

List of Publications

Kristine Niss

Articles published in peer reviewed journals

1. Thermalization calorimetry: A simple method for investigating glass transition and crystallization of supercooled liquids
B. Jakobsen, A. Sanz, **K. Niss**, T. Hecksher, I. H. Pedersen, T. Rasmussen, T. Christensen, N. B. Olsen and J. C. Dyre *AIP Advances* **6**, 055019 (2016).
2. Communication: High pressure specific heat spectroscopy reveals simple relaxation behavior of glass forming molecular liquid
L. A. Roed, **K. Niss**, and B. Jakobsen *J. Chem. Phys.*, **143**, 221101 (2015).
3. Communication: Slow supramolecular mode in amine and thiol derivatives of 2-ethyl-1-hexanol revealed by combined dielectric and shear-mechanical studies
K. Adrjanowicz, B. Jakobsen, T. Hecksher, K. Kaminski, M. Dulski, M. Paluch, and **K. Niss** *J. Chem. Phys.*, **143**, 181102 (2015).
4. A systematic study of the isothermal crystallization of the mono-alcohol n-butanol monitored by dielectric spectroscopy
M. H. Jensen, C. Alba-Simionesco, **K. Niss**, T. Hecksher *J. Chem Phys*, **143**, 134501 (2015).
5. Crystallization Behavior and Relaxation Dynamics of Supercooled S-Ketoprofen and the Racemic Mixture along an Isochrone
K. Adrjanowicz, K. Kaminski, M. Paluch, and **K. Niss** *Cryst. Growth and Design*, **15**, 1357 (2015).
6. Isomorph theory prediction for the dielectric loss variation along an isochrone
W. Xiao , J. Tofteskov, T. V. Christensen, J. C. Dyre, and **K. Niss** *J. Non Chryst Solids J. Non-Cryst. Solid* **407** 190 (2015).
7. The dynamic bulk modulus of three glass-forming liquids
D. Gundermann, **K. Niss**, T. Christensen, J. C. Dyre and T. Hecksher *J. Chem. Phys.* **140** 244508 (2014).
8. Two measures of isochronal superposition L. A. Roed, D. Gundermann, J. C. Dyre, and **K. Niss** *J. of Chem. Phys. - communication* **139**, 101101 (2013).
9. 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 (2012).
10. 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 (2012).
11. 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. Schrøder, D. Fragiadakis, R. Casalini, C. M. Roland, J. C. Dyre and **K. Niss** *Nature Physics* **7**, 816–821 (2011).

12. 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).
13. 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).
14. Physical aging of molecular glasses studied by a device allowing for rapid thermal equilibration,
T. Hecksher, N.B. Olsen, **K. Niss** and J. Dyre, *J. Chem. Phys.* **133**, 174514 (2010).
15. Connection between slow and fast dynamics of molecular liquids around the glass transition,
K. Niss, C. Dalle-Ferrier, B. Frick, D. Russo, J. Dyre and C. Alba-Simionesco, *Phys. Rev. E* **82**, 021508 (2010).
16. 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 (2010).
17. Prevalence of approximate square root t relaxation for the dielectric alpha process in viscous organic liquids,
A. Nielsen, T. E. Christensen, B. Jakobsen, **K. Niss**, N. B. Olsen and J. C. Dyre, *J. Chem. Phys.* **130**, 154508 (2009).
18. A brief critique of the Adam-Gibbs entropy model,
J. C. Dyre, T. Hecksher, **K. Niss**, *J. Non-Cryst. Solids* **355**, 624–627 (2009).
19. 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 (2008).
20. Glass-forming liquids: one or more “order” parameters,
N. Bailey, T. E. Christensen, B. Jakobsen, **K. Niss**, N. B. Olsen, U. R. Pedersen, T. Schrøder and J. C. Dyre, *J. Phys-Condens. Mat.* **20**, 244113 (2008).
21. 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 (2007).
22. 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 (2007).
23. 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).
24. Effects of density and temperature on correlations between fragility and glassy properties,
K. Niss and C. Alba-Simionesco, *Phys. Rev. B.* **74**, 024205 (2006).
25. 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).

26. 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 (2005).
27. 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 (2005).

Invited Talks at Conferences

1. Simple Aging,
American Physical Society March Meeting, San Antonio, Texas, 2.3-6.3.2015
2. Connection between volume and relaxation-rate during aging,
7th International discussion meeting on relaxations in complex systems, Barcelona, Spain, 21.7.-26.7.2013
3. Simple glass-forming liquids,
The Second NBIA Workshop-School on ESS Science, Copenhagen, 25.6-29.6.2012
4. Do simple liquids exist?
Danish Physical Society, Annual Meeting”, Nyborg, Denmark, 19.6.-20.6.2012
5. Density and temperature,
The 6th International discussion meeting on relaxations in complex systems; Rome, Italy, 30.08.-05.09.2009.
6. Is the viscous slowing down controlled by the elastic constants?
International workshop on glass and entropy; Trencin, Slovakia. 25.06 - 27.06.2008.

