-equilibrium molecular dynamics simulation of the stretching behavior of adhesive polymers”, *Thermodynamics 2011*, Athens, Greece, September 1-3, **2011**.
143. E. Karahaliou, O. Alexiadis, **V.G. Mavrantzas**, “Atomistic simulation of the nanosorption and nanofluidics of small molecules in carbon nanotubes”, *Thermodynamics 2011*, Athens, Greece, September 1-3, **2011**.
144. P.S. Stephanou, C. Baig, **V.G. Mavrantzas**, “Quantifying chain reptation in entangled polymer melts: Topological and dynamical mapping of atomistic simulation results onto the tube model”, *17th International Workshop on Numerical Methods for non-Newtonian flows (IWNMNNF 2012)*, Blois castle, France, March 25-28, **2012**.
145. P.S. Stephanou, C. Baig, **V.G. Mavrantzas**, “Quantifying chain reptation in entangled polymer melts: topological and dynamical mapping of atomistic simulation results onto the tube model”, *The XVIth International Congress on Rheology (ICR 2012)*, Lisbon, Portugal, August 5-10, **2012**.
146. **V.G. Mavrantzas**, P.S. Stephanou, N. Stratikis, T. Koukoulas, G. Tsolou, and C. Baig, “Rouse theory for polymer rings and comparison with atomistic molecular-dynamics simulations and experimental data”, *The XVIth International Congress on Rheology (ICR 2012)*, Lisbon, Portugal, August 5-10, **2012**.
147. C. Baig, P.S. Stephanou, **V.G. Mavrantzas**, “Quantifying chain reptation in entangled polymer melts: topological and dynamical mapping of atomistic simulation results onto the tube model”, *The 23rd International Congress on Theoretical and Applied Mechanics (ICTAM 2012)*, Beijing, China, August 20-25, **2012**.
148. D. Tsalikis, C. Baig, **V.G. Mavrantzas**, L. Amanatidis, D. Mataras, “Hierarchical simulation of microcrystalline PECVD silicon film growth and structure”, *13th International Conference on Plasma Surface Engineering (PSE 2012)*, Garmisch-Partenkirchen, Germany, September 10 - 14, **2012**.

149. D. Tsalikis, C. Baig, **V.G. Mavrantzas**, E. Amanatidis, D. Mataras, “Hierarchical simulation of microcrystalline silicon thin films growth and structure”, Proceedings, *27th European Photovoltaic Solar Energy Conference and Exhibition (EU PSVEC 2012)*, Messe Frankfurt, Germany, September 25-28, **2012**.
150. E. Karahaliou, A. Anastasiou, **V.G. Mavrantzas**, “Atomistic simulation of the nanosorption and nanofluidics of small molecules in carbon nanotubes”, *GraphHEL Conference*, Mykonos, Greece, September 27-30, **2012**.
151. A. Anastasiou, M. Skountzos, S. Sabethai, **V.G. Mavrantzas**, “Molecular Dynamics simulation study of the structural and mechanical properties of graphene-based polymer nanocomposites”, *GraphHEL Conference*, Mykonos, Greece, September 27-30, **2012**.
152. P.S. Stephanou, **V.G. Mavrantzas**, “Improved tube models for the dynamics of entangled polymer melts”, Proceedings, *FLOW 2012 Meeting*, Volos, Greece, November 16-17, **2012**.
153. P.S. Stephanou, **V.G. Mavrantzas**, G.C. Georgiou, “A constitutive equation for the description of the rheological behavior of polymer nanocomposites based on principles of non-equilibrium thermodynamics”, Proceedings, *FLOW 2012 Meeting*, Volos, Greece, November 16-17, **2012**.
154. **V.G. Mavrantzas**, T. Koukoulas, D. Tsalikis, P.S. Stephanou, “Atomistic molecular dynamics simulations of the conformational, dynamic, and topological properties of ring polymer melts”, *245th ACS National Meeting & Exposition*, New Orleans, USA, April 7-11, **2013**.
155. P.S. Stephanou, **V.G. Mavrantzas**, G.C. Georgiou, “A constitutive equation for the description of the rheological behavior of polymer nanocomposites based on principles of non-equilibrium thermodynamics”, *9th Panhellenic Chemical Engineers Conference*, Athens, Greece, 23-25 May, **2013**.
