

Thomas M. Truskett

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Current position

Les and Sherri Stuewer Endowed Professor and Bill L. Stanley Leadership Chair,
McKetta Department of Chemical Engineering, and Professor, Department of
Physics, University of Texas at Austin

Appointments held

2017-
2013- Professor, Department of Physics, University of Texas at Austin
Department Chair, McKetta Department of Chemical Engineering, University of Texas
at Austin
2011-
2007-2011 Professor, McKetta Department of Chemical Engineering, University of Texas at Austin
Associate Professor, McKetta Department of Chemical Engineering, University of Texas
at Austin
2002-2007 Assistant Professor, McKetta Department of Chemical Engineering, University of Texas
at Austin
2001-2002 Postdoctoral Fellow, Biophysics Group, University of California, San Francisco
1996-2001 Graduate Research Fellow, Department of Chemical and Biological Engineering,
Princeton University

Education

2001 PhD in Chemical Engineering, Princeton University
1998 MA in Chemical Engineering, Princeton University
1996 BS in Chemical Engineering, University of Texas at Austin

Honors & awards

Awards for research or professional service

2017 [Outstanding Referee](#), American Physical Society
2016 [Computational Molecular Science and Engineering Forum \(CoMSEF\) Impact Award](#),
American Institute of Chemical Engineers
2015 [Fellow](#), American Physical Society
2015 [Fellow](#), American Institute for Medical and Biological Engineering
2014 [O'Donnell Award in Engineering](#), The Academy of Medicine, Engineering, and
Science of Texas (TAMEST)
2007 [Allan P. Colburn Award](#), American Institute of Chemical Engineers
2006 [Sloan Research Fellowship in Chemistry](#), Alfred P. Sloan Foundation
2005 [NSF Faculty Early Career Development \(CAREER\) Award](#), National Science

- Foundation
 2004 [Packard Fellowship for Science and Engineering](#), David and Lucile Packard
 Foundation
 2001 [NIH National Research Service Award](#), National Institutes of Health

Named lectureships

- 2017 William E. Schiesser Lecture in Scientific Computing, Lehigh University
 2009 [Dudley A. Saville Lectureship](#), Department of Chemical and Biological Engineering,
 Princeton University
 2008 [Ernest W. Thiele Award Lectureship](#), Department of Chemical and Biomolecular
 Engineering, University of Notre Dame
 2007 [Hendrick C. Van Ness Award Lectureship](#), Department of Chemical and Biological
 Engineering, Rensselaer Polytechnic Institute

Teaching awards

- 2005 [The Cockrell School of Engineering Award for Outstanding Engineering
 Teaching by an Assistant Professor](#), University of Texas at Austin
 2004 Teaching Excellence Award, Student Engineering Council, University of Texas at Austin

Publications

Articles in peer-reviewed journals

citation data from my public profile on [Google Scholar](#)

- 2017 E. Moaseri, J. A. Bollinger, B. Changalvaie, J. Schroer, K. P. Johnston, and **Thomas M. Truskett**, Reversible self-assembly of gold nanoparticle clusters via pH-tunable interactions between glutathione and citrate. Submitted.
- 2017 J. R. Laber, B. J. Dear, J. D. Gollihar, M. L. Martins, D. E. Jackson, A. D. Ellington, **T. M. Truskett**, K. P. Johnston and J. A. Maynard, Charge shielding prevents aggregation of supercharged GFP variants at high concentration. Submitted.
- 2017 W. P. Krekelberg, D. W. Siderius, V. K. Shen, **T. M. Truskett**, and J. R. Errington, Connection between thermodynamics and dynamics of simple fluids in pores: Impact of fluid-fluid interaction range and fluid-solid interaction strength. Submitted
- 2017 R. B. Jadrich, B. A. Lindquist, and **T. M. Truskett**, Probabilistic inverse design for self-assembling materials. [Journal of Chemical Physics](#) **146**, 184103 (May) [Cover][AIP press release]
- 2017 W. D. Piñeros and **T. M. Truskett**, Designing pairwise interactions that stabilize open crystals: Truncated square and truncated hexagonal lattices. [Journal of Chemical Physics](#) **146**, 144501 (April)
- 2017 E. Moaseri, R. J. Stover, B. Changalvaie, A. Cepeda, **T. M. Truskett**, K. V. Sokolov, and K. P. Johnston, Control of primary particle spacing in gold nanoparticle clusters for both high NIR extinction and full reversibility. [Langmuir](#) **33**, 3413–3426 (March)
- 2017 B. A. Lindquist, S. Dutta, R. B. Jadrich, D. J. Milliron, and **T. M. Truskett**, Interactions and design rules for assembly of porous colloidal mesophases. [Soft Matter](#) **13**, 1335 - 1343 (February) [Cover]
- 2017 B. J. Dear, J. J. Hung, **T. M. Truskett**, K. P. Johnston, Contrasting the influence of cationic amino acids on the viscosity and stability of a highly concentrated

