Curriculum Vitae

LIMEI TIAN

Assistant Professor

Department of Biomedical Engineering

Texas A&M University

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EDUCATION

PhD: Mechanical Engineering

Washington University in St. Louis, September 2014

Advisor: Prof. Srikanth Singamaneni

Master of Science: Structural Engineering

Shan Dong University, China, July 2009

Advisor: Prof. Zhenhua Liu

Bachelor of Science: Civil Engineering

Shan Dong University, China, July 2006

EMPLOYMENT

- Assistant Professor, Department of Biomedical Engineering, Texas A&M University, August 2018-present.
- Beckman Institute Postdoctoral Fellow, University of Illinois at Urbana-Champaign, USA, August 2015-July 2018, Advisor: Prof. John A. Rogers
- Postdoctoral Research Associate, Washington University in St. Louis, USA, September 2014-July 2015, Advisor: Prof. Srikanth Singamaneni

AWARDS AND HONORS

- ADVANCE National Center for Faculty Development & Diversity (NCFDD) Faculty Success Fellow, 2021
- NIH NIBIB Trailblazer Award, 2020
- Beckman Institute Postdoctoral Fellowship, University of Illinois at Urbana-Champaign, USA, 2015-2018
- Chinese Government Award for Outstanding Self-Financed Students Abroad, 2014

- Graduate Student Award in Materials Research Society-Fall Meeting, Boston, Massachusetts, USA, 2013
- 1st prize in 18th Washington University Annual Graduate Research Symposium, 2013
- NSF Summer Institute on Nanomechanics, Nanomaterials, and Micro/Nanomanufacturing fellowship, 2011
- Outstanding Graduate student of Shandong Province, 2009
- Outstanding Graduate student of Shandong University, 2007, 2008, 2009
- Outstanding Undergraduate Student of Shandong University, 2004, 2005

AFFILIATIONS AND PROFESSIONAL SERVICES

- Associate Editor for Frontiers in Bioengineering and Biotechnology
- Member of Materials Research Society (MRS)
- Member of American Chemical Society (ACS)
- Member of Biomedical Engineering Society (BMES)
- Served on NSF Biosensing program panel, 2020
- Served on NIH EBIT study section, 2021
- Reviewed abstracts for the BMES Annual Meeting, 2020, 2021

RESEARCH INTERESTS

- Wearable and implantable biosensors and therapeutic devices.
- Organic/inorganic hybrid materials for physical, chemical and biological sensors and multifunctional surfaces and interfaces.
- Programmable/reconfigurable materials and systems with tunable properties and functionalities.
- Unconventional approaches for micro/nanofabrication.

PUBLICATIONS

Book Chapter

Tian, L.; Singamaneni, S. “Surface Enhanced Raman Scattering-based Bioimaging” in Nanotechnology of Biomedical Imaging and Diagnostics: From Nanoparticle Design to Clinical Applications. Edited by Berezin, M. John Wiley & Sons (2013)

Peer-reviewed journal publications

(63) Lee, H. P.; Deo, K.; Jeong, J.; Namkoong, M. ; **Tian, L.;** Gaharwar, A. K. Injectable, Self-healing, and 3D Printable Dynamic Gold Nanocomposite Hydrogels. **2022**, Under review.

(62) Deo, K.A.; Jaiswal, M.K.; Abasi, S.; Lokhande, G.; Bhunia, S.; Nguyen, T.U.; Namkoong, M.; Darvesh, K.; **Tian, L.;** Guiseppi-Elie, A.; Gaharwar, A.K. Nanoengineered ink for designing 3D printable flexible bioelectronics. **2022**, Under review.

(61) Namkoong, M.; Guo, H.; Rahman, M. S.; Wang, D.; Pfeil, C. J.; Hager, S.; **Tian, L.** Moldable and Transferrable Conductive Nanocomposites for Epidermal Electronics, npj Flexible Electronics, **2022**, Accepted.