156. P.S. Stephanou, **V.G. Mavrantzas**, “Modeling at multiple scales of the linear viscoelastic properties of polymer melts: From atoms, to molecules, to primitive paths, to tube models”, *9th Panhellenic Chemical Engineers Conference*, Athens, Greece, 23-25 May, **2013**.
157. E. Skountzos, A. Anastasiou, S. Sabethai, **V.G. Mavrantzas**, D.N. Theodorou, “Polymer-graphene nanocomposites: atomistic modeling and simulation of their mechanical properties”, *9th Panhellenic Chemical Engineers Conference*, Athens, Greece, 23-25 May, **2013**.
158. T. Koukoulas, D. Tsalikis, P.S. Stephanou, **V.G. Mavrantzas**, “Conformational dynamics and topological analysis for polymer rings via atomistic molecular-dynamics simulations and comparison with experimental data”, *10th HSTAM International Congress on Mechanics*, Chania, Crete, Greece, 25-27 May, **2013**.
159. E. Karahaliou, A. Anastasiou, **V.G. Mavrantzas**, “Water permeability through CNT-polymer nanocomposites: an atomistic simulation study”, *10th HSTAM International Congress on Mechanics*, Chania, Crete, Greece, 25-27 May, **2013**.
160. A. Anastasiou, **V.G. Mavrantzas**, “Molecular dynamics simulation of the adhesive properties of acrylic polymers”, *10th HSTAM International Congress on Mechanics*, Chania, Crete, Greece, 25-27 May, **2013**.
161. O. Alexiadis, **V.G. Mavrantzas**, “All-atom molecular dynamics simulation of the structural, thermodynamic, and packing properties of the pure amorphous and pure crystalline phases of regioregular P3HT”, *6th International Symposium on Flexible Organic Electronics (ISFOE13)*, Thessaloniki, Greece, 8-11 July, **2013**.
162. P.S. Stephanou, **V.G. Mavrantzas**, G.C. Georgiou, “A differential constitutive equation for polymer nanocomposites based on principles of non-equilibrium thermodynamic”, *Thermodynamics 2013*, Manchester, UK, September 3-6, **2013**.
163. **V.G. Mavrantzas**, P.S. Stephanou, C. Baig, “Multiscale modeling of entangled polymers: from atoms, to primitive paths, to tube models, to the linear viscoelasticity of high-MW polymer melts”, *246th ACS National Meeting & Exposition, Indianapolis*, USA, September 8-12, **2013**.
164. P.V. Alatas, **V.G. Mavrantzas**, “Applications of a Thermodynamic, Non-Linear Quantum Master Equation to a Three-Level and a Harmonic Oscillator System Coupled with Two Heat Baths”, *29th Panhellenic Conference on Solid State Physics and Materials Science*, Athens, Greece, September 22-25, **2013**.
165. P.S. Stephanou, **V.G. Mavrantzas**, G.C. Georgiou, “A differential constitutive equation for polymer nanocomposites based on principles of non-equilibrium thermodynamics”, *9th Annual European Rheology Conference (AERC-2014)*, Karlsruhe, Germany, April 8-11, **2014**.

166. P.S. Stephanou, **V.G. Mavrantzas**, “Multi-scale modeling of high-MW polymer melt viscoelasticity starting from the atomistic level”, *9th Annual European Rheology Conference (AERC-2014)*, Karlsruhe, Germany, April 8-11, **2014**.
167. D.G. Tsalikis, T. Koukoulas, **V.G. Mavrantzas**, “Conformational dynamics and topological analysis of polymer rings via atomistic molecular dynamics simulations and comparison with experimental data”, *9th Annual European Rheology Conference (AERC-2014)*, Karlsruhe, Germany, April 8-11, **2014**.
168. E. Skountzos, A. Anastassiou, **V.G. Mavrantzas**, “Atomistic modeling and simulation of the dynamic and mechanical properties of poly(methyl methacrylate) - graphene nanocomposites”, *7th International Meeting of the Hellenic Society of Rheology (HSR 2014)*, Heraklion, Crete, Greece, June 07-10, **2014**.
169. D.G. Tsalikis, **V.G. Mavrantzas**, “Threading of ring poly(ethylene oxide) molecules by linear chains in the melt under equilibrium and non-equilibrium molecular dynamics simulations”, *7th International Meeting of the Hellenic Society of Rheology (HSR 2014)*, Heraklion, Crete, Greece, June 07-10, **2014**.