- monoclonal antibody. *Pharmaceutical Research* **34**, 193-207 (January)
- 2016 Y. Yu, A. Guillaussier, V. R. Voggu, W. Pineros, **T. M. Truskett**, D. M. Smilgies, and B. A. Korgel, Cooling dodecanethiol-capped 2 nm diameter gold nanocrystal superlattices below room temperature induces a reversible order-disorder structure transition. *Journal of Physical Chemistry C* **120** 27682 - 27687 (November)
- 2016 Y. Yu, X. Lu, A. Guillaussier, V. R. Voggu, W. Pineros, M. de la Mata, J. Arbiol, D. M. Smilgies, **T.M. Truskett**, and B. A. Korgel, Orientationally ordered silicon nanocrystal cuboctahedra in superlattices. *Nano Letters* **16**, 7814–7821 (November)
- 2016 J. A. Bollinger, J. Carmer, A. Jain, and **T. M. Truskett**, Impact of solvent granularity and layering on tracer hydrodynamics in confinement. *Soft Matter* **12** 9561-9574 (November)
- 2016 B. A. Lindquist, R. B. Jadrich, and **T. M. Truskett**, Inverse design for self assembly via on- the-fly optimization. *Journal of Chemical Physics* **145**, 111101 (September) [2016 Editors' Choice]
- 2016 R. B. Jadrich, B. A. Lindquist, J. A. Bollinger, and **T. M. Truskett**, Consequences of minimising pair correlations in fluids for dynamics, thermodynamics, and structure. *Molecular Physics* **114**, 2411-2423 (September)
- 2016 A. U. Borwankar, B. J. Dear, A. Twu, J. J. Hung, A. K. Dinin, B. K. Wilson, J. Yue, J. A. Maynard, **T.M. Truskett**, and K. P. Johnston, Viscosity reduction of a concentrated monoclonal antibody with arginine·HCl and arginine·glutamate. *Industrial and Engineering Chemistry and Research* **55** 11225–11234 (August)
- 2016 B. A. Lindquist, R. B. Jadrich, D. J. Milliron, and **T. M. Truskett**, On the formation of equilibrium gels via a macroscopic bond limitation. *Journal of Chemical Physics* **145**, 074906 (August)
- 2016 J. A. Bollinger and **T. M. Truskett**, Fluids with competing interactions: I. Decoding the structure factor to detect and characterize self-limited clustering. *Journal of Chemical Physics* **145**, 064902 (August)
- 2016 J. A. Bollinger and **T. M. Truskett**, Fluids with competing interactions: II. Validating a free energy model for equilibrium cluster size. *Journal of Chemical Physics* **145**, 064903 (August)
- 2016 W. D. Piñeros, M. Baldea, and **T. M. Truskett**, Designing convex repulsive pair potentials that favor assembly of kagome and snub square lattices. *Journal of Chemical Physics* **145**, 054901 (August)
- 2016 M. E. Ferraro, **T. M. Truskett**, and R. T. Bonnecaze, Graphoepitaxy for translational and orientational ordering of monolayers of rectangular nanoparticles. *Physical Review E* **93**, 032606 (March)
- 2016 J. J. Hung; A. U. Borwankar, B. J. Dear, **T. M. Truskett**, and K. P. Johnston, High concentration tangential flow ultrafiltration of stable monoclonal antibody solutions with low viscosities. *Journal of Membrane Science* **508** 113–126 (February)
- 2016 W. D. Piñeros, M. Baldea, and **T. M. Truskett**, Breadth versus depth: Interactions that stabilize particle assemblies to changes in density or temperature. *Journal of Chemical Physics* **144**, 084502 (February)
- 2016 B. A. Lindquist, R. B. Jadrich, and **T. M. Truskett**, Assembly of nothing: Equilibrium fluids with designed structured porosity. *Soft Matter* **12**, 2663 - 2667 (February)
- 2016 R. J. Stover, E. Moaseri, S. Gourisankar, M. Iqbal, N. K. Rahbar, B. Changalvaie, **T. M. Truskett**, and K. P. Johnston, Formation of small gold nanoparticle chains with high NIR extinction through bridging with calcium ions. *Langmuir* **32**, 1127–1138 (January)
- 2016 A. J. Worthen, V. Tran, K. A. Cornell, **T. M. Truskett**, K. P. Johnston, Steric stabilization of nanoparticles with grafted low molecular weight ligands in highly concentrated brines including divalent ions. *Soft Matter* **12**, 2025-2039 (January)
- 2015 A. U. Borwankar, B. W. Willsey, A. Twu, J. J. Hung, R. J. Stover, T. W. Wang, M. D.

