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Department of Chemistry
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EDUCATION

- 1997.9 - 2002.6 Ph. D in Physical Chemistry
Department of Chemistry, Massachusetts Institute of Technology, USA
- 1994.3 – 1997.8 M.S. in Physical Chemistry
Department of Chemistry, Seoul National University, Korea
- 1990.3 – 1994.2 B.S. in Chemistry
Department of Chemistry, Seoul National University, Korea

PROFESSIONAL EXPERIENCES

- 2013.3 – 2016. 2. Vice Director, Center for Space-Time Molecular Dynamics, SNU
- 2013.3 - present Associate Professor, Department of Chemistry, SNU
- 2012.2 - 2013.1 Visiting Scholar, University of California, Berkeley
- 2006.9 - 2013. 2 Assistant Professor, Department of Chemistry, SNU
- 2005.10 - 2006.7 Postdoctoral Associate, Center for Nanofabrication and Self-Assembly, Northwestern University
- 2005.7 - 2005.10 Visiting Research Fellow, Chemical Sciences Division, LBNL, Berkeley
- 2003.3 Visiting Research Fellow, Theoretical Physics Department, University of Oxford
- 2002.7 - 2005.6 Miller Research Fellow, University of California, Berkeley
- 1997.9 - 2002.6 Research Assistant, Department of Chemistry, MIT
- 1997.3 - 1997.8 Research Collaboration, Department of Chemistry, Korea University
- 1994.3- 1997.8 Research Assistant, Department of Chemistry, SNU

AWARDS AND HONORS

- Excellence in Teaching Award, College of Natural Sciences, SNU, 2010.
- Miller Research Fellowship, University of California, Berkeley, 2002-2005.
- Korean Honor Scholarship, Korean Embassy in the U.S., 1999 - 2000.
- Ph. D Fellowship, Korea Foundation for Advanced Studies, Seoul, Korea, 1997-2002.
- Woosan Foundation Graduate Fellowship, 1996.
- Dean's Award List and *Suma Cum Laude*, Seoul National University, Seoul, Korea, 1994.
- Undergraduate Fellowship, Korea Foundation for Advanced Studies, Seoul, Korea, 1991-1994.
- SNU Honor Student Fellowship, 1991-1994