(60) Mogera, U.†; Guo, H.†; Namkoong, M.; Rahman, M. S.; Nguyen, T.; **Tian, L.** Wearable Plasmonic Paper-based Microfluidics for Continuous Sweat Analysis, Science Advances, **2022**, 8, eabn1736.

(59) Guo, H.; Yin, Z.; Namkoong, M.; Li, Y.; Nguyen, T.; Salcedo, E.; Arizpe, I.; **Tian, L.** Printed Ultrastable Bioplasmonic Microarrays for Point-of-Need Biosensing. ACS Appl. Mater. Interfaces., **2022**, 14, 10729. DOI:10.1021/acsami.1c24458

(58) Tu, D.; Holderby, A.; Guo, H.; Mabbott, S.; **Tian, L.**; Coté, G. L. Spectrally Multiplexed Assay Using Gap Enhanced Nanoparticle for Detection of a Myocardial Infarction Biomarker Panel, Analytica Chimica Acta, **2022**, 1198, 339562.

(57) Balasubramaniam, B.; Kumar, S. A.; Singh, K. A.; Bhunia, S.; Verma, K.; **Tian, L.**; Gupta, R. K.; Gaharwar, A. K. Electrically Conductive MoS2 Reinforced Polyacrylonitrile Nanofibers for Biomedical Applications. Adv. NanoBiomed Res., **2021**, 210010.

(56) Zhang, H.; Zhao, H.; Zhao, X.; Xu, C.; Franklin, D.; Vázquez-Guardado, A.; Bai, W.; Zhao, J.; Li, K.; Monti, G.; Lu, W.; Kobeissi, A.; **Tian, L.**; Ning, X.; Yu X.; Mehta, S.; Chanda, D.; Huang,Y.; Xu, S. Perez White, B. E.; Rogers, J. A. Biocompatible Light Guide-Assisted Wearable Devices for Enhanced UV Light Delivery in Deep Skin, Adv. Funct. Mater., **2021**, 27, 2100576.

(55) Li, Y.; Guo, H.; Ze, Y.; Lyle, K.; **Tian, L.** Metal-organic frameworks for preserving functionality of plasmonic nanosensors. ACS Appl. Mater. Interface, **2021**, 13, 5564.

(54) Chandra, S.; Li, J.; Afsharipour, B.; Cardona, A. F.; Suresh, N. L.; **Tian, L**.; Deng, Y.; Zhong, Y.; Xie, Z.; Shen, H.; Huang, Y.; Rogers, J. A.; Rymer, W. Z. Performance Evaluation of a Wearable Tattoo Electrode Suitable for High-Resolution Electromyogram Recording, IEEE

Transactions on Biomedical Engineering, DOI: 10.1109/TBME.2020.3032354, **2020**.

(53) Yin, Z.; Guo, H.; Li, Y.; Chiu, J.; **Tian, L.** Ultrastable plasmonic bioink for printable point-of-care biosensors. *ACS Appl. Mater. Interfaces*. **2020**, 12, 35977.

(52) Natesan, H.; **Tian, L.;** Rogers, J. A.; Bischof, DJ. A Micro-thermal sensor for cryoablation balloons. *J Biomech Eng.* doi: 10.1115/1.4047134. **2020**.

(51) Ray, T. R.; Choi, J.; Bandodkar, J. A.; Krishnan, S.; Gutruf, P.; **Tian, L.;** Ghaffari, R.; Rogers, J. A. Recent Advances in Bio-Integrated Wearable Systems, *Chem. Rev.* **2019**, 119, 5461.

(50) **Tian, L.;** Zimmerman, B.; Akhtar, A.; Yu, K. J.; Moore, M.; Larson, R.; Lee, J. W.; Li, J.; Liu, Y.; Metzger, B.; Qu, S.; Guo, X.; Wu, J.; Mattewson, K. E.; Cornman, J. M.; Fatina, M.; Ma, S.; Wu, T.; Zhang, J.; Zhang, Y.; Dolcos, F.; Fabiani, M.; Gratton, G.; Hargrove, L.; Braun, P.; Huang, Y.; Rogers, J. A. Large-area MRI-compatible epidermal electronic interfaces for prosthetic control and cognitive monitoring, *Nature Biomedical Engineering*, **2019**, 3, 194.

