

Stanford

Jae Kyoo Lee

PS Research Scientist

Chemistry

Bio

ACADEMIC APPOINTMENTS

- Phys Sci Res Assoc, Chemistry

HONORS AND AWARDS

- Young Investigator Award, American Society for Nanomedicine (ASNM) (2009)
- Best Poster Award, Grodins Graduate Research Symposium (2009)
- Best Paper Award, Nano Bioelectronics & Systems Research Center (2005)

Publications

PUBLICATIONS

- **Condensing water vapor to droplets generates hydrogen peroxide.** *Proceedings of the National Academy of Sciences of the United States of America*
Lee, J. K., Han, H. S., Chaikasetsin, S., Marron, D. P., Waymouth, R. M., Prinz, F. B., Zare, R. N.
2020
- **Strong Concentration Enhancement of Molecules at the Interface of Aqueous Microdroplets** *The Journal of Physical Chemistry B*
Xiong, H., Lee, J., Zare, R., Min, W.
2020
- **Strong Electric Field Observed at the Interface of Aqueous Microdroplets.** *The journal of physical chemistry letters*
Xiong, H. n., Lee, J. K., Zare, R. N., Min, W. n.
2020: 7423–28
- **Spraying Small Water Droplets Acts as a Bactericide** *Quarterly Reviews of Biophysics Discovery*
Dulay*, M. T., Lee*, J., Mody, A. C., Narasimhan, R., Monack, D. M., Zare, R.
2020; 1 (e3): 1-8
- **Restricted Intramolecular Rotation of Fluorescent Molecular Rotors at the Periphery of Aqueous Microdroplets in Oil** *Scientific Reports*
Kang*, J., Lhee*, S., Lee, J., Zare, R., Nam, H.
2020; 10
- **Spatial Localization of Charged Molecules by Salt Ions in Oil-Confined Water Microdroplets** *Science Advances*
Lhee*, S., Lee*, J., Kang, J., Kato, S., Kim, S., Zare, R., Nam, H.
2020; 6 (41): 1-9
- **Spontaneous generation of hydrogen peroxide from aqueous microdroplets.** *Proceedings of the National Academy of Sciences of the United States of America*
Lee, J. K., Walker, K. L., Han, H. S., Kang, J., Prinz, F. B., Waymouth, R. M., Nam, H. G., Zare, R. N.
2019
- **Micrometer-Sized Water Droplets Induce Spontaneous Reduction.** *Journal of the American Chemical Society*
Lee, J. K., Samanta, D., Nam, H. G., Zare, R. N.
2019

- **Aqueous Microdroplets Containing Only Ketones or Aldehydes Undergo Dakin and Baeyer-Villiger Reactions** *Chemical Science*
Gao*, D., Jin*, F., Lee*, J., Zare, R. N.
2019; 10 (48): 10974-10978
- **Spontaneous formation of gold nanostructures in aqueous microdroplets** *NATURE COMMUNICATIONS*
Lee, J., Samanta, D., Nam, H., Zare, R. N.
2018; 9: 1562
- **Microdroplet fusion mass spectrometry: accelerated kinetics of acid-induced chlorophyll demetallation** *QUARTERLY REVIEWS OF BIOPHYSICS*
Lee, J. K., Nam, H. G., Zare, R. N.
2017; 50: 1-7
- **Abiotic production of sugar phosphates and uridine ribonucleoside in aqueous microdroplets.** *Proceedings of the National Academy of Sciences of the United States of America*
Nam, I. n., Lee, J. K., Nam, H. G., Zare, R. N.
2017; 114 (47): 12396-400
- **High-Resolution Live-Cell Imaging and Analysis by Laser Desorption/Ionization Droplet Delivery Mass Spectrometry** *ANALYTICAL CHEMISTRY*
Lee, J. K., Jansson, E. T., Nam, H. G., Zare, R. N.
2016; 88 (10): 5453-5461
- **Nanotip Ambient Ionization Mass Spectrometry** *ANALYTICAL CHEMISTRY*
Zhou, Z., Lee, J. K., Kim, S. C., Zare, R. N.
2016; 88 (10): 5542-5548
- **Acceleration of reaction in charged microdroplets** *QUARTERLY REVIEWS OF BIOPHYSICS*
Lee, J. K., Banerjee, S., Nam, H. G., Zare, R. N.
2015; 48 (4): 437-444
- **Microdroplet fusion mass spectrometry for fast reaction kinetics** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Lee, J. K., Kim, S., Nam, H. G., Zare, R. N.
2015; 112 (13): 3898-3903
- **High Resolution Mass Spectrometric Imaging for Single Cell Metabolic Analysis** *58th Annual Meeting of the Biophysical-Society*
Lee, J. K., Kim, S., Nam, H. G., Zare, R. N.
CELL PRESS.2014: 798A-798A
- **Photo-Activated Crosslinking Mass Spectrometry for Studying Biomolecular Interactions** *58th Annual Meeting of the Biophysical-Society*
Kim, S., Lee, J. K., Nam, H. G., Zare, R. N.
CELL PRESS.2014: 459A-459A
- **Ca²⁺ Dynamics in Apoptosis: Real-Time Data and Mathematical Modeling** *56th Annual Meeting of the Biophysical-Society*
Lu, S., Lee, J. K., Madhukar, A.
CELL PRESS.2012: 628A-628A
- **Real-Time Dynamics of Ca²⁺, Phosphatidylserine, Caspase-3/7, and Morphological Changes in Apoptosis: Retinal Ganglion Cells Under Elevated Pressure** *55th Annual Meeting of the Biophysical-Society*
Lu, S., Lee, J. K., Madhukar, A.
CELL PRESS.2011: 41-41
- **Real-Time Dynamics of Ca²⁺, Caspase-3/7, and Morphological Changes in Retinal Ganglion Cell Apoptosis under Elevated Pressure** *PLOS ONE*
Lee, J. K., Lu, S., Madhukar, A.
2010; 5 (10)
- **Surface modification of polydimethylsiloxane (PDMS) induced proliferation and neural-like cells differentiation of umbilical cord blood-derived mesenchymal stem cells** *JOURNAL OF MATERIALS SCIENCE-MATERIALS IN MEDICINE*
Kim, S., Lee, J. K., Kim, J. W., Jung, J., Seo, K., Park, S., Roh, K., Lee, S., Hong, Y. H., Kim, S. J., Lee, Y., Kim, S. J., Kang, et al
2008; 19 (8): 2953-2962

- **Neural prosthesis in the wake of nanotechnology: controlled growth of neurons using surface nanostructures** *1st Congress of the International-Society-of-Reconstructive-Neurosurgical-Societies*
Lee, J. K., Baac, H., Song, S., Jang, E., Lee, S., Park, D., Kim, S. J.
SPRINGER-VERLAG WIEN.2006: 141-144
- **Spatial Patterning of fibroblast cells with fabricating holographic patterning on the photoresponsive polymer** *2005 27TH ANNUAL INTERNATIONAL CONFERENCE OF THE IEEE ENGINEERING IN MEDICINE AND BIOLOGY SOCIETY, VOLS 1-7*
Lee, J. K., Jang, E., Lee, S., Kim, S. J.
2005: 4107-4110
- **Photo-triggering of the membrane gates in photo-responsive polymer for drug release** *2005 27TH ANNUAL INTERNATIONAL CONFERENCE OF THE IEEE ENGINEERING IN MEDICINE AND BIOLOGY SOCIETY, VOLS 1-7*
Lee, J. K., Lee, H., Jang, E., Lee, S., Kim, S. J.
2005: 5069-5072
- **The topographical guidance of neurons cultured on holographic photo-responsive polymer** *PROCEEDINGS OF THE 26TH ANNUAL INTERNATIONAL CONFERENCE OF THE IEEE ENGINEERING IN MEDICINE AND BIOLOGY SOCIETY, VOLS 1-7*
Lee, J. K., Baac, H., Song, S. H., Lee, S. D., Park, D., Kim, S. J.
2004; 26: 4970-4973