170. P.S. Stephanou, **V.G. Mavrantzas**, G.C. Georgiou, “A non-equilibrium thermodynamics-based model for the phase behavior, microstructure and rheology of polymer nanocomposite melts”, *7th International Meeting of the Hellenic Society of Rheology (HSR 2014)*, Heraklion, Crete, Greece, June 07-10, **2014**.
171. P.S. Stephanou, **V.G. Mavrantzas**, G.C. Georgiou, “Continuum Model for the Phase Behavior, Microstructure, and Rheology of Unentangled Polymer Nanocomposite Melts”, *10th Hellenic Polymer Society Conference (ELEP 2014)*, Patras, Greece, December 04-06, **2014**.
172. D.G. Tsalikis, T. Koukoulas, **V.G. Mavrantzas**, D. Vlassopoulos, “Dynamic, conformational and topological properties of ring poly(ethylene oxide) melts from molecular dynamics simulations”, *10th Hellenic Polymer Society Conference (ELEP 2014)*, Patras, Greece, December 04-06, **2014**.
173. F.D. Tsourtuou, O. Alexiadis, **V.G. Mavrantzas**, V. Kolonias, E. Housos, “Atomistic Monte Carlo and Molecular Dynamics simulation of the bulk phase self-assembly of semifluorinated alkanes”, *10th Hellenic Polymer Society Conference (ELEP 2014)*, Patras, Greece, December 04-06, **2014**.
174. P.G. Mermigkis, D.G. Tsalikis, **V.G. Mavrantzas**, “Prediction of the effective diffusivity of water inside CNT-based PMMA membranes”, *10th Hellenic Polymer Society Conference (ELEP 2014)*, Patras, Greece, December 04-06, **2014**.
175. E. Skountzos, A. Anastassiou, **V.G. Mavrantzas**, D.N. Theodorou, “Determination of the mechanical properties of a poly(methyl methacrylate) nanocomposite with functionalized graphene sheets through detailed atomistic simulations”, *10th Hellenic Polymer Society Conference (ELEP 2014)*, Patras, Greece, December 04-06, **2014**.
176. E.N. Skountzos, O. Alexiadis, K. Kasidiaris, **V.G. Mavrantzas**, “All-atom molecular dynamics simulation of the structural, thermodynamic, and packing properties of the pure amorphous and pure crystalline phases of P3HT and PQT semiconducting polymers”, *4th International Conference on Multifunctional, Hybrid and Nanomaterials*, Sitges (near Barcelona), Spain, March 9-13, **2015**.
177. S Tsouka, Y. Dimakopoulos, **V.G. Mavrantzas**, J. Tsamopoulos, “Application of the DCR tube model in thin film flow of dilute entangled polymer solutions that exhibit flow-induced concentration changes”, *10th Annual European Rheology Conference (AERC-2015)*, Nantes, France, April 14-17, **2015**.
178. K.D. Papadimitriou, E.N. Skountzos, S. Gkermoura, **V.G. Mavrantzas**, C. Galiotis, C. Tsitsilianis, “Synthesis and atomistic simulation of pyrene functionalized α,ω -PMMA as dispersing agent of graphene for the fabrication of polymer nanocomposites”, *Frontiers in Polymer Science (POLY 2015)*, Riva del Garda, Italy, May 20-22, **2015**.
179. E.N. Skountzos, O. Alexiadis, C. Kasidiaris, **V.G. Mavrantzas**, “All-atom molecular dynamics simulation of the structural, thermodynamic, and packing properties of the pure amorphous and pure crystalline phases of P3HT and PQT semiconducting polymers”, *Europolymer Conference on Conducting Polymeric Materials (EUPOC 2015)*, Gargnano, Lago di Garda, Italy, May 24-28, **2015**.

180. K. Karadima, **V.G. Mavrantzas**, S.N. Pandis, “Atmospheric Nanoparticles: A Molecular Dynamics Simulation Study”, *1st Workshop of Graduates and Post-Docs in Chemical Engineering Sciences*, Patras, Greece, May 27, **2015**.
181. F.D. Tsourtou, O. Alexiadis, **V.G. Mavrantzas**, V. Kolonias, E. Housos, “Atomistic Monte Carlo and Molecular Dynamics simulation of the bulk phase self-assembly of semifluorinated alkanes”, *1st Workshop of Graduates and Post-Docs in Chemical Engineering Sciences*, Patras, Greece, May 27, **2015**.