(49) Shin, J.; Yan, Y., Bai; W., Xue, Y.; Gamble, P.; **Tian, L.**; Kandela, I.; Haney, C. R.; Spees, W.; Lee, Y.; Choi, M.; Ko, J., Ryu; H., Pezhouh; M., Kang; S., Won; S. M.; Yu, K. J.; Zhao, J.; Lee, Y. K.; MacEwan, M. R.; Song, S.; Huang, Y.; Ray, W. Z.; Roger, J. A. Bioresorbable Pressure Sensors with Thermally Grown Silicon Dioxide Biofluid Barriers for Monitoring of Chronic Diseases and Healing Processes, *Nature Biomedical Engineering*, **2019**, 3, 37.

(48) Li, J.; Song, E.; Chiang, C.; Yu, K. J.; Koo, J.; Du, H.; Zhong, Y.; Hill, M.; Wang,, C.; Zhang, J.; Chen, Y.; **Tian, L.**; Zhong, Y.; Fang, G.; Viventi, J.; Roger, J. A. Conductively Coupled Flexible Silicon Electronic Systems for Chronic Neural Electrophysiology, *Proc. Natl. Acad. Sci.* U.S.A, **2018**, 115, 9542.

(47) Crawford, K.; Ma, Y.; Krishnan, S.; Wei, C.; Capua, D.; Xue, Y.; Xu, S.; Xie, Z.; Won, S.; **Tian, L.**; Webb, R.; Li, Y.; Feng, X.; Huang, Y.; Rogers, J. A. Advanced Approaches for Quantitative Characterization of Thermal Transport Properties in Soft Materials Using Thin, Conformable Resistive Sensors, *Extreme Mechanics Letters*, **2018**, 22, 27.

(46) Yu, X.; Wang, H.; Ning, X.; Sun, R.; Salomao, M.; Albadawi, H.; S., A. C.; Yu, Y.; **Tian, L.;** Koh, A.; Lee, C. M.; Chempakasseril, A.; Tian, P.; Pharr, M.; Yuan, J.; Huang, Y.; Oklu, R.; Rogers, J. A. Thin, Needle-Based Piezoelectric Systems for Guided Tissue Targeting by Mechanical Sensing, *Nature Biomedical Engineering*, **2018**, 2, 165.

(45) Heikenfeld, J.**;** Jajack, A.; Rogers, J.; Gutruf, P.; **Tian, L.;** Pan, T.; Li, R.; Khine, M.; Kim, J.; Wang, J.; Kim, J. Wearable Sensors: Modalities, Challenges, and Prospects, *Lab on a Chip*,

2018, 18, 217.

(44) Liu, Y.; **Tian, L.;** S. Raj, M.; Cotton, M.; Ma, Y.; Ma, S.; McGrane, B.; Pendharkar, A. V.; Dahaleh, N.; Olson, L.; Luan, H.; Block, O.; Suleski, B.; Zhou, Y.; Jayaraman, C.; Koski, T.; Aranyosi, A. J.; Wright, J. A.; Jayaraman, A.; Huang, Y.; Ghaffari, R.; Kliot M.; Rogers, J. A. Intraoperative Monitoring of Neuromuscular Function with Soft, Skin Mounted Wireless Devices, *npj Digital Medicine*, **2018**, 1, 19.

(43) **Tian, L.;**† Li, Y.;† Webb, R.C.;† Krishnan, S.; Bian, Z.; Ning, X.; Kurniawan, J.; Liu, Y.; Xie, X.; Liu, Y.; Shi, Z.; Wu, T.; Ning, R.; Li, D.; Cahill, D. G.; Huang, Y.; Rogers, J. A. Flexible and Stretchable 3ω Sensors for Thermal Characterization of Human Skin, *Adv. Funct. Mater.*, **2017**, 27, 1701282.

