

Publication list

from the period Jan. 2007 to Feb. 2012

Articles published in peer-reviewed journals

1. Measuring the dynamic thermal expansivity of molecular liquids near the glass transition,
K. Niss, T. Christensen, and J. C. Dyre, *Phys. Rev. E* **85**, 016313 (12 pages) (2012).
2. Identical temperature dependence of the time scales of several linear-response functions of two glass-forming liquids,
B. Jakobsen, T. Hecksher, T. Christensen, N. B. Olsen, J. C. Dyre, and **K. Niss**, *J. Chem. Phys - communication* **136**, 081102 (4 pages) (2012).
3. Predicting the density-scaling exponent of a glass-forming liquid from Prigogine-Defay ratio measurements,
D. Gundermann, U. R. Pedersen, T. Hecksher, N. P. Bailey, B. Jakobsen, T. Christensen, N. B. Olsen, T. B. Schröder, D. Fragiadakis, R. Casalini, C. M. Roland, J. C. Dyre, and **K. Niss**, *Nature Physics* **7**, 816–821 (2011).
4. Beta relaxation in the shear mechanics of viscous liquids: Phenomenology and network modeling of the alpha-beta merging region,
B. Jakobsen, **K. Niss**, C. Maggi, N.B. Olsen, T. Christensen, and J.C. Dyre, *J. Non-Cryst. Solids* **357**, 267–273 (2011).
5. The Role of Chain Length in Nonergodicity Factor and Fragility of Polymers,
C. Dalle-Ferrier, **K. Niss**, A.P. Sokolov, B. Frick, J. Serrano, and C. Alba-Simionesco, *Macromol.* **43**, 8977–8984 (2010).
6. Physical aging of molecular glasses studied by a device allowing for rapid thermal equilibration,
T. Hecksher, N. B. Olsen, **K. Niss** and J. C. Dyre, *J. Chem. Phys.* **133**, 174514 (14 pages) (2010).
7. Connection between slow and fast dynamics of molecular liquids around the glass transition,
K. Niss, C. Dalle-Ferrier, B. Frick, D. Russo, J. C. Dyre and C. Alba-Simionesco, *Phys. Rev. E* **82**, 021508 (8 pages) (2010).
8. An electrical circuit model of the alpha beta merging seen in dielectric relaxation of ultra viscous liquids,
N. Sağlanmak, A. I. Nielsen, N. B. Olsen, J. C. Dyre, and **K. Niss**, *J. Chem Phys.* **132**, 024503 (12 pages) (2010).

9. Prevalence of approximate square root t relaxation for the dielectric alpha process in viscous organic liquids,
A. Nielsen, T. Christensen, B. Jakobsen, **K. Niss**, N. B. Olsen and J. C. Dyre, *J. Chem. Phys.* **130**, 154508 (15 pages) (2009).
10. A brief critique of the Adam-Gibbs entropy model,
J. C. Dyre, T. Hecksher, **K. Niss**, *J. Non-Cryst. Solids* **355**, 624–627 (2009).
11. Glassy properties and viscous slowing down: An analysis of the correlation between nonergodicity factor and fragility,
K. Niss, C. Dalle-Ferrier, V. M. Giordano, G. Monaco, B. Frick, and C. Alba-Simionesco, *J. Chem Phys.* **129**, 194513 (15 pages) (2008).
12. Glass-forming liquids: one or more “order” parameters,
N. Bailey, T. Christensen, B. Jakobsen, **K. Niss**, N. B. Olsen, U. R. Pedersen, T. Schröder and J. C. Dyre, *J. Phys-Condens. Mat.* **20**, 244113 (8 pages) (2008).
13. Influence of pressure on the boson peak: Stronger than elastic medium transformation,
K. Niss, B. Frick, J. Ollivier, A. Beraud, A. Sokolov, B. Begen, V. Novikov, and C. Alba-Simionesco, *Phys. Rev. Lett.* **99**, 055502 (4 pages) (2007).
14. On the correlation between fragility and stretching in glassforming liquids,
K. Niss, C. Dalle-Ferrier, G. Tarjus, and C. Alba-Simionesco, *J. Phys-Condens. Mat.* **19**, 076102 (25 pages) (2007).
15. Streamline topology in the near-wake of a circular cylinder at low Reynolds numbers,
M. Brøns, B. Jakobsen, **K. Niss**, A. Bisgaard, and L. Voigt, *J. Fluid Mech.* **584**, 23–43 (2007).
16. Effects of density and temperature on correlations between fragility and glassy properties,
K. Niss and C. Alba-Simionesco, *Phys. Rev. B.* **74**, 024205 (7 pages) (2006).
17. Influence of pressure on fast dynamics in polyisobutylene,
B. Begen, A. Kisliuk, V. N. Novikov, A. P. Sokolov, **K. Niss**, A. Chauty-Cailliaux, C. Alba-Simionesco, B. Frick, *J. Non-Chryst. Solids* **352**, 4583–4588 (2006).
18. Dielectric and shear mechanical relaxations in glass-forming liquids: A test of the Gemant-DiMarzio-Bishop model,
K. Niss, B. Jakobsen, and N. B. Olsen, *J. Chem. Phys.* **123**, 234510 (8 pages) (2005).

19. Dielectric and shear mechanical alpha and beta relaxations in seven glass-forming liquids,
B. Jakobsen, **K. Niss**, and N. B. Olsen, *J. Chem. Phys.* **123**, 234511 (9 pages) (2005).