- Feldman, T.E. Milner, **T. M. Truskett**, and K. P. Johnston, Gold nanoparticles with high densities of small protuberances on nanocluster cores with strong NIR extinction. *RSC Advances* **5**, 104674-104687 (December)
- 2015 A. Singh, B. A. Lindquist, G. K. Ong, R. B. Jadrich, A. Singh, H. Ha, C. J. Ellison, **T. M. Truskett**, and D. J. Milliron, Linking semiconductor nanocrystals into gel networks through all- inorganic bridges. *Angewandte Chemie International Edition* **54**, 14840–14844 (December)
- 2015 R. B. Jadrich, J. A. Bollinger, B. A. Lindquist, and **T. M. Truskett**, Equilibrium cluster fluids: Pair interactions via inverse design *Soft Matter* **11**, 9342 - 9354 (September)
- 2015 J. A. Bollinger, A. Jain, and **T. M. Truskett**, How local and average particle diffusivities of inhomogeneous fluids depend on microscopic dynamics. *Journal of Physical Chemistry B* **119**, 9103–9113 (July)
- 2015 J. A. Bollinger, A. Jain, J. Carmer, and T. M. Truskett, Local structure-mobility relationships of confined fluids reverse upon supercooling. *Journal of Chemical Physics* **142**, 161102 (April)
- 2015 K. B. Hollingshead and **T. M. Truskett**, Predicting the structure of fluids with piecewise constant interactions: Comparing the accuracy of five efficient integral equation theories. *Physical Review E* **91**, 043307 (April)
- 2015 R. B. Jadrich, J. A. Bollinger, K. P. Johnston, and **T. M. Truskett**, Origin and detection of microstructural clustering in fluids with spatial-range competitive interactions. *Physical Review E* **91**, 042312 (April)
- 2015 J. Carmer, A Jain, J. A. Bollinger, F. van Swol, T. M. Truskett, Tuning structure and mobility of solvation shells surrounding tracer additives. *Journal of Chemical Physics* **142**, 124501 (March)
- 2015 T. R. Popp III, K. B. Hollingshead, and **T. M. Truskett**, Web applet for predicting structure and thermodynamics of complex fluids. *American Journal of Physics* **83**, 219 (February)
- 2015 Y. Yu, A. Jain, A. Guillaussier, V. Reddy, **T. M. Truskett**, D. Smilgies and B. A. Korgel, Nanocrystal superlattices that exhibit improved order on heating: An example of inverse melting? *Faraday Discussions* **181**, 181-192 (January)
- 2015 G. Yu, J. Dong, L. M. Foster, A. E. Metaxas, **T. M. Truskett** and K. P. Johnston, Breakup of oil jets into droplets in seawater with environmentally benign nanoparticle and surfactant dispersants. *Industrial & Engineering Chemistry Research* **54**, 4243–4251 (November 2014)
- 2014 A. Jain, J. R. Errington, and **T. M. Truskett**, Dimensionality and design of isotropic interactions that stabilize honeycomb, square, simple cubic, and diamond lattices. *Physical Review X* **4**, 031049 (September) Please also see [erratum](#)
- 2014 S. Kalyoncu, J. Hyun, J. C. Pai, J. L. Johnson, K. Etminger, A. Jain, D. Heaner Jr., I. A. Morales, **T.M. Truskett**, J. A. Maynard, and R. L. Lieberman, Effects of protein engineering and rational mutagenesis on crystal lattice of single chain antibody fragments: Implications for membrane protein crystallization chaperones. *Proteins: Structure, Function, and Bioinformatics* **82**, 1884–1895 (September)
- 2014 L. M. Foster, A. J. Worthen, E. Foster, J. Dong, C. Roach, A. Metaxas, C. Hardy, E. Larsen, J. A. Bollinger, **T. M. Truskett**, C. W. Bielawski, and K. P. Johnston, High interfacial activity of polymers “grafted through” functionalized iron oxide nanoparticle clusters. *Langmuir* **30**, 10188–10196 (August)
- 2014 M. E. Ferraro, R. T. Bonnecaze, and **T. M. Truskett**, Graphoepitaxy for pattern multiplication of nanoparticle monolayers. *Physical Review Letters* **113**, 085503 (August)
- 2014 A. Jain, J. A. Bollinger, and **T. M. Truskett**, Perspective: Inverse methods for material design. *AIChE Journal* **60** 2732-2740 (August) (highlighted in [Chemical Engineering](#)

Progress)