182. P.V. Alatas, **V.G. Mavrantzas**, H.C. Öttinger, “A non-linear thermodynamic master equation for open quantum systems and application to the phenomenon of electromagnetically induced transparency”, *10th Panhellenic Chemical Engineers Conference*, Patras, Greece, June 4-6, **2015**.
183. K.S. Karadima, **V.G. Mavrantzas**, S.N. Pandis, “A molecular dynamics simulation study of atmospheric nanoparticles”, *10th Panhellenic Chemical Engineers Conference*, Patras, Greece, 4-6 June, **2015**.
184. P.G. Mermigkis, D.G. Tsalikis, **V.G. Mavrantzas**, “Prediction of the effective diffusivity of water inside CNT-based PMMA membranes”, *10th Panhellenic Chemical Engineers Conference*, Patras, Greece, June 4-6, **2015**.
185. F.D. Tsourtou, O. Alexiadis, **V.G. Mavrantzas**, V. Kolonias, E. Housos, “Atomistic simulation of the bulk phase self-assembly of semifluorinated alkanes”, *10th Panhellenic Chemical Engineers Conference*, Patras, Greece, June 4-6, **2015**.
186. E.N. Skountzos, **V.G. Mavrantzas**, C. Tsitsilianis, “PMMA/Graphene nanocomposites: Atomistic simulation to predict graphene fine dispersability in polymer composites with the aid of functional PMMA”, *10th Panhellenic Chemical Engineers Conference*, Patras, Greece, June 4-6, **2015**.
187. K.S. Karadima, **V.G. Mavrantzas**, S.N. Pandis, “A molecular dynamics simulation study of atmospheric nanoparticles”, *28th European Symposium on Applied Thermodynamics (ESAT 2015)*, Athens, Greece, June 11-14, **2015**.
188. P.V. Alatas, **V.G. Mavrantzas**, “Applications of a thermodynamic, non-linear quantum master equation to a three-level and a harmonic oscillator system coupled with two heat baths”, *28th European Symposium on Applied Thermodynamics (ESAT 2015)*, Athens, Greece, June 11-14, **2015**.
189. F.D. Tsourtou, O. Alexiadis, **V.G. Mavrantzas**, V. Kolonias, E. Housos, “Atomistic simulation of the bulk phase self-assembly of semifluorinated alkanes”, *28th European Symposium on Applied Thermodynamics (ESAT 2015)*, Athens, Greece, June 11-14, **2015**.
190. E.N. Skountzos, O. Alexiadis, K. Kasidiaris, **V.G. Mavrantzas**, “Atomistic simulation of the structural and thermodynamic properties of organic semiconducting polymers”, *28th European Symposium on Applied Thermodynamics (ESAT 2015)*, Athens, Greece, June 11-14, **2015**.
191. C. Baig, **V.G. Mavrantzas**, “Simulation of polymer melts beyond equilibrium using a non-dynamic method (GENERIC Monte Carlo) in an expanded ensemble”, *7th International Workshop on Non-equilibrium Thermodynamics and Complex Fluids (IWNET 2015)*, Hilvarenbeek, The Netherlands, July 6-10, **2015**.
192. P. Stephanou, **V.G. Mavrantzas**, G.C. Georgiou, “A differential constitutive equation for polymer nanocomposites based on principles of non-equilibrium thermodynamics”, *7th International Workshop on Non-equilibrium Thermodynamics and Complex Fluids (IWNET 2015)*, Hilvarenbeek, The Netherlands, July 6-10, **2015**.
193. D.G. Tsalikis, **V.G. Mavrantzas**, D. Vlassopoulos, “Structural, conformational, dynamic and topological properties of ring poly(ethylene oxide) melts from molecular dynamics simulations and comparison with experimental data”, *8th GRACM International Congress on Computational Mechanics*, Volos, Greece, July 12-15 **2015**.
194. E.N. Skountzos, **V.G. Mavrantzas**, C. Tsitsilianis, “Atomistic simulation of pyrene functionalized α,ω -PMMA as dispersing agent of graphene for the fabrication of polymer nanocomposites”, *8th GRACM International Congress on Computational Mechanics*, Volos, Greece, July 12-15 **2015**.
195. P.G. Mermigkis, D.G. Tsalikis, **V.G. Mavrantzas**, “Prediction of the effective diffusivity of water inside CNT-based PMMA membranes”, *8th GRACM International Congress on Computational Mechanics*, Volos, Greece, July 12-15 **2015**.