Oral conference contributions

1. First measurements of three independent thermoviscoelastic linear-response functions in a glass-forming liquid.
K. Niss, D. Gundermann, T. Hecksher, B. Jakobsen, N. B. Olsen, T. Christensen and J. Dyre, The 16th International Conference on Internal Friction and Mechanical Spectroscopy Lausanne, Switzerland, 3.6.-8.6.2011
2. An experimentalists view on strongly correlating liquids,
K. Niss, D. Gundermann, U. R. Pedersen, T. Schröder, T. Hecksher, B. Jakobsen, A. I. Nielsen, N. Gnan, N. P. Bailey, N. B. Olsen, T. Christensen and J. Dyre, Viscous Liquids and the Glass Transition (VIII) Holbæk, Denmark, 28.05.-30.05.2010
3. An experimentalists view on strongly correlating liquids,
K. Niss, D. Gundermann, U. R. Pedersen, T. Schröder, T. Hecksher, B. Jakobsen, A. I. Nielsen, N. Gnan, N. P. Bailey, N. B. Olsen, T. Christensen and J. Dyre, XII International Workshop on Complex Systems, Andalo, Italy, 15.03.-18.03.2010
4. Experimental Methods of the “Glass and Time” Group,
K. Niss, N. B. Olsen, T. Christensen, B. Jakobsen, A. Nielsen, T. Hecksher, C. Maggi, J. Papini, D. Gundermann
Danish Glass Symposium, Aalborg University, Denmark, 19.02.2010
5. Density and temperature,
K. Niss, D. Gundermann, A. Nielsen, C. Dalle-Ferrier, C. Alba-Simionesco, T. Schröder, and J. C. Dyre
Invited talk given at the 6th International discussion meeting on relaxations in complex systems; Rome, Italy, 30.08.-05.09.2009.
6. The ideal aging experiment,
K. Niss, T. Hecksher, N. B. Olsen, and J. C. Dyre, Viscous liquids and the glass transition VII; Holbæk, Denmark, 24.04.-26.04.2009 .
7. Fragility and its (proposed) correlation to other properties – What can we learn from high pressure experiments?,
K. Niss, C. Dalle-Ferrier and C. Alba-Simionesco, Fragility of viscous liquids: Cause(s) and consequences; Copenhagen, Denmark. 08.10 - 10.10.2008.

8. Is the viscous slowing down controlled by the elastic constants?
K. Niss, B. Jakobsen, C. Maggi, R. B. Godiksen, T. Larsen, T. E. Christensen, N. B. Olsen and J. C. Dyre. Invited talk. International workshop on glass and entropy; Trencin, Slovakia. 25.06 - 27.06.2008.
9. Shear relaxation in viscous molecular liquids,
K. Niss, B. Jakobsen, C. Maggi, R. B. Godiksen, T. Larsen, T. E. Christensen, N. B. Olsen and J. C. Dyre, Annual meeting of the Danish Physical Society; Nyborg, Denmark, 17.06 - 18.06.2008.
10. Merging of the alpha and beta relaxations,
K. Niss, N. Saglanmak, J. C. Dyre and N. B. Olsen, XI Workshop on complex systems; Andalo, Italy, 17.03 - 20.03.2008.
11. Pressure dependence of the boson peak in glasses,
K. Niss and C. Alba-Simionesco, Annual meeting of the Danish Physical Society; Nyborg, Denmark, 01.06.-02.06.2006.
12. Density versus temperature effects on correlations between fragility and glassy properties,
K. Niss and C. Alba-Simionesco, Viscous liquids and the glass transition V; Holbæk, Denmark, 26.05.-28.05.2006.
13. Molecular weight and glass transition in PIB,
K. Niss B. Frick, J. Ollivier, A. Beraud, A. Sokolov, and C. Alba-Simionesco, First International Workshop on neutron brillouin scattering; Perugia, Italy 12.06.-14.06.2005.
14. Mean square displacement and fragility,
K. Niss, Viscous liquids and the glass transition IV; Holbæk, Denmark 03.06.-05.06.2005.
15. Structure and boson peak in polymers at high pressure,
K. Niss B. Frick, J. Ollivier, A. Beraud, A. Sokolov, and C. Alba-Simionesco, Journées de la diffusion neutronique JDN12; Praz-sur-Arly, France, 23.05.-26.05.2004.
16. Dielectric and shear mechanical relaxation in viscous Liquids: Are they Connected?, **K. Niss**, **B. Jakobsen**, and N.B. Olsen, Viscous liquids and the glass transition IIV; Holbæk, Denmark 09.05.-11.05.2003.

Poster contributions

1. First measurements of three independent thermoviscoelastic linear-response functions in a glass-forming liquid,
K. Niss, B. Jakobsen, T. Hecksher, T. Christensen, N. B. Olsen, and J. C. Dyre. Gordon Research Conference on Chemistry & Physics of Liquids, Holderness, USA, 24.07.-29.07.2011

2. Dynamic thermal expansivity of a molecular liquid near the glass transition,
K. Niss, N. B. Olsen, T. Christensen, and J. C. Dyre, International Workshop on Dynamics in Viscous Liquids, Rome, Italy, 30.03.-2.04.2011
3. Boson peak and fragilities,
K. Niss, C. Dalle-Ferrier, and C. Alba-Simionesco, IV Workshop on non equilibrium phenomena in supercooled fluids, glasses and amorphous materials; Pisa, Italy, 17.09.-22.09.2006.
4. Pressure dependence of the boson peak in polymers and molecular liquids,
K. Niss B. Frick, J. Ollivier, A. Sokolov, 5th International discussion meeting on relaxations in complex systems; Lille, France, 6.07.-13.07.2005.
5. Can dielectric spectroscopy tell us anything about the frequency dependent shear modulus?,
K. Niss, B. Jakobsen and N.B. Olsen, Broadband dielectric spectroscopy and its applications; Delft, Holland, 23.08.-26.08.2004.