- 2014 J. Carmer, Frank B. van Swol, and **T. M. Truskett**, Note: Position-dependent pair diffusivity profiles from steady-state solutions of color reaction-counterdiffusion problems. *Journal of Chemical Physics* **141**, 046101 (July)
- 2014 J. A. Bollinger, A. Jain, and **T. M. Truskett**, Structure, thermodynamics, and position-dependent diffusivity in fluids with sinusoidal density variations. *Langmuir* **30**, 8247–8252 (July)
- 2014 J. Dong, A. J. Worthen, L. M. Foster, Y. Chen, K. A. Cornell, S. L. Bryant, **T. M. Truskett**, C. W. Bielawski, and K. P. Johnston, Modified montmorillonite clay microparticles for stable oil-in-seawater emulsions. *ACS Applied Materials and Interfaces* **6**, 11502–11513 (June)
- 2014 A. K. Murthy, R. J. Stover, G. D. Nie, S. Gourisankar, **T. M. Truskett**, K. V. Sokolov, and K. P. Johnston, Quenched assembly of NIR active gold nanoclusters capped with strongly bound ligands by tuning particle charge via pH and salinity. *Journal of Physical Chemistry C* **118**, 14291–14298 (June)
- 2014 A. J. Worthen, L. M. Foster, J. A. Bollinger, J. Dong, A. H. Peterman, L. E. Pastora, S. L. Bryant, **T. M. Truskett**, C. W. Bielawski, and K. P. Johnston, Synergistic formation and stabilization of oil-in-water emulsions by a weakly-interacting mixture of zwitterionic surfactant and silica nanoparticles. *Langmuir* **30**, pp 984–994 (January)
- 2013 W. P. Krekelberg, V. K. Shen, D. W. Siderius, **T. M. Truskett**, and J. R. Errington, Connection between thermodynamics and dynamics of simple fluids in highly attractive pores. *Langmuir* **29**, 14527–14535 (December)
- 2013 T. S. Ingebrigtsen, J. R. Errington, **T. M. Truskett**, and J. C. Dyre, Predicting the relaxation time of a nanoconfined supercooled liquid. *Physical Review Letters* **111**, 235901 (December)
- 2013 K. B. Hollingshead, A. Jain, and **T. M. Truskett**, Fine discretization of pair interactions and an approximate analytical strategy for predicting equilibrium behavior of complex fluids. *Journal of Chemical Physics* **139**, 161102 (October)
- 2013 A. Jain, J. R. Errington, and **T. M. Truskett**, Phase behavior of materials with isotropic interactions designed by inverse strategies to favor diamond and simple cubic lattice ground states. *Journal of Chemical Physics* **139** 141102 (October)
- 2013 A. K. Murthy, R. J. Stover, W. G. Hardin, R. Schramm, G. D. Nie, S. Gourisankar, **T. M. Truskett**, K. V. Sokolov, and K. P. Johnston, Charged gold nanoparticles with essentially zero serum protein adsorption in undiluted fetal bovine serum. *Journal of the American Chemical Society* **135**, 7799–7802 (April)
- 2013 A. Jain, J. R. Errington, and **T. M. Truskett**, Inverse design of simple pairwise interactions with low coordinated 3D lattice ground states. *Soft Matter* **9**, 3866 - 3870 (March)
- 2013 A. K. Murthy, R. J. Stover, A. U. Borwankar, G. D. Nie, S. Gourisankar, **T. M. Truskett**, K. V. Sokolov, and K. P. Johnston, Equilibrium gold nanoclusters quenched with biodegradable polymers. *ACS Nano* **7**, 239–251 (January)
- 2013 A. U. Borwankar, A. K. Dinin, J. R. Laber, A. Twu, B. K. Wilson, J. A. Maynard, **T. M. Truskett**, and K. P. Johnston, Tunable equilibrium nanocluster dispersions at high protein concentrations. *Soft Matter* **9** 1766-1771 (January)
- 2013 J. Mittal, T. H. Yoo, G. Georgiou, and **T. M. Truskett**, Structural ensemble of an intrinsically disordered polypeptide. *Journal of Physical Chemistry B* **117**, 118–124 (January)
- 2012 M. A. Miller, T. A. Khan, K. J. Kaczorowski, B. K. Wilson, A. K. Dinin, A. U. Borwankar, M. A. Rodrigues, **T. M. Truskett**, K. P. Johnston, and J. A. Maynard, Antibody nanoparticle dispersions formed with mixtures of crowding molecules retain activity and in vivo bioavailability, *Journal of Pharmaceutical Sciences* **101**, 3763-3778 (October)
- 2012 J. Carmer, G. Goel, M. J. Pond, J. R. Errington, and **T. M. Truskett**, Enhancing tracer

- diffusivity by tuning interparticle interactions and coordination shell structure. [Soft Matter](#) **8**, 4083-4089 (March)
- 2012 K. P. Johnston, J. A. Maynard, **T. M. Truskett**, A. U. Borwankar, M. A. Miller, B. K. Wilson, A. K. Dinin, T. A. Khan, and K. J. Kaczorowski, Concentrated dispersions of equilibrium protein nanoclusters that reversibly dissociate into active monomers. [ACS Nano](#) **6**, 1357-1369 (January) [highlighted in [Nature Materials](#), [Nanomedicine](#), and [Chemical and Engineering News](#)]
- 2011 W. P. Krekelberg, V. K. Shen, J. R. Errington, and **T. M. Truskett**, Impact of surface roughness on diffusion of confined fluids. [Journal of Chemical Physics](#) **135**, 154502 (October)
- 2011 M. J. Pond, J. R. Errington, and **T. M. Truskett**, Mapping between long-time molecular and Brownian dynamics. [Soft Matter](#) **7**, 9859-9862 (October)
- 2011 M. J. Pond, J. R. Errington, and **T. M. Truskett**, Implications of the effective one-component analysis of pair correlations in colloidal fluids with polydispersity. [Journal of Chemical Physics](#) **135**, 124513 (September)
- 2011 M. J. Pond, J. R. Errington, and **T. M. Truskett**, Generalizing Rosenfeld's excess-entropy scaling to predict long-time diffusivity in dense fluids of Brownian particles: From hard to ultrasoft interactions. [Journal of Chemical Physics](#) **134**, 081101 (February)
- 2011 H. S. Ashbaugh and **T. M. Truskett**, Putting the squeeze on cavities in liquids: Quantifying pressure effects on solvation using simulations and revised scaled-particle theory. [Journal of Chemical Physics](#) **134**, 014507 (January) [highlighted in [Virtual Journal of Biological Physics Research](#)]
- 2010 R. Chopra, **T. M. Truskett**, and J. R. Errington, On the use of excess entropy scaling to describe single-molecule and collective dynamic properties of hydrocarbon isomer fluids. [Journal of Physical Chemistry B](#) **114**, 16487 – 16493 (December)
- 2010 R. Chopra, **T. M. Truskett**, and J. R. Errington, Excess entropy scaling of dynamics for a confined fluid of dumbbell-shaped particles. [Physical Review E](#) **82**, 041201 (October)
- 2010 R. Chopra, **T. M. Truskett**, and J. R. Errington, Excess entropy scaling of dynamic quantities for fluids of dumbbell-shaped particles. [Journal of Chemical Physics](#) **133**, 104506 (September)
- 2010 R. Chopra, **T. M. Truskett**, and J. R. Errington, On the use of excess entropy scaling to describe the dynamic properties of water. [Journal of Physical Chemistry B](#) **114**, 10558–10566 (August)
- 2010 W. P. Krekelberg, V. Ganesan, and **T. M. Truskett**, Structural signatures of mobility on intermediate time scales in a supercooled fluid. [Journal of Chemical Physics](#) **132**, 184503 (May)
- 2010 W. P. Krekelberg, **T. M. Truskett**, and V. Ganesan, Relationship between shear viscosity and structure of a model colloidal suspension. [Chemical Engineering Communications](#) **197**, 63-75 (January) [invited for special issue in honor of Howard Brenner's 80th birthday]
- 2009 W. P. Krekelberg, M. J. Pond, G. Goel, V. K. Shen, J. R. Errington, and **T. M. Truskett**, Generalized Rosenfeld scalings for tracer diffusivities in not-so-simple fluids: Mixtures and soft particles. [Physical Review E](#) **80**, 061205 (December)
- 2009 M. J. Pond, W. P. Krekelberg, V. K. Shen, J. R. Errington, and **T. M. Truskett**, Composition and concentration anomalies for structure and dynamics of Gaussian-core mixtures. [Journal of Chemical Physics](#) **131**, 161101 (October) [One of twenty most downloaded Journal of Chemical Physics articles in 10/2009]
- 2009 V. K. Shen, J. K. Cheung, J. R. Errington, and **T. M. Truskett**, Insights into crowding effects on protein stability from a coarse-grained model, [Journal of Biomechanical Engineering](#) **131**, 071002 (July) [invited for special issue on "Nano and multiscale