(42) Feng, D.; Zhang, H.; Xu, S.; **Tian, L.;** Song, N. Stretchable array of metal nanodisks on a 3D sinusoidal wavy elastomeric substrate for frequency tunable plasmonics, *Nanotechnology*, **2017**, 28, 115703.

(41) Huang, X.; Liu, Y.; Kong, G.W.; Seo, J.-H.; Ma, Y.; Jang, K.-I.; Fan, J. A.; Mao, S.; Chen, Q.; Li, D.; Liu, H.; Wang, C.; Patnaik, D.; **Tian, L.;** Salvatore, G.; Feng, X.; Ma, Z.; Huang, Y.; Rogers, J. A. Epidermal radio frequency electronics for wireless power transfer. *Microsystems and Nanoengineering*, **2016**, 2, 16052.

(40) Jiang, Q.; **Tian, L.;** Liu, K.; Tadepalli, S.; Raliya, R.; Biswas, P.; Naik, R. R.; Singamaneni, S. Bilayered Biofoam for Highly Efficient Solar Steam Generation. *Adv. Mater.*, **2016**, 28, 9400–9407

(39) Liu, K.; Tadepalli, S.; Kumar, G.; Banerjee, P.; **Tian, L.;** Jain, P. K.; Singamaneni, S. Polarization-Dependent Surface Enhanced Raman Scattering Activity of Anisotropic Plasmonic Nanorattles. *J. Phys. Chem. C*, **2016**, 120, 16899–16906

(38) Huang, G.; **Tian, L.;** Liu, K.; Hu, B.; Xu, F.; Lu, T. J.; Naik, R. R.; Singamaneni, S. Elastoplastic Deformation of Silk Micro and Nanostructures. *ACS Biomater. Sci. Eng*., **2016**, 2, 893–899

(37) **Tian, L.;** Jiang, Q.; Liu, K.; Luan, J.; Tadepalli, S.; Naik, R. R.; Singamaneni, S. Bacterial Nanocellulose-based Flexible Surface Enhanced Raman Scattering Substrate. *Adv. Mater. Interface*, **2016**, 3, 1600214

(36) **Tian, L.;** Liu, K.; Fei, M.; Tadepalli, S.; Cao, S.; Geldmeier, J. A.; Tsukruk, V. V.; Singamaneni, S. Harnessing Spontaneous Folding of Plasmonic Gel for Unclonable Optical Tags.

ACS Appl Mater Interfaces. **2016**, 8, 4031-41

(35) Som, A.; Raliya, R.; **Tian, L.;** Akers, W.; Ippolito, J. E.; Singamaneni, S.; Biswas, P.; Achilefu, S. Monodispersed calcium carbonate nanoparticles modulate local pH and inhibit tumor growth *in vivo*. *Nanoscale*, **2016**, 8, 12639-12647

(34) **Tian, L.;** Luan, J.; Liu, K.; Jiang, Q.; Tadepalli, S.; Gupta, K. M.; Naik, R. R.; Singamaneni, S. Plasmonic Biofoam: A Versatile Optically Active Material. *Nano Lett.*, **2016**, 16, 609–616

(33) Feng, A.L.; Lin, M; **Tian, L.;** Zhu, H.Y.; Guo, H.; Singamaneni, S.; Duan, Z.; Lu, T.J.; Xu, F.; Selective enhancement of red emission from upconversion nanoparticles via surface plasmon-coupled emission. *RSC Adv.,* **2015**, 5, 76825-76835

(32) **Tian, L.;** Tadepalli, S.; Fei, M.; Morrissey, J.; Kharasch, E. D.; Singamaneni, S. Off-Resonant Gold Superstructures as Ultrabright Minimally Invasive Surface-Enhanced Raman Scattering (SERS) Probes. *Chem. Mater.,* **2015**, 27, 5678–5684

(31) Liu, K.; Tadepalli, S.; **Tian, L.;** Singamaneni, S. Size-Dependent Surface Enhanced Raman Scattering Activity of Plasmonic Nanorattles. *Chem. Mater.,* **2015**, 27, 5261–5270