PUBLICATIONS

46. Md Ashraful Islam, Jung Han Kim, Tae-Jun Ko, Chanwoo Noh, Shraddha Nehate, Md Golam Kaium, Minjee Ko, David Fox, Lei Zhai, Chang-Hee Cho, Kalpathy B. Sundaram, Tae-Sung Bae, YounJoon Jung, Hee-Suk Chung, Yeonwoong Jung, "Three dimensionally-ordered 2D MoS₂ vertical layers integrated on flexible substrates with stretch-tunable functionality and improved sensing capability" *Nanoscale* 10(37), pp.17525-17533 (2018)
45. Sungsik Jo, Sang-Won Park, Chanwoo Noh, YounJoon Jung, "Computer simulation study of differential capacitance and charging mechanism in graphene supercapacitors: Effects of cyano-group in ionic liquids, *Electrochimica Acta* 284, pp.577-586 (2018)
44. Nitin Choudhary, Hee-Suk Chung, Jung Han Kim, Chanwoo Noh, Md Ashraful Islam, Kyu Hwan Oh, Kevin Coffey, YounJoon Jung, Yeonwoong Jung, "Strain- Driven and Layer- Number- Dependent Crossover of Growth Mode in van der Waals Heterostructures: 2D/2D Layer- By- Layer Horizontal Epitaxy to 2D/3D Vertical Reorientation" *Advanced Materials Interfaces* 5(14), pp.1800382-1800382 (2018)
43. Inrok oh, Saehyun Choi, YounJoon Jung, Jun Soo Kim, "Entropic effect of macromolecular crowding enhances binding between nucleosome clutches in heterochromatin, but not in euchromatin" *Scientific Reports* 8, pp.5469-5469 (2018)
42. Y. Kim, C. Noh, Y. Jung, H. Kang, "The Nature of Hydrated Protons on Platinum Surfaces" *Chemistry-A European Journal* 23(69), pp.17566-17575 (2017)
41. S. Jo, S.-W. Park, Y. Shim, and YounJoon Jung, "Effects of Alkyl Chain Length on Interfacial Structure and Differential Capacitance in Graphene Supercapacitors: A Molecular Dynamics Simulation Study", *Electrochimica Acta*, 247, pp.634-645 (2017)
40. S. Kim, D. G. Thorpe, C. Noh, J. P. Garrahan, D. Chandler, and Y. Jung, "Study of the upper-critical dimension of the East model through the breakdown of the Stokes-Einstein relation", *J. Chem. Phys.* 147(8), pp.084504-084504 (2017).
39. D. Kim, S.-W. Park, Y. Shim, H. J. Kim, and Y. Jung, "Excitation-energy dependence of solvation dynamics in room-temperature ionic liquids", *J. Chem. Phys.* 145(4), pp.044502-044502 (2016).
38. S.-W. Park, A. D. DeYoung, N. R. Dhumal, Y. Shim, H. J. Kim and Y. Jung, "Computer Simulation Study of Graphene Oxide Supercapacitors: Charge Screening Mechanism, *J. Phys. Chem. Letters* 7(7), pp.1180-1186 (2016)
37. S. Kim, S.-W. Park, and Y. Jung, "Heterogeneous dynamics and its length scale in simple ionic liquid models: a computational study," *Phys. Chem. Chem. Phys.* 18(9), pp. 6486-6497 (2016)
36. S.-W. Park and Y. Jung, "Time Scale of Dynamic Heterogeneity in Model Ionic Liquids and Its Relation to Static Length Scale and Charge Distribution," *Phys. Chem. Chem. Phys.*, pp.29281-29292 (2015).
35. I. Oh, S. Choi, Y. Jung, and J. S. Kim, "Phase separation of a Lennard-Jones fluid interacting with a long, condensed polymer chain: implications to the nuclear body formation near chromosomes," *Soft Matter*, 11(32), pp.6450-6459 (2015).
34. E. Lee and Y. Jung, "Segregated structures of ring polymer melts near the surface: a molecular dynamics simulation study," *Soft Matter*, pp.6018-6028 (2015).
33. S.-W. Choi, S. Kim, and Y. Jung, "Dynamic Heterogeneity in Crossover Spin Facilitated Model of Supercooled Liquid and Fractional Stokes-Einstein Relation," *J. Chem. Phys.*, 142 (24), 244506 (2015).
32. E. Lee, S. Kim, and Y. Jung, "Slowing Down of Ring Polymer Diffusion Caused by Inter-Ring Threading," *Macromol. Rapid Comm.*, 36 (11), 1115 (2015).
31. Y. Jung, "Stochastic Lineshape Theory for Multistate, Non-Markovian Frequency Fluctuations," *Bull. Kor. Chem. Soc.*, 36(3), 906 (2015).
30. I. Oh, S. Choi, Y. Jung, and J. S. Kim, "Unusual Size-dependence of Effective Interactions Between Collapsed Polymers in Crowded Environments," *Soft Matter*, 10(45), pp.9098-9104 (2014).