- frontiers in biological heat and mass transfer”]
- 2009 J. E. Yoo, W. P. Krekelberg, Y. Sun, J. D. Tarver, **T. M. Truskett**, and Y.-L. Loo, Polymer conductivity through particle connectivity. *Chemistry of Materials* **21**, 1948-1954 (May)
- 2009 G. Goel, W. P. Krekelberg, M. J. Pond, J. Mittal, V. K. Shen, J. R. Errington, and **T. M. Truskett**, Available states and available space: Static properties that predict self diffusivity of confined fluids, *Journal of Statistical Mechanics: Theory and Experiment* P04006 (April)
- 2009 W. P. Krekelberg, T. Kumar, J. Mittal, J. R. Errington, and **T. M. Truskett**, Anomalous structure and dynamics of the Gaussian-core fluid. *Physical Review E* **79**, 031203 (March) [highlighted in *Virtual Journal of Biological Physics Research*]
- 2009 W. P. Krekelberg, V. K. Shen, J. R. Errington, and **T. M. Truskett**, Response to Comment on ‘Residual multiparticle entropy does not generally change sign near freezing’ [J. Chem. Phys. 128, 161101 (2008)]. *Journal of Chemical Physics* **130**, 037102 (January)
- 2008 G. Goel, M. V. Athawale, S. Garde, and **T. M. Truskett**, Attractions, water structure, and thermodynamics of hydrophobic polymer collapse. *Journal of Physical Chemistry B* **112**, 13193–13196 (October)
- 2008 W. P. Krekelberg, V. Ganesan, and **T. M. Truskett**, Shear-rate-dependent structural order and viscosity of a fluid with short-range attractions. *Physical Review E* **78**, 010201(R) (July)
- 2008 W. P. Krekelberg, V. K. Shen, J. R. Errington, and **T. M. Truskett**, Residual multiparticle entropy does not generally change sign near freezing. *Journal of Chemical Physics* **128**, 161101 (April)
- 2008 W. P. Krekelberg, J. Mittal, V. Ganesan, and **T. M. Truskett**, Structural anomalies of fluids: Origins in second and higher coordination shells. *Physical Review E* **77**, 041201 (April)
- 2008 J. Mittal, **T. M. Truskett**, J. R. Errington, and G. Hummer, Layering and position-dependent diffusive dynamics of confined fluids. *Physical Review Letters* **100**, 145901 (April)
- 2008 G. Goel, W. P. Krekelberg, J. R. Errington, and **T. M. Truskett**, Tuning the density profiles and mobility of inhomogeneous fluids. *Physical Review Letters* **100**, 106001 (March)
- 2007 J. Mittal, V. K. Shen, J. R. Errington, and **T. M. Truskett**, Confinement, entropy, and single- particle dynamics of equilibrium hard-sphere mixtures. *Journal of Chemical Physics* **127**, 154513 (October)
- 2007 J. Mittal, J. R. Errington, and **T. M. Truskett**, Relationships between self-diffusivity, packing fraction, and excess entropy in simple bulk and confined fluids. *Journal of Physical Chemistry B* **111**, 10054 - 10063 (August) [Feature Article, Journal Cover]
- 2007 W. P. Krekelberg, J. Mittal, V. Ganesan, and **T. M. Truskett**, How short-range attractions impact the structural order, self-diffusivity, and viscosity of a fluid. *Journal of Chemical Physics* **127**, 044502 (July)
- 2007 S. M. McClure, E. T. Barlow, M. C. Akin, P. L. Tanaka, D. J. Safarik, **T. M. Truskett**, and C. B. Mullins, Effect of dilute nitric acid on crystallization and fracture of amorphous solid water films. *Journal of Physical Chemistry C* **111**, 10438 - 10447 (July)
- 2007 J. Mittal, J. R. Errington, and **T. M. Truskett**, Does confining the hard-sphere fluid between hard walls change its average properties? *Journal of Chemical Physics* **126**, 244708 (June)
- 2007 J. K. Cheung, V. K. Shen, J. R. Errington, and **T. M. Truskett**, Coarse-grained strategy for modeling protein stability in concentrated solutions III: Directional protein interactions. *Biophysical Journal* **92**, 4316–4324 (June) [Selected as a Hidden Jewel by F1000 biology]