(30) Gupta, K. M.; Meng, F.; Johnson, N. B.; Kong, Y.L.; **Tian, L.;** Yeh, Y.; Masters, N.; Singamaneni, S.; McAlpine. C. M. 3D Printed Programmable Release Capsules. *Nano Lett.,* **2015**, 15, 5321–5329

(29) **Tian, L.;** Fei, M.; Tadepalli, S.; Morrissey, J.; Kharasch, E. D.; Singamaneni, S. Bio-enabled Gold Superstructures with Built-in and Accessible Electromagnetic Hotspots. *Adv. Healthcare Mater,* **2015**, 4, 1502-1509

(28) Feng, A.L.; You, M.L.; **Tian, L.;** Singamaneni, S.; Liu, M.; Duan, Z.; Lu, T.J.; Xu, F.; Lin, M. Distance-Dependent Plasmon-Enhanced Fluorescence of Upconversion Nanoparticles using Polyelectrolyte Multilayers as Tunable Spacers. *Scientific Reports*, **2015**, DOI: 10.1038/srep07779

(27) Zhuo, Y.; **Tian, L.;** Chen, W.; Yu, H.; Singamaneni, S.; Cunningham B. T. Protein-protein binding detection with nanoparticle photonic crystal enhanced microscopy (NP-PCEM), Engineering in Medicine and Biology Society (EMBC), 36th Annual International Conference of the IEEE, **2014**, 2069-2072

(26) Jaiswal, A.;† **Tian, L.;**† Tadepalli, S.; Liu, K.; Farrell, M. E.; Pellegrino, P. M.; Singamaneni, S. Plasmonic Nanorattles with Intrinsic Electromagnetic Hot-Spots for Surface Enhanced Raman Scattering. *Small* **2014**, 10, 4287–4292

(25) **Tian, L.;** Tadepalli, S.; Hankus, M. E.; Liu, K.; Gandra, N.; Pellegrino, P. M.; Singamaneni,

S. Multiplexed Charge-Selective Surface-Enhanced Raman Scattering using Calligraphy-based Plasmonic Paper. *J. Mater. Chem. C*, **2014**, 2, 5438-5446

(24) **Tian, L.;** Nergiz, S. Z.; Hankus, M. E.; Pellegrino, P. M.; Slocik, J. M.; Naik, R. R.; Singamaneni, S. Plasmonic Paper: An Emerging Trace Detection Platform, SPIE Newsroom. **2014,** DOI: 10.1117/2.1201405.005468

(23) Zhuo, Y.; Hu, H.; Chen, W.; Lu, M.; **Tian, L.;** Yu, H.; Long, K. D.; Chow, E.; King, W. P.; Singamaneni, S.; Cunningham B. T. Single Nanoparticle Detection Using Photonic Crystal Enhanced Microscopy. *Analyst,* **2014**,139, 1007-1015.

(22) Gandra, N.; **Tian, L.;** Nergiz, S. Z.; Singamaneni, S. Migration of Plasmonics from Static to Dynamic Surfaces. *J. Nanosci. Lett.* **2014**, 4, 23.

(21) Gandra, N.; Portz, C.; **Tian, L.;** Tang, R.; Xu, B.; Achilefu, S.; Singamaneni, S. Probing Distance-Dependent Plasmon Enhanced Near-infrared Fluorescence using Polyelectrolyte Multilayers as Dielectric Spacers. *Angew. Chem. Int. Ed.* **2014**, 53, 866–870.

(20) **Tian, L.;** Tadepalli, S.; Park, S. H.; Liu, K.; Morrissey, J. J.; Kharasch, E. D.; Naik, R. R.; Singamaneni, S. Bioplasmonic Calligraphy for Multiplexed Label-free Biodetection. *Biosensor and Bioelectronics,* **2014**, 59, 208–215.

(19) **Tian, L.;** Liu, K.; Morrissey, J. J.; Gandra, N.; Kharasch, E. D.; Singamaneni, S. Gold Nanocages with Built-in Artