



Sirimuvva Tadepalli

Basic Life Research Scientist, Microbiology and Immunology

Bio

HONORS AND AWARDS

- Life Sciences Research Foundation Postdoctoral Fellowship, Merck Research Laboratories (2019-2022)
- Dean's Postdoctoral Fellowship, Stanford School of Medicine (2019)
- Graduate Student Gold Award, Materials Research Society (2017)

EDUCATION AND CERTIFICATIONS

- Doctor of Philosophy, Washington University (2017)
- Bachelor of Technology, National Institute of Technology (2012)

Publications

PUBLICATIONS

- **Au@Ag nanostructures for the sensitive detection of hydrogen peroxide.** *Scientific reports*
Yeh, I., Tadepalli, S., Liu, K.
2022; 12 (1): 19661
- **Plasmonic Nanostructures-Decorated ZIF-8-Derived Nanoporous Carbon for Surface-Enhanced Raman Scattering** *ACS OMEGA*
Liao, G., Lien, M., Tadepalli, S., Liu, K.
2022: 36427-36433
- **In vivo bioluminescence imaging of granzyme B activity in tumor response to cancer immunotherapy.** *Cell chemical biology*
Chen, M., Zhou, K., Dai, S., Tadepalli, S., Balakrishnan, P. B., Xie, J., Rami, F. E., Dai, T., Cui, L., Idoyaga, J., Rao, J.
2022
- **Shape-Dependent Biodistribution of Biocompatible Silk Microcapsules** *ACS APPLIED MATERIALS & INTERFACES*
Cao, S., Tang, R., Sudlow, G., Wang, Z., Liu, K., Luan, J., Tadepalli, S., Seth, A., Achilefu, S., Singamaneni, S.
2019; 11 (5): 5499-5508
- **Shape-Dependent Biodistribution of Biocompatible Silk Microcapsules.** *ACS applied materials & interfaces*
Cao, S., Tang, R., Sudlow, G., Wang, Z., Liu, K., Luan, J., Tadepalli, S., Seth, A., Achilefu, S., Singamaneni, S.
2019
- **Photothermally Active Reduced Graphene Oxide/Bacterial Nanocellulose Composites as Biofouling-Resistant Ultrafiltration Membranes** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
Jiang, Q., Ghim, D., Cao, S., Tadepalli, S., Liu, K., Kwon, H., Luan, J., Min, Y., Jun, Y., Singamaneni, S.
2019; 53 (1): 412–21
- **Aqueous toughening in crosslinked marine animal proteins**
Grant, A., Kreckler, M., Tadepalli, S., Gupta, M., Crosby, M., Dennis, P., Singamaneni, S., Naik, R., Tsukruk, V.