29. D. Kim, D. Jeong, and Y. Jung, "Dynamic Propensity as an Indicator of Heterogeneity in Room-temperature Ionic Liquids," *Phys. Chem. Chem. Phys.*, 16(36), pp.19712-19719 (2014).
28. A. D. DeYoung, S. Park, N. R. Dhumal, Y. Shim, Y. Jung, and H. J. Kim, "Graphene Oxide Supercapacitors: A Computer Simulation Study," *J. Phys. Chem. C*, 118(32), pp.18472-18480 (2014).
27. Y. Shim, H. Kim, and Y. Jung, "Solvation of a Small Metal-Binding Peptide in Room-Temperature Ionic Liquids," *Bull. Korean Chem. Soc.* 33(11), pp.3601-3606 (2012).
26. Y. Shim, H. J. Kim, and Y. Jung, "Correction to Graphene-Based Supercapacitors: A Computer Simulation Study," *J. Phys. Chem. C*, 116(34), pp.18574-18575 (2012).
25. I. Oh, E. Lee, and Y. Jung, "A Minimalist Model of Single Molecule Spectroscopy in a Dynamic Environment Studied by Metadynamics," *Bull. Korean Chem. Soc.* 33(3), pp.980-986 (2012).
24. Y. Shim, H. J. Kim, and Y. Jung, "Graphene-based supercapacitors in the parallel plate electrode configuration: Ionic liquids versus organic electrolytes," *Faraday Discuss.*, 154(1), pp.249-263 (2012).
23. Y. Shim, Y. Jung, and H. Kim, "Graphene-Based Supercapacitors: A Computer Simulation Study," *J. Phys. Chem. C*, 115(47), pp.23574-23583 (2011).
22. E. Lee and Y. Jung, "Calculations of Free Energy Surfaces for Small Proteins and a Protein-RNA Complex Using a Lattice Model Approach," *Bull. Korean Chem. Soc.* 32(8), pp.3051-3056 (2011).
21. Y. Shim, Y. Jung and H. J. Kim, "Carbon nanotubes in benzene: internal and external solvation," *Phys. Chem. Chem. Phys.*, 13(9), pp.3969-3978 (2011).
20. D. Jeong, D. Kim, M. Y. Choi, H. J. Kim, and Y. Jung, "Dynamic Heterogeneity in Room-Temperature Ionic Liquids", *Ionic Liquids: Theory, Properties, New Approaches*, Chap. 7, pp. 167-183, Intech (2011).
19. D. Jeong, M. Y. Choi, Hyung J. Kim and Y. Jung, "Fragility, Stokes-Einstein violation, and correlated local excitations in a coarse-grained model of an ionic liquid," *Phys. Chem. Chem. Phys.*, 12(8), pp.2001-2010 (2010).
18. S. Kim, Y. Jung, G. H. Gu, J. S. Suh, S. M. Park, and S. Ryu, "Discrete Dipole Approximation Calculations of Optical Properties of Silver Nanorod Arrays in Porous Anodic Alumina," *J. Phys. Chem. C* 113(37), pp.16321-16328 (2009).
17. D. Jeong, M. Y. Choi, Y. Jung, and H. J. Kim, "1/f spectrum and memory function analysis of solvation dynamics in a room-temperature ionic liquid," *J. Chem. Phys.* 128(17), 174504 (2008).
16. Y. Jung, J. P. Garrahan, and D. Chandler, "Dynamical exchanges in facilitated models of supercooled Liquids," *J. Chem. Phys.* 123(8), 084509 (2005).
15. Y. Jung, J. P. Garrahan, and D. Chandler, "Excitation lines and the breakdown of Stokes-Einstein relations in super-cooled liquids," *Phys. Rev. E* 69(6), 061205 (2004).
14. E. Barkai, Y. Jung, and R. J. Silbey, "Theory of single molecule spectroscopy: Beyond the ensemble average," *Annu. Rev. Phys. Chem.*, 55, pp. 457-507 (2004).
13. Y. Jung, E. Barkai, and R. J. Silbey, "A stochastic theory of single molecule spectroscopy," *Adv. Chem. Phys.*, 123, pp.199-266 (2002).
12. Y. Jung, E. Barkai, and R. J. Silbey, "Current status of single molecule spectroscopy: Theoretical aspects," *J. Chem. Phys.*, 117(24), pp. 10980-10995 (2002).
11. Y. Jung, E. Barkai, and R. J. Silbey, "Lineshape theory and photon counting statistics for blinking quantum dots: A Lévy walk process," *Chem. Phys.*, 284(1-2), pp. 181-194 (2002).
10. Y. Jung and J. Cao, "Spectral analysis of electron transfer kinetics. II," *J. Chem. Phys.*, 117(8), pp. 3822-3836 (2002).
9. S. Jang, Y. Jung, and R. J. Silbey, "Nonequilibrium generalization of Förster-Dexter theory for excitation energy transfer," *Chem. Phys.*, 275(1-3), pp. 319-332 (2002).
8. E. Barkai, Y. Jung, and R. J. Silbey, "Time-dependent fluctuations in single molecule spectroscopy: A generalized Wiener-Khintchine approach," *Phys. Rev. Lett.*, 87(20), 207403 (2001).

7. J. Cao and Y. Jung, "Spectral analysis of electron transfer kinetics. I: Symmetric reactions," *J. Chem. Phys.*, 112(10), pp. 4716-4722 (2000).
6. Y. Jung, R. J. Silbey, and J. Cao, "Electronic coherence in mixed-valence systems: Spectral analysis," *J. Phys. Chem. A*, 103(47), pp. 9460-9468 (1999).
5. M. Yang, J. Kim, Y. Jung, and M. Cho, "Six-wave mixing spectroscopy: Resonant coherent hyper-Raman scattering," *J. Chem. Phys.* 108(10), pp.4013-4030 (1998).
4. Y. Jung, C. Hyeon, S. Shin, and S. Lee, "Effects of a quantum-mechanically driven two-state gating mode on the diffusion-influenced bimolecular reactions," *J. Chem. Phys.*, 107(23), pp. 9864-9877 (1997).
3. Y. Jung and S. Lee, "Excluded volume effect on the diffusion-influenced bimolecular reactions," *J. Phys. Chem. A*, 101(29), pp. 5255-5261 (1997).
2. J. Kim, Y. Jung, J. Jeon, K. J. Shin, and S. Lee, "Diffusion-influenced radical recombination in the presence of a scavenger," *J. Chem. Phys.*, 104(15), pp. 5784-5797 (1996).
1. Y. Jung and S. Lee, "Equivalence of the radical recombination rate theories of Waite and Szabo," *Chem. Phys. Lett.*, 231(46), pp. 429-438 (1994).

INVITED TALKS

- American Chemical Society Meeting, San Diego, CA, April 2001
Fluctuations in single molecule spectroscopy
- Special Physical Chemistry Seminar, Stanford University, Stanford, CA, September 2001
Time-dependent fluctuations in single molecule spectroscopy: Photon counting statistics of spectral diffusion processes
- Dept. of Theoretical Physics, University of Oxford, UK, March 2003
Photon counting statistics in single molecule spectroscopy: spectral diffusion in molecules and power-laws in blinking quantum dots
- American Chemical Society Meeting, New York, NY, September 2003
Effects of dynamical heterogeneity on translational diffusion and single molecule studies in glass-forming liquids
- Dept. of Chemistry & Biochemistry, University of Maryland, College Park, MD, January 2004
Theory of Photon Counting Statistics in Single Molecule Spectroscopy: Beyond the Ensemble Average
- Dept. of Chemistry, University of Chicago, IL, January 2004
Probing Dynamical Heterogeneity in Space-Time: Fluctuations in Single Molecule Spectra and Supercooled Liquids
- American Physical Society Meeting, Montreal, Canada, March 2004
Excitation lines and the breakdown of Stokes-Einstein relations in supercooled liquids
- Dept. of Chemistry, Korea University, Seoul, Korea, November 2004
Probing Dynamical Heterogeneity in Space-Time: Fluctuations in Single Molecule Spectra and Supercooled Liquids
- Dept. of Chemistry, POSTECH, Pohang, Korea, November 2004
Probing Dynamical Heterogeneity in Space-Time: Fluctuations in Single Molecule Spectra and Supercooled Liquids
- Dept. of Chemistry, Seoul National University, Seoul, Korea, November 2004
Probing Dynamical Heterogeneity in Space-Time: Fluctuations in Single Molecule Spectra and Supercooled Liquids
- Theoretical Chemistry Seminar, M.I.T., Cambridge, MA, December 2004
Probing Dynamical Heterogeneity in Space-Time: Fluctuations in Single Molecule Spectra and Supercooled Liquids
- Dept. of Chemistry, Washington University (St. Louis), MO, January 2005

Probing Dynamical Heterogeneity in Space-Time: Fluctuations in Single Molecule Spectra and Supercooled Liquids

- Dept. of Chemistry, Iowa State University, Ames, IA, January 2005
Probing Dynamical Heterogeneity in Space-Time: Fluctuations in Single Molecule Spectra and Supercooled Liquids
- Dept. of Chemistry, Texas A&M University, College Station, TX, January 2005
Probing Dynamical Heterogeneity in Space-Time: Fluctuations in Single Molecule Spectra and Supercooled Liquids
- Dept. of Chemistry, University of Utah, Salt Lake City, UT, January 2005
Probing Dynamical Heterogeneity in Space-Time: Fluctuations in Single Molecule Spectra and Supercooled Liquids
- Dept. of Chemistry, University of British Columbia, Vancouver, Canada, January 2005
Probing Dynamical Heterogeneity in Space-Time: Fluctuations in Single Molecule Spectra and Supercooled Liquids
- Dept. of Chemistry, University of Washington, Seattle, WA, February 2005
Probing Dynamical Heterogeneity in Space-Time: Fluctuations in Single Molecule Spectra and Supercooled Liquids
- Depts. of Chemistry & Physics, McGill University, Montreal, Canada, February 2005
Probing Dynamical Heterogeneity in Space-Time: Fluctuations in Single Molecule Spectra and Supercooled Liquids
- Lorentz Center workshop on Theory, Modeling and Evaluation of Single-Molecule Measurements Workshop, Leiden University, Leiden, The Netherlands, 2007. 4. 16 - 20
- NANO KOREA 2007, “Theoretical Studies of Single Molecule Spectroscopy in Nanoscale Environments”, KINTEX, Ilsan, 2007. 8. 30.
- AsianCORE/Sokendai Winter School, “Computational studies of dynamic heterogeneity in supercooled liquids and room temperature ionic liquids”, IMS, Okazaki, Japan, 2008. 1. 23.
- CMD International Symposium on Chemical Computations, “Theoretical and computational studies of heterogeneity in supercooled liquids and room temperature ionic Liquids”, Seoul National Univ., Seoul, Korea, 2008. 6. 1.
- Noise in complex systems: from molecular dynamics to stochastic modeling, “Dynamic heterogeneity in a coarse-grained model of ionic liquids”, KAIST, Korea, 2008. 10. 6.
- The 2nd KIAS International Symposium on Recent Progress in Computer Simulations in Molecular Sciences, “Exploring Dynamic Heterogeneity of Room Temperature Ionic Liquids”, KIAS, Seoul, Korea, 2009. 6. 16.
- Telluride Workshop on Single Molecule Dynamics, “Exploring Dynamic Heterogeneity of Room Temperature Ionic Liquids”, Telluride, CO, USA, 2009. 6. 22.
- 12th SNU & Hokkaido University Joint Symposium, “Fragility, Stokes-Einstein violation, and correlated local excitations in a coarse-grained model of an ionic liquid”, SNU, Korea, 2009. 11. 19.
- Workshop on the Dynamics of the Glass/Jamming Transition, “Molecular dynamics simulation study of dynamic heterogeneity in a coarse-grained model of an ionic liquid”, Novotel, Busan, Korea, 2010. 9. 8.
- The Winter School of Sokendai/Asian CORE Program, “Molecular Dynamics Simulation Study on Carbon Nanotubes in Benzene”, IMS, Okazaki, Japan, 2011. 2. 21.
- International Conference on Statistical Mechanics Approaches to Nano/Bio-Science, “Computer Simulation Study on Supercapacitors Based on Room-Temperature Ionic Liquid and Graphene”, Sookmyung Women’s Univ., Seoul, Korea, 2011. 6. 14.
- IRTG Symposium on Self-Organized Materials for Optoelectronics, “A computer simulation study on graphene-based electrical double layer capacitor” Max Planck Institute for Polymer Research, Mainz, Germany, 2011. 7. 6.

- Faraday Discussions Meeting No. 154: Ionic Liquids, “Graphene-based supercapacitors in the parallel-plate electrode configuration: Ionic liquids versus organic electrolytes”, Queen’s University, Belfast, UK, 2011. 8. 22.
- 8th Liquid Matter Conference, “Computer Simulation Study on Room-Temperature Ionic Liquid/Graphene Supercapacitor,” University of Vienna, Austria, 2011. 9. 9.
- Dynamic Days Asia-Pacific 7, “Molecular Dynamics Simulations in Room-Temperature Ionic Liquids,” Academia Sinica, Taiwan, 2012. 8.
- Berkeley Statistical Mechanics Seminar, “Dynamic Heterogeneity in Room-Temperature Ionic Liquids,” Dept. of Chemistry, University of California, Berkeley, 2012. 11.
- STRP, StatPhys25 Satellite Meeting, “Space-time phase transitions in kinetically constrained Ising model,” Jeju Island, 2013. 7.
- American Physical Society Meeting, “Dimensional Dependence of East Model,” Denver, 2013. 3.
- IRTG Symposium on Self-Organized Materials for Optoelectronics, “Threading dynamics of ring polymer metls” Max Planck Institute, Berlin, Germany, 2015. 7. 8.