Contributed Talks at Conferences

1. Simple Aging,
Viscous Liquids and the Glass Transition (XIII) Holbæk, Denmark, 28.05.-30.05.2015
2. First measurements of three independent thermoviscoelastic linear-response functions in a glass-forming liquid.
The 16th International Conference on Internal Friction and Mechanical Spectroscopy Lausanne, Switzerland, 3.6.-8.6.2011
3. An experimentalists view on strongly correlating liquids,
Viscous Liquids and the Glass Transition (VIII) Holbæk, Denmark, 28.05.-30.05.2010
4. An experimentalists view on strongly correlating liquids,
XII International Workshop on Complex Systems, Andalo, Italy, 15.03.-18.03.2010
5. Experimental Methods of the “Glass and Time” Group,
Danish Glass Symposium, Aalborg University, Denmark, 19.02.2010
6. The ideal aging experiment,
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?,
Fragility of viscous liquids: Cause(s) and consequences; Copenhagen, Denmark. 08.10 - 10.10.2008.
8. Shear relaxation in viscous molecular liquids,
Annual meeting of the Danish Physical Society; Nyborg, Denmark, 17.06 - 18.06.2008.
9. Merging of the alpha and beta relaxations,
XI Workshop on complex systems; Andalo, Italy, 17.03 - 20.03.2008.
10. Pressure dependence of the boson peak in glasses,
Annual meeting of the Danish Physical Society; Nyborg, Denmark, 01.06.-02.06.2006.
11. Density versus temperature effects on correlations between fragility and glassy properties,
Viscous liquids and the glass transition V; Holbæk, Denmark, 26.05.-28.05.2006.
12. Molecular weight and glass transition in PIB,
First International Workshop on neutron brillouin scattering; Perugia, Italy 12.06.-14.06.2005.
13. Mean square displacement and fragility,
Viscous liquids and the glass transition IV; Holbæk, Denmark 03.06.-05.06.2005.
14. Structure and boson peak in polymers at high pressure,
Journées de la diffusion neutronique JDN12; Praz-sur-Arly, France, 23.05.-26.05.2004.
15. Dielectric and shear mechanical relaxation in viscous Liquids: Are they Connected?,
Viscous liquids and the glass transition IIV; Holbæk, Denmark 09.05.-11.05.2003.

Poster Contributions at Conferences

1. First measurements of three independent thermoviscoelastic linear-response functions in a glass-forming liquid,
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,
International Workshop on Dynamics in Viscous Liquids, Rome, Italy, 30.03.-2.04.2011
3. Boson peak and fragilities,
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,
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?,
Broadband dielectric spectroscopy and its applications; Delft, Holland, 23.08.-26.08.2004.

Popular publications and press [In Danish]

1. RomerRiget om nørder. Participation in radioshow on Radio24-7 hosted by Knud Romer (2015)
www.radio24syv.dk/programmer/romerriget/12469953/romerriget-uge-47-2015/
2. Et tidsmikroskop
Aktuel Naturvidenskab (2015) Popular article about neutron scattering and glass Science
Aktuel_Naturvidenskab/nr-1/AN1-2015tidsmikroskop.pdf
3. Blog about every day physics
Published online by Videnskab.dk 2012 –
videnskab.dk/profil/kristine-niss
4. Findes Simple Væske; Talk at Folkeuniversitet, Empdrup (30.10.2014) and Århus (13.11.2014)
5. Hvornår er en ko rund; Talk at RUC official annual meeting (20.11.2013)
<http://www.youtube.com/watch?v=Lf47E5ZSLDc>
6. Interview contribution in “Slip din viden løs” a book about popular science communication
Published by Videnskab.dk 2013 videnskab.dk/slipdinvidenlos.
7. Portrait in the annual report of The Danish Council for Independent Research (DFF) 2012
fivu.dk/publikationer/2013/filer-2013/dff-arsberetning-dk2012-web_final.pdf
8. Article about “Glass and Time” (also features Prof. J.Dyre) published in first issue of Roskilde University biannual magazine about research, Rubrik (2012) www.e-pages.dk/roskildeuniversitet/119/.
9. Movie showing work in the lab, published online by Videnskab.dk (2011)
videnskab.dk/miljo-naturvidenskab/se-et-forsog-med-vaesker-i-laboratoriet
10. Interview about recent scientific results, (also features Prof. J.Dyre), published online by Videnskab.dk and national News Paper JP (2011)
videnskab.dk/miljo-naturvidenskab/forskerne-er-blevet-klogere-pa-vaesker
11. Movie, part of a series of portrait of scientists, published online by Videnskab.dk (2010)
videnskab.dk/miljo-naturvidenskab/eksperimental-fysik-undersoger-ny-fasetilstand