AMER CHEMICAL SOC.2018

- **Metal-Organic Framework Encapsulation for Biospecimen Preservation** *CHEMISTRY OF MATERIALS*
Wang, C., Sun, H., Luan, J., Jiang, Q., Tadepalli, S., Morrissey, J. J., Kharasch, E. D., Singamaneni, S.
2018; 30 (4): 1291–1300
- **Metal-Organic Framework Encapsulation for the Preservation and Photothermal Enhancement of Enzyme Activity** *SMALL*
Tadepalli, S., Yim, J., Cao, S., Wang, Z., Naik, R. R., Singamaneni, S.
2018; 14 (7)
- **Metal-Organic Framework Encapsulation for the Preservation and Photothermal Enhancement of Enzyme Activity.** *Small (Weinheim an der Bergstrasse, Germany)*
Tadepalli, S. n., Yim, J. n., Cao, S. n., Wang, Z. n., Naik, R. R., Singamaneni, S. n.
2018
- **Advancing Peptide-Based Biorecognition Elements for Biosensors Using in-Silico Evolution.** *ACS sensors*
Xiao, X. n., Kuang, Z. n., Slocik, J. M., Tadepalli, S. n., Brothers, M. n., Kim, S. n., Mirau, P. A., Butkus, C. n., Farmer, B. L., Singamaneni, S. n., Hall, C. K., Naik, R. R.
2018; 3 (5): 1024–31
- **Catalytically Active Bacterial Nanocellulose-Based Ultrafiltration Membrane.** *Small (Weinheim an der Bergstrasse, Germany)*
Xu, T. n., Jiang, Q. n., Ghim, D. n., Liu, K. K., Sun, H. n., Derami, H. G., Wang, Z. n., Tadepalli, S. n., Jun, Y. S., Zhang, Q. n., Singamaneni, S. n.
2018
- **Extreme Mechanical Behavior of Nacre-Mimetic Graphene-Oxide and Silk Nanocomposites.** *Nano letters*
Xie, W. n., Tadepalli, S. n., Park, S. H., Kazemi-Moridani, A. n., Jiang, Q. n., Singamaneni, S. n., Lee, J. H.
2018
- **Ultrarobust Biochips with Metal-Organic Framework Coating for Point-of-Care Diagnosis.** *ACS sensors*
Wang, C. n., Wang, L. n., Tadepalli, S. n., Morrissey, J. J., Kharasch, E. D., Naik, R. R., Singamaneni, S. n.
2018
- **Gold Nanorod-Mediated Photothermal Enhancement of the Biocatalytic Activity of a Polymer-Encapsulated Enzyme** *CHEMISTRY OF MATERIALS*
Tadepalli, S., Yim, J., Madireddi, K., Luang, J., Naik, R. R., Singamaneni, S.
2017; 29 (15): 6308–14
- **An in situ grown bacterial nanocellulose/graphene oxide composite for flexible supercapacitors** *JOURNAL OF MATERIALS CHEMISTRY A*
Jiang, Q., Kacica, C., Soundappan, T., Liu, K., Tadepalli, S., Biswas, P., Singamaneni, S.
2017; 5 (27): 13976–82
- **Amplification of Refractometric Biosensor Response through Biomineralization of Metal-Organic Framework Nanocrystals** *ADVANCED MATERIALS TECHNOLOGIES*
Luan, J., Hu, R., Tadepalli, S., Morrissey, J. J., Kharasch, E. D., Singamaneni, S.
2017; 2 (7)
- **Photothermal and hydrophilic functionalization of reverse osmosis membranes for enhanced resistance of mineral scaling, organic, and bio-fouling**
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- **Sunlight enables reduced graphene oxide/bacterial nanocellulose ultrafiltration membranes to resist biofouling**
Jun, Y., Jiang, Q., Ghim, D., Tadepalli, S., Kwon, H., Liu, K., Min, Y., Luan, J., Singamaneni, S.
AMER CHEMICAL SOC.2017
- **Wood Graphene Oxide Composite for Highly Efficient Solar Steam Generation and Desalination** *ACS APPLIED MATERIALS & INTERFACES*
Liu, K., Jiang, Q., Tadepalli, S., Raliya, R., Biswas, P., Naik, R. R., Singamaneni, S.
2017; 9 (8): 7675–7681
- **Metal-Organic Framework as a Protective Coating for Biodiagnostic Chips** *ADVANCED MATERIALS*
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- **Bio-Optics and Bio-Inspired Optical Materials.** *Chemical reviews*
Tadepalli, S. n., Slocik, J. M., Gupta, M. K., Naik, R. R., Singamaneni, S. n.
2017; 117 (20): 12705–63
- **Structure-dependent SERS activity of plasmonic nanorattles with built-in electromagnetic hotspots.** *The Analyst*
Liu, K. K., Tadepalli, S. n., Wang, Z. n., Jiang, Q. n., Singamaneni, S. n.
2017; 142 (23): 4536–43
- **Influence of Surface Charge of the Nanostructures on the Biocatalytic Activity.** *Langmuir : the ACS journal of surfaces and colloids*
Tadepalli, S. n., Wang, Z. n., Liu, K. K., Jiang, Q. n., Slocik, J. n., Naik, R. R., Singamaneni, S. n.
2017; 33 (26): 6611–19
- **Effect of size and curvature on the enzyme activity of bionanoconjugates.** *Nanoscale*
Tadepalli, S. n., Wang, Z. n., Slocik, J. n., Naik, R. R., Singamaneni, S. n.
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- **Bilayered Biofoam for Highly Efficient Solar Steam Generation** *ADVANCED MATERIALS*
Jiang, Q., Tian, L., Liu, K., Tadepalli, S., Raliya, R., Biswas, P., Naik, R. R., Singamaneni, S.