196. P.S. Stephanou, I.Ch. Tsimouri, **V.G. Mavrantzas**, “Flow-induced orientation and stretching of entangled polymers in the framework of non-equilibrium thermodynamics”, *20th Anniversary Meeting of the European Society of Rheology*, ETH-Zurich, Switzerland, March 31 - April 1, **2016**.
197. D.G. Tsalikis, **V.G. Mavrantzas**, “Topological constraints in polymer rings”, *PRACE Scientific and Industrial Conference (PRACE days16)*, Budapest, Hungary, May 10-12, **2016**.
198. F. Tsourtou, **V.G. Mavrantzas**, “Optimized Atomistic Monte Carlo and Molecular Dynamics Algorithms for simulating self-assembly in soft matter”, *PRACE Scientific and Industrial Conference (PRACE days16)*, Budapest, Hungary, May 10-12, **2016**.
199. E.N. Skountzos, **V.G. Mavrantzas**, “Large-scale atomistic Molecular Dynamics simulation study of polymergraphene nanocomposites”, *PRACE Scientific and Industrial Conference (PRACE days16)*, Budapest, Hungary, May 10-12, **2016**.
200. V. Vasilev, E.N. Skountzos, E. Goudeli, **V.G. Mavrantzas**, S.E. Pratsinis, “Predicting the fractal-like structure of SiO₂ nanoparticles through molecular dynamics simulations using the potential of mean force”, *MaP Graduate Symposium*, ETH-Zurich, Switzerland, June 9, **2016**.
201. D.G. Tsalikis, **V.G. Mavrantzas**, D. Vlassopoulos, “Geometric analysis of ring-ring threading events in melts of ring polymers and their connection with the slow relaxation modes”, *XVIIth International Congress on Rheology (ICR 2016)*, Kyoto, Japan, August 8 - 13, **2016**.
202. P. Alatas, D. Tsalikis, **V.G. Mavrantzas**, “Molecular dynamics simulation of the structure and self-diffusion of short linear and cyclic n-alkanes in melt and blends”, *2nd Workshop of Graduates and Post-Docs in Chemical Engineering Sciences*, Patras, Greece, September 23, **2016**.
203. P.S. Stephanou, D.G. Tsalikis, **V.G. Mavrantzas**, “Multiscale modelling approach to the rheological behavior of polymer nanocomposites: Nonequilibrium thermodynamics modeling coupled with NEMD simulations”, *8th International Conference on Multiscale Materials Modeling (MMM-2016)*, Dijon, France, October 9-14, **2016**.
204. P.V. Alatas, D. G. Tsalikis, **V.G. Mavrantzas**, “Comparison of the conformational and dynamic properties between ring and linear poly(ethylene oxide) melts from molecular dynamics simulations in the crossover regime from unentangled to entangled”, *11th Hellenic Polymer Society Conference (ELEP 2016)*, Heraklion, Crete, Greece, November 3-5, **2016**.
205. P.G. Mermigkis, E.N. Skountzos, **V.G. Mavrantzas**, “Atomistic molecular dynamics simulation of water mobility inside Carbon Nanotubes embedded in a PMMA matrix”, *11th Hellenic Polymer Society Conference (ELEP 2016)*, Heraklion, Crete, Greece, November 3-5, **2016**.
206. E.N. Skountzos, **V.G. Mavrantzas**, C. Tsitsilianis, “Atomistic simulation of pyrene functionalized α,ω -PMMA as dispersing agent of graphene for the fabrication of polymer nanocomposites”, *11th Hellenic Polymer Society Conference (ELEP 2016)*, Heraklion, Crete, Greece, November 3-5, **2016**.
207. P.S. Stephanou, D.G. Tsalikis, P.V. Alatas, **V.G. Mavrantzas**, “Non-equilibrium thermodynamics modelling and atomistic simulation of polymer nanocomposites”, *11th Hellenic Polymer Society Conference (ELEP 2016)*, Heraklion, Crete, Greece, November 3-5, **2016**.
208. D.G. Tsalikis, **V.G. Mavrantzas**, D. Vlassopoulos, “Geometric analysis of threading events in melts of ring polymers and their connection with the slow relaxation modes”, *11th Hellenic Polymer Society Conference (ELEP 2016)*, Heraklion, Crete, Greece, November 3-5, **2016**.