- 2007 M. V. Athawale, G. Goel, T. Ghosh, **T. M. Truskett**, and S. Garde, Effects of lengthscales and attractions on the collapse of hydrophobic polymers in water. [Proceedings of the National Academy of Sciences USA **104**, 733-738 \(January\)](#) [highlighted in [Virtual Journal of Biological Physics Research](#)]
- 2006 J. R. Errington, **T. M. Truskett**, and J. Mittal, Excess-entropy-based anomalies for a water-like fluid. [Journal of Chemical Physics **125**, 244502 \(December\)](#)
- 2006 F. N. Braun, W. P. Krekelberg, and **T. M. Truskett**, Volatile diffusional character of cytoplasm. [Journal of Physical Chemistry B **110**, 25606-25607 \(December\)](#)
- 2006 J. K. Cheung, P. S. Raverkar, and **T. M. Truskett**, Analytical model for studying how environmental factors influence protein conformational stability in solution. [Journal of Chemical Physics **125**, 224903 \(December\)](#) [highlighted in [Virtual Journal of Biological Physics Research](#)]
- 2006 J. Mittal, J. R. Errington, and **T. M. Truskett**, Using available volume to predict fluid diffusivity in random media. [Physical Review E **74**, 040102 \(October\)](#)
- 2006 J. Mittal, J. R. Errington, and **T. M. Truskett**, Quantitative link between single-particle dynamics and static structure of supercooled liquids. [Journal of Physical Chemistry B **110**, 18147–18150 \(August\)](#)
- 2006 J. Mittal, J. R. Errington, and **T. M. Truskett**, Relationship between thermodynamics and dynamics of supercooled liquids. [Journal of Chemical Physics **125**, 076102 \(August\)](#). Please also see [erratum](#)
- 2006 S. M. McClure, E. T. Barlow, M. C. Akin, D. J. Safarik, **T. M. Truskett**, and C. B. Mullins, Transport in amorphous solid water films: Implications for self-diffusivity. [Journal of Physical Chemistry B **110**, 17987 – 17997 \(August\)](#)
- 2006 J. K. Cheung, P. Shah, and **T. M. Truskett**, Heteropolymer collapse theory for protein folding in the pressure-temperature plane. [Biophysical Journal **91**, 2427 – 2435 \(October\)](#)
- 2006 S. M. McClure, D. J. Safarik, **T. M. Truskett**, and C. B. Mullins, Evidence that amorphous water below 160 K is not a fragile liquid. [Journal of Physical Chemistry B **110**, 11033-11036 \(June\)](#)
- 2006 W. P. Krekelberg, V. Ganesan, and **T. M. Truskett**, Model for the free-volume distributions of equilibrium fluids. [Journal of Chemical Physics **124**, 214502 \(June\)](#)
- 2006 J. Mittal, J. R. Errington, and **T. M. Truskett**, Thermodynamics predicts how confinement modifies the dynamics of the equilibrium hard-sphere fluid. [Physical Review Letters **96**, 177804 \(May\)](#) [highlighted in [MRS Bulletin](#)]
- 2006 P. Shah and **T. M. Truskett**, Intrinsic vulnerabilities to mechanical failure in nanoscale films. [Mechanics of Materials **38**, 924-932 \(August\)](#)
- 2006 W. P. Krekelberg, V. Ganesan, and **T. M. Truskett**, Free volumes and the anomalous self-diffusivity of attractive colloids. [Journal of Physical Chemistry B **110**, 5166-5169 \(March\)](#)
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- 2003 **T. M. Truskett**, The subtleties of water in small spaces. *Proceedings of the National Academy of Sciences USA* **100**, 10139-10140 (September) [highlighted in the *Virtual Journal of Nanoscale Science & Technology*]
- 2003 **T. M. Truskett** and V. Ganesan, Ideal glass transitions in thin films: An energy landscape perspective. *Journal of Chemical Physics* **119**, 1897-1900 (July)
- 2003 H. S. Ashbaugh, **T. M. Truskett**, and P. G. Debenedetti, Response to comment on 'A simple molecular thermodynamic theory for hydrophobic hydration'. *Journal of Chemical Physics* **119**, 10450-10451 (November)
- 2003 **T. M. Truskett** and K. A. Dill, A simple analytical model of water. *Biophysical Chemistry* **105**, 449-459 (September)
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- 2001 F. H. Stillinger, P. G. Debenedetti, and **T. M. Truskett**, The Kauzmann paradox revisited. *Journal of Physical Chemistry B* **105**, 11809-11816 (November) [highlighted in *Science* by Phil Szuromi]
- 2001 F. H. Stillinger, S. Torquato, J. M. Eroles, and **T. M. Truskett**, Iso- $\rho^{(2)}$ processes in equilibrium statistical mechanics. *Journal of Physical Chemistry B* **105**, 6592-6597 (July)
- 2001 **T. M. Truskett**, P. G. Debenedetti, and S. Torquato, Thermodynamic implications of confinement for a waterlike fluid. *Journal of Chemical Physics* **114**, 2401-2418 (February) [highlighted in the *Virtual Journal of Nanoscale Science & Technology*]
- 2000 P. J. in't Veld, M. T. Stone, **T. M. Truskett**, and I. C. Sanchez, Liquid structure via cavity size distributions. *Journal of Physical Chemistry B* **104**, 12028-12034 (December)
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- 2000 A. R. Kansal, **T. M. Truskett**, and S. Torquato, Non-equilibrium hard-disk packings with controlled orientational order. *Journal of Chemical Physics* **113**, 4844-4851 (September)
- 2000 **T. M. Truskett**, S. Torquato, and P. G. Debenedetti, Towards a quantification of disorder in materials: Distinguishing equilibrium and glassy sphere packings. *Physical Review E* **62**, 993-1001 (July)
- 2000 D. K. Stillinger, F. H. Stillinger, S. Torquato, **T. M. Truskett**, and P. G. Debenedetti, Triangle distribution and equation of state for classical rigid disks. *Journal of Statistical Physics* **100**, 49-72 (July)
- 2000 S. Torquato, **T. M. Truskett**, and P. G. Debenedetti, Is random close packing of spheres well defined? *Physical Review Letters* **84**, 2064-2067 (March) [highlighted in *Nature News* by Philip Ball]
- 1999 P. G. Debenedetti, F. H. Stillinger, **T. M. Truskett**, and C. J. Roberts, The equation of state of an energy landscape. *Journal of Physical Chemistry B* **103**, 7390-7397 (September) [Feature Article]
- 1999 **T. M. Truskett**, P. G. Debenedetti, S. Sastry, and S. Torquato, A single-bond approach to orientation-dependent interactions and its implications for liquid water. *Journal of*

[Chemical Physics 111](#), 2647-2656 (August)

- 1999 I. C. Sanchez, **T. M. Truskett**, and P. J. in't Veld, Configurational properties and corresponding states in simple fluids and water. [Journal of Physical Chemistry B 103](#), 5106-5116 (June)
- 1999 P. G. Debenedetti and **T. M. Truskett**, The statistical geometry of voids in liquids. [Fluid Phase Equilibria 160](#), 549-556 (June)
- 1998 **T. M. Truskett**, S. Torquato, and P. G. Debenedetti, Density fluctuations in many-body systems. [Physical Review E 58](#), 7369-7380 (December)
- 1998 S. Sastry, **T. M. Truskett**, P. G. Debenedetti, S. Torquato, and F. H. Stillinger, Free volume in the hard sphere liquid. [Molecular Physics 95](#), 289-297 (October)
- 1998 **T. M. Truskett**, S. Torquato, S. Sastry, P. G. Debenedetti, and F. H. Stillinger, Structural precursor to freezing in the hard-disk and hard-sphere systems. [Physical Review E 58](#), 3083-3088 (September)

Invited review articles, interviews, and book chapters

- 2017 **T. M. Truskett** and J. J. McKetta, A Conversation with John McKetta. [Annual Review of Chemical and Biomolecular Engineering](#), DOI: 10.1146/annurev-chembioeng-060816-101315 (July)
- 2009 J. K. Cheung, V. K. Shen, J. R. Errington, and **T. M. Truskett**, Concentration and crowding effects on protein stability from a coarse-grained model. [Statistical Mechanics of Cellular Systems and Processes](#), M. H. Zaman, ed. Cambridge University Press, Cambridge, 1- 25 (January)
- 2007 J. Mittal, W. P. Krekelberg, J. R. Errington, and **T. M. Truskett**. Computing free volume, structural order, and entropy of liquids and glasses. [Reviews in Computational Chemistry 25](#), 125–158 (January)
- 2001 P. G. Debenedetti, F. H. Stillinger, **T. M. Truskett**, and C. P. Lewis, Theory of supercooled liquids and glasses: Statistical geometry and energy landscape perspectives. [Advances in Chemical Engineering 28](#), 22-72 (January)

Patents

- 2012 K. P. Johnston, J. Maynard, M. A. Miller, B. K. Wilson, **T. M. Truskett**, A. U. Borwankar, A. K. Dinin, Protein Nanoparticle Dispersions, US Patent application (publication no. 20120230913), September 13

Invited talks

total number: 120
departmental seminars: 62
meetings or workshops: 53
national labs: 4
companies: 1

Summary of departmental seminars

Arizona State University (Physics Colloquium, 2012; Materials Science, 2016)
Autonomous University of San Luis Potosi (Institute of Physics “Manuel Sandoval Vallarta”, 2015)