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- **Silk-Encapsulated Plasmonic Biochips with Enhanced Thermal Stability** *ACS APPLIED MATERIALS & INTERFACES*
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- **PEGylated Artificial Antibodies: Plasmonic Biosensors with Improved Selectivity** *ACS APPLIED MATERIALS & INTERFACES*
Luan, J., Liu, K., Tadepalli, S., Jiang, Q., Morrissey, J. J., Kharasch, E. D., Singamaneni, S.
2016; 8 (36): 23509-23516
- **Polarization-Dependent Surface-Enhanced Raman Scattering Activity of Anisotropic Plasmonic Nanorattles** *JOURNAL OF PHYSICAL CHEMISTRY C*
Liu, K., Tadepalli, S., Kumari, G., Banerjee, P., Tian, L., Jain, P. K., Singamaneni, S.
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- **Adsorption Behavior of Silk Fibroin on Amphiphilic Graphene Oxide.** *ACS biomaterials science & engineering*
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- **Nanostructure-enabled membranes for improved reverse osmosis processes**
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- **Plasmonic Nanogels for Unclonable Optical Tagging** *ACS APPLIED MATERIALS & INTERFACES*
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- **Plasmonic paper: a porous and flexible substrate enabling nanoparticle-based combinatorial chemistry** *RSC ADVANCES*
Schmucker, A. L., Tadepalli, S., Liu, K., Sullivan, C. J., Singamaneni, S., Naik, R. R.
2016; 6 (5): 4136-4144
- **Plasmonic Biofoam: A Versatile Optically Active Material** *NANO LETTERS*
Tian, L., Luan, J., Liu, K., Jiang, Q., Tadepalli, S., Gupta, M. K., Naik, R. R., Singamaneni, S.
2016; 16 (1): 609-616
- **Peptide Functionalized Gold Nanorods for the Sensitive Detection of a Cardiac Biomarker Using Plasmonic Paper Devices** *SCIENTIFIC REPORTS*
Tadepalli, S., Kuang, Z., Jiang, Q., Liu, K., Fisher, M. A., Morrissey, J. J., Kharasch, E. D., Slocik, J. M., Naik, R. R., Singamaneni, S.
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- **Off-Resonant Gold Superstructures as Ultrabright Minimally Invasive Surface-Enhanced Raman Scattering (SERS) Probes** *CHEMISTRY OF MATERIALS*
Tian, L., Tadepalli, S., Fei, M., Morrissey, J. J., Kharasch, E. D., Singamaneni, S.
2015; 27 (16): 5678-5684
- **Size-Dependent Surface Enhanced Raman Scattering Activity of Plasmonic Nanorattles** *CHEMISTRY OF MATERIALS*
Liu, K., Tadepalli, S., Tian, L., Singamaneni, S.
2015; 27 (15): 5261-5270
- **Bio-Enabled Gold Superstructures with Built-In and Accessible Electromagnetic Hotspots** *ADVANCED HEALTHCARE MATERIALS*
Tian, L., Fei, M., Tadepalli, S., Morrissey, J. J., Kharasch, E. D., Singamaneni, S.
2015; 4 (10): 1502-1509
- **Hydrophilic, Bactericidal Nanoheater-Enabled Reverse Osmosis Membranes to Improve Fouling Resistance** *ACS APPLIED MATERIALS & INTERFACES*
Ray, J. R., Tadepalli, S., Nergiz, S. Z., Liu, K., You, L., Tang, Y., Singamaneni, S., Jun, Y.
2015; 7 (21): 11117-11126
- **Au nanostar-enabled multifunctional reverse osmosis membranes for reduced mineral scaling, organic-, and bio-fouling**
Ray, J., Tadepalli, S., Nergiz, S., Liu, K., You, L., Tang, Y., Singamaneni, S., Jun, Y.
AMER CHEMICAL SOC.2015
- **Plasmonic Nanorattles with Intrinsic Electromagnetic Hot-Spots for Surface Enhanced Raman Scattering** *SMALL*
Jaiswal, A., Tian, L., Tadepalli, S., Liu, K., Fei, M., Farrell, M. E., Pellegrino, P. M., Singamaneni, S.
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- **Multifunctional Hybrid Nanopatches of Graphene Oxide and Gold Nanostars for Ultraefficient Photothermal Cancer Therapy** *ACS APPLIED MATERIALS & INTERFACES*
Nergiz, S. Z., Gandra, N., Tadepalli, S., Singamaneni, S.
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- **Bioplasmonic calligraphy for multiplexed label-free biodetection** *BIOSENSORS & BIOELECTRONICS*
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2014; 59: 208-215
- **Multiplexed charge-selective surface enhanced Raman scattering based on plasmonic calligraphy** *JOURNAL OF MATERIALS CHEMISTRY C*
Tian, L., Tadepalli, S., Farrell, M. E., Liu, K., Gandra, N., Pellegrino, P. M., Singamaneni, S.
2014; 2 (27): 5438-5446
- **Effect of Carbon Nanotube Dispersion on Mechanical Properties of Aluminum-Silicon Alloy Matrix Composites** *JOURNAL OF MATERIALS ENGINEERING AND PERFORMANCE*
Chandran, P., Sirimuvva, T., Nayan, N., Shukla, A. K., Murty, S. V., Pramod, S. L., Sharma, S. C., Bakshi, S. R.
2014; 23 (3): 1028-1037