



## Chunte Peng

Basic Life Research Scientist, Molecular and Cellular Physiology

### Bio

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#### HONORS AND AWARDS

- K99/R00 Pathway to Independence Award, National Institute on Aging of NIH (2020)
- Cancer-Translational Nanotechnology Training (Cancer-TNT) Program, Stanford, National Institute of Cancer of NIH (2019)
- Morse Travel Grant, MIT (2012)
- Poitras Pre-Doctoral Fellowship, MIT (2011)
- Department of Chemistry Awards for Outstanding Teaching, MIT (2010)
- Presidential Fellowship, MIT (2008)

#### EDUCATION AND CERTIFICATIONS

- BS, University of California at Berkeley , Chemistry (2008)
- PhD, Massachusetts Institute of Technology , Physical Chemistry (2014)

### Publications

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#### PUBLICATIONS

- **Single upconversion nanoparticle imaging at sub-10 W cm<sup>-2</sup> irradiance** *NATURE PHOTONICS*  
Liu, Q., Zhang, Y., Peng, C., Yang, T., Joubert, L., Chu, S.  
2018; 12 (9): 548–53
- **Two-dimensional IR spectroscopy of the anti-HIV agent KP1212 reveals protonated and neutral tautomers that influence pH-dependent mutagenicity.** *Proceedings of the National Academy of Sciences of the United States of America*  
Peng, C. S., Fedeles, B. I., Singh, V., Li, D., Amariuta, T., Essigmann, J. M., Tokmakoff, A.  
2015; 112 (11): 3229-34
- **Direct observation of ground-state lactam-lactim tautomerization using temperature-jump transient 2D IR spectroscopy.** *Proceedings of the National Academy of Sciences of the United States of America*  
Peng, C. S., Baiz, C. R., Tokmakoff, A.  
2013; 110 (23): 9243-8
- **Anharmonic vibrational modes of nucleic acid bases revealed by 2D IR spectroscopy.** *Journal of the American Chemical Society*  
Peng, C. S., Jones, K. C., Tokmakoff, A.  
2011; 133 (39): 15650-60
- **A Core-Shell-Shell Nanoparticle Architecture Towards Bright Upconversion and Improved Forster Resonant Energy Transfer**  
Siefe, C., Mehlenbacher, R. D., Peng, C., Zhang, Y., Fischer, S., Lay, A., McLellan, C. A., Alivisatos, A., Chu, S., Dionne, J. A., IEEE  
IEEE.2020

- **Sub-20 nm Core-Shell-Shell Nanoparticles for Bright Upconversion and Enhanced Forster Resonant Energy Transfer.** *Journal of the American Chemical Society*  
Siefe, C., Mehlenbacher, R. D., Peng, C. S., Zhang, Y., Fischer, S., Lay, A., McLellan, C. A., Alivisatos, A. P., Chu, S., Dionne, J. A.  
2019
- **Studying Protein-Protein Binding through T-Jump Induced Dissociation: Transient 2D IR Spectroscopy of Insulin Dimer** *JOURNAL OF PHYSICAL CHEMISTRY B*  
Zhang, X., Jones, K. C., Fitzpatrick, A., Peng, C. S., Feng, C., Baiz, C. R., Tokmakoff, A.  
2016; 120 (23): 5134-5145
- **Weakened N3 Hydrogen Bonding by 5-Formylecytosine and 5-Carboxylecytosine Reduces Their Base-Pairing Stability.** *ACS chemical biology*  
Dai, Q., Sanstead, P. J., Peng, C. S., Han, D., He, C., Tokmakoff, A.  
2016; 11 (2): 470-7
- **Tautomerism provides a molecular explanation for the mutagenic properties of the anti-HIV nucleoside 5-aza-5,6-dihydro-2'-deoxycytidine.** *Proceedings of the National Academy of Sciences of the United States of America*  
Li, D., Fedeles, B. I., Singh, V., Peng, C. S., Silvestre, K. J., Simi, A. K., Simpson, J. H., Tokmakoff, A., Essigmann, J. M.  
2014; 111 (32): E3252-9
- **A Molecular Interpretation of 2D IR Protein Folding Experiments with Markov State Models.** *Biophysical journal*  
Baiz, C. R., Lin, Y., Peng, C. S., Beauchamp, K. A., Voelz, V. A., Pande, V. S., Tokmakoff, A.  
2014; 106 (6): 1359-1370
- **Direct observation of multiple tautomers of oxythiamine and their recognition by the thiamine pyrophosphate riboswitch.** *ACS chemical biology*  
Singh, V., Peng, C. S., Li, D., Mitra, K., Silvestre, K. J., Tokmakoff, A., Essigmann, J. M.  
2014; 9 (1): 227-36
- **Folding of a heterogeneous #-hairpin peptide from temperature-jump 2D IR spectroscopy.** *Proceedings of the National Academy of Sciences of the United States of America*  
Jones, K. C., Peng, C. S., Tokmakoff, A.  
2013; 110 (8): 2828-33
- **Identification of Lactam-Lactim Tautomers of Aromatic Heterocycles in Aqueous Solution Using 2D IR Spectroscopy.** *The journal of physical chemistry letters*  
Peng, C. S., Tokmakoff, A.  
2012; 3 (22): 3302-3306
- **Coherent two-dimensional infrared spectroscopy: quantitative analysis of protein secondary structure in solution.** *The Analyst*  
Baiz, C. R., Peng, C. S., Reppert, M. E., Jones, K. C., Tokmakoff, A.  
2012; 137 (8): 1793-9
- **Melting of a beta-hairpin peptide using isotope-edited 2D IR spectroscopy and simulations.** *The journal of physical chemistry. B*  
Smith, A. W., Lessing, J., Ganim, Z., Peng, C. S., Tokmakoff, A., Roy, S., Jansen, T. L., Knoester, J.  
2010; 114 (34): 10913-24
- **Ultrafast dynamics in helium nanodroplets probed by femtosecond time-resolved EUV photoelectron imaging.** *The journal of physical chemistry. A*  
Kornilov, O., Wang, C. C., Bünermann, O., Healy, A. T., Leonard, M., Peng, C., Leone, S. R., Neumark, D. M., Gessner, O.  
2010; 114 (3): 1437-45