209. I.Ch. Tsimouri, Ch.K. Georgantopoulos, P.S. Stephanou, **V.G. Mavrantzas**, “Derivation of a recently proposed CCR model through the use of non-equilibrium thermodynamics”, *11th Hellenic Polymer Society Conference (ELEP 2016)*, Heraklion, Crete, Greece, November 3-5, **2016**.
210. F.D. Tsourtou, **V.G. Mavrantzas**, “Atomistic Monte Carlo and Molecular Dynamics Algorithms for the simulation of self-assembly in soft matter”, *11th Hellenic Polymer Society Conference (ELEP 2016)*, Heraklion, Crete, Greece, November 3-5, **2016**.
211. E.N. Skountzos, **V.G. Mavrantzas**, S.E. Pratsinis, “From atoms to primary particles to agglomerates: Hierarchical modeling of the fractal dimensions of nanoparticles”, *2016 MRS Fall Meeting & Exhibit*, Boston, USA, November 27 - December 2, **2016**.
212. E.N. Skountzos, **V.G. Mavrantzas**, C. Tsitsilianis, “Atomistic simulation of pyrene functionalized α,ω -PMMA as dispersing agent of graphene for the fabrication of polymer nanocomposites”, *2016 MRS Fall Meeting & Exhibit*, Boston, USA, November 27 - December 2, **2016**.

213. D.G. Tsalikis, E.N. Skountzos, **V.G. Mavrantzas**, “Computational study of microscopic dynamics in Polyethylene Glycol melts filled with Silica Nanoparticles and comparison with experimental data”, *2016 MRS Fall Meeting & Exhibit*, Boston, USA, November 27 - December 2, **2016**.
214. P.S. Stephanou, D.G. Tsalikis, P.V. Alatas, **V.G. Mavrantzas**, “Multiscale modelling approach to the rheological behaviour of polymer nanocomposites: Nonequilibrium thermodynamics modelling coupled with NEMD simulations”, *11th Annual European Rheology Conference (AERC-2017)*, Copenhagen, Denmark, April 3-6, **2017**.
215. I.C. Tsimouri, C.K. Georgantopoulos, P.S. Stephanou, **V.G. Mavrantzas**, “Derivation of a recently proposed CCR model through the use of non-equilibrium thermodynamics”, *11th Annual European Rheology Conference (AERC-2017)*, Copenhagen, Denmark, April 3-6, **2017**.

INVITED LECTURES

1. “*Atomistic simulation of the viscoelasticity of unentangled polymer melts*”, Institute for Polymers, Department of Materials, ETH, Zürich, Switzerland, February **2000**.
2. “*Modeling the rheology of polymer melts through multiscale modeling*”, Dow Chemicals, Midland, December **2000**.
3. “*Hierarchical modeling of the rheology of polymer melts*”, CECAM-SIMU Workshop, Multiscale Modeling of Materials, Heraklion, Crete, July **2001**.
4. “*Atomistic simulation of polymer melts off equilibrium using principles of irreversible thermodynamics*”, CPERI-CERTH, Salonica, October **2001**.
5. “*Molecular simulations of polymers with emphasis on their viscoelasticity*”, 5th Panhellenic Conference on Polymers, Heraklion, Crete, December 15-17, **2001**.
6. “*A hierarchical model for the rheology of polymers in confined geometries*”, Institute for Polymers, Department of Materials, ETH, Zürich, Switzerland, February **2002**.
7. “*Polymer melts grafted on a solid substrate or graphite: Detailed atomistic simulation of their interfacial properties and ²H-NMR spectrum*”, XVIII Panhellenic Conference on Solid State Physics-Materials Science, Heraklion, Crete, September 15-18, **2002**.
8. “*Atomistic simulations of polymers at multiple time and length scales*”, Max-Planck Institute for Polymer Research (MPI-P), Mainz, Germany, March **2003**.
9. “*Hierarchical modelling of polymers with a non-linear molecular architecture: Calculation of branch point friction and chain reptation time of an H-shaped polyethylene melt from detailed atomistic simulations*”, 1st Mainz Materials Simulation Days (MMSD 2005), Max-Planck Institute for Polymer Research (MPI-P), Mainz, Germany, June 8-10, **2005**.