California Institute of Technology (Chemical Engineering, 2009)
 Case Western Reserve University (Chemical Engineering, 2008)
 Colorado State University (Physical Chemistry, 2013)
 Columbia University (Chemical Engineering, 2015) Cornell University (Chemical Engineering, 2007)
 Florida A & M University - Florida State University (Chemical Engineering, 2016)
 Georgia Institute of Technology (Chemical Engineering, 2001, 2017)
 Johns Hopkins University (Chemical Engineering, 2015)
 Lehigh University (Chemical Engineering, 2017)
 Massachusetts Institute of Technology (Chemical Engineering, 2001)
 Northeastern University (Chemical Engineering, 2014)
 Pennsylvania State University (Chemical Engineering, 2015)
 Princeton University (Chemical Engineering, 2009; 2000)
 Purdue University (Chemical Engineering, 2016)
 Rensselaer Polytechnic Institute (Chemical Engineering, 2007 (2))
 Rice University (Chemical Engineering, 2004)
 Texas Tech University (Chemical Engineering, 2005)
 Tulane University (Chemical Engineering, 2007)
 University at Buffalo, State University of New York (Chemical Engineering, 2008)
 University of California, Davis (Chemical Engineering and Materials Science, 2016)
 University of California, Riverside (Chemical Engineering, 2014)
 University of California, Santa Barbara (Chemical Engineering, 2008)
 University of Colorado (Chemical Engineering, 2001)
 University of Delaware (Chemical Engineering, 2016; 2007)
 University of Houston (Chemical Engineering, 2010)
 University of Illinois, Urbana-Champaign (Chemical Engineering, 2001; 2009; 2013)
 Universidade de Lisboa, Portugal (Instituto para a Investigacao Interdisciplinar 2014)
 University of Ljubljana, Slovenia (Chemistry and Chemical Technology, 2017)
 University of Michigan, Ann Arbor (Chemical Engineering, 2013)
 University of Minnesota (Mechanical Engineering, 2016; 2007; Chemical Engineering and Materials Science, 2014)
 University of New Mexico (Chemical and Nuclear Engineering, 2014)
 University of Notre Dame (Chemical Engineering, 2008; 2001)
 University of Pennsylvania (Chemical Engineering, 2001; 2014)
 University of South Carolina (Chemical Engineering, 2016)
 University of Texas at Austin (Mathematics - Mathematical Physics, 2011; Physics Colloquium, 2011; Physics - Center for Nonlinear Dynamics, 2011; 2008; 2003; Chemistry - Institute for Theoretical Chemistry, 2004; Chemical Engineering, 2001)
 University of Texas at San Antonio (Chemistry, 2007; Physics, 2013) University of Washington (Chemical Engineering, 2015)
 University of Wisconsin, Madison (Chemistry, 2007)
 Vanderbilt University (Chemical Engineering, 2016)
 Yale University (Physics, 2011; Mechanical Engineering and Material Science, 2006)

Service

Membership in professional societies

Senior member, American Institute of Chemical Engineers (AIChE)

Member and Fellow, American Physical Society (APS)
Member, American Chemical Society (ACS)

- 2017- *Member*, external advisory board for MICCoM (<http://miccom-center.org/>), a DOE funded Computational Materials Science (CMS) Center headquartered at Argonne National Laboratory
- 2017-2019 *Member*, Visiting Committee of Department of Chemical and Biomolecular Engineering, Case Western University
- 2015 *Member*, panel selected to interview graduate fellowship applicants for the Vietnam Education Foundation
- 2014 *Member*, Scientific Organizing Committee for the Soft Matter Group of the American Physical Society
- 2014- *Member*, Scientific Organizing Committee for the Emerging Technologies section of the National Science Foundation funded UT Austin | Portugal Collaboration
- 2010-2014 *Member*, Institute Awards Selection Committee for the AIChE
- 2012-2013 *Member*, Victor K. LaMer Award for Graduate Research in Colloid and Surface Chemistry Selection Committee for the American Chemical Society, Division of Colloid and Surface Chemistry
- 2011 *Chair*, Alpha Chi Sigma Award Selection Subcommittee for the AIChE
- 2011 *Member*, Lawrence B. Evans Chemical Engineering Practice Award Selection Subcommittee for the AIChE
- 2011 *Member*, Industry Research and Development Award Selection Subcommittee for the AIChE
- 2010 *Chair*, Allan P. Colburn Award Selection Subcommittee for the AIChE
- 2005-2010 *Member*, Program Committee, AIChE Area 1a: Thermodynamics and Transport Processes
- 2010 *Member*, Scientific Committee for the National Science Foundation Workshop on Molecular Models for Carbon-Neutral Industrialization, April 9-10, Palm Desert, California
- 2009-2010 *Member*, Organizing Committee for the 2010 National Academy of Engineering Indo-American Frontiers of Engineering Symposium, March 11-13, 2010, Agra, India
- 2010 *Member*, 2010 panel selected by the US National Academies to interview graduate fellowship applicants for the Vietnam Education Foundation

Biographical information

Thomas M. Truskett is the Les and Sherri Stuewer Endowed Professor, Department Chair, and Bill L. Stanley Leadership Chair in Chemical Engineering at University of Texas at Austin. He earned a bachelor of science in chemical engineering from University of Texas at Austin in 1996 and a doctoral degree in chemical engineering from Princeton University in 2001, where he studied statistical mechanics of the liquid state, the glass transition, and structuring of disordered media. He then pursued post-doctoral research at University of California, San Francisco, where he investigated water, hydrophobic interactions, and modeling of biomolecular systems. In 2002, he joined the faculty of University of Texas at Austin. Dr. Truskett's research group studies how interfaces and confinement impact the behavior of soft matter including molecular fluids, colloidal suspensions, protein solutions, and glassy solids. He is an Alfred P. Sloan Research Fellow, a David and Lucile Packard Foundation Fellow, recipient of the National Science Foundation's CAREER Award, recipient of

the Allan P. Colburn Award and the CoMSEF Impact Award from the American Institute of Chemical Engineers. He was elected Fellow of the American Physical Society (APS), and the American Institute for Medical and Biological Engineers (AIMBE). In 2014, Tom received the O'Donnell Award for Engineering from the Texas Academy of Medicine, Engineering, Science, and Technology.