10. “*Hierarchical modelling of polymers with a non-linear molecular architecture: Calculation of branch point friction and chain reptation time of an H-shaped polyethylene melt from detailed atomistic simulations*”, Japan Society of Technology (JST) Symposium: “Towards Multi-scale Modeling in Soft Matter”, Tokyo, Japan, June 21-22, **2005**.
11. “*Multi-scale modelling of polymers with a non-linear molecular architecture*”, Keynote lecture, International Workshop on Mesoscale and Multiscale Description of Complex Fluids, Prato, Italy, July 5-8, **2006**.
12. “*Simulation of polymers with a non-linear molecular architecture*”, EKETA-ITXHΔ, February 3, **2006**.
13. “*Multi-scale modeling of polymers with a non-linear molecular architecture*”, Keynote lecture, International Workshop on Mesoscale and Multiscale Description of Complex Fluids, Prato, Italy, July 5-8, **2006**.
14. “*Thermodynamically guided atomistic Monte Carlo simulation of polymer melts beyond equilibrium*”, International Workshop on Multi-scale Modeling and Simulation of Complex Fluids, Maryland, USA, April 13-19, **2007**.
15. “*Polymer melt viscoelasticity: What can we learn from molecular simulations*”, Department of Materials Science, University of Crete, Heraklion, Crete, May 25, **2007**.
16. “*Polymer melt viscoelasticity: What can we learn from molecular simulations*”, Department of Applied Physics, University of Eindhoven, Eindhoven, The Netherlands, October 1, **2007**.
17. “*Hierarchical Modeling of Polymers: From the atomistic to the meso- to the macro-scale*”, ENPC, Paris, November 26, **2007**.

18. *“Modeling in nanomaterials: The Monte Carlo Method”*, International school on Nanostructure materials and membranes modeling and simulation, FORTH-ICE/HT, Patras, June 18-27, **2008**.
19. *“Atomistic Monte Carlo methodology for generating realistic flows of polymers guided by principles of non-equilibrium thermodynamics”*, Polymer Physics Gordon Conference, Salve Regina University, Rhode Island, USA, June 29 - July 4, **2008**.
20. *“Hierarchical modeling of polymers at equilibrium and beyond-equilibrium conditions with emphasis on their mechanics and viscoelasticity”*, DSM-Sabic R&D, The Netherlands, September 26, **2008**.
21. *“Hierarchical modeling of polymers at equilibrium and beyond equilibrium conditions with emphasis on viscoelasticity”*, International seminar on Multi-scale modeling and simulation, Trondheim, Norway, October 13-14, **2008**.
22. *“Multiscale simulation of polymer melt viscoelasticity guided from non-equilibrium statistical thermodynamics: Atomistic Non-Equilibrium Molecular Dynamics coupled with Monte Carlo in an expanded statistical ensemble”*, 6th International Discussion Meeting on Relaxations in Complex Systems, Rome, Italy, August 30 - September 5, **2009**.
23. *“Quantifying chain reptation in entangled polymer melts: Topological and dynamical mapping of atomistic simulation results onto the tube model”*, Theory and Computer Simulation of Polymers", Moscow, Russia, May 31 - June 6, **2010**.
24. *“Modeling polymer melt viscoelasticity: Quantifying chain reptation in entangled polymer melts through a novel topological and dynamical mapping of atomistic simulation results onto the tube model”*, International Workshop on Novel Simulation methods in Soft matter Systems (NSASM-2010)", Dresden, Germany, September 20-24, **2010**.
25. *“Atomic and electronic structure of polymer organic semiconductors: What we can learn from computer simulations at different scales”*, 9th Hellenic Polymer Society Symposium (ELEP 2012), Thessaloniki, Greece, November 29-December 01, **2012**.
26. *“Interfacing molecular simulations with theories of polymer dynamics: the case of entangled polymer melts and polymer rings”*, Department of Materials Science, University of Crete, Heraklion, Crete, March 01, **2013**.
27. *“Topological interactions in ring poly(ethylene oxide) melts and their correlation with conformational and rheological properties: A computer simulation study”*, Ring Polymers: Advances and Applications, Heraklion, Crete, July 12-15, **2015**.
28. *Simulation of polymer melts beyond equilibrium using a non-dynamic method (GENERIC Monte Carlo) in an expanded ensemble*, Technical University of Eindhoven, April 19, **2016**.
29. *Using nonequilibrium thermodynamics to extend atomistic Monte Carlo simulations of polymers beyond equilibrium*, Darmstadt University, October 4-6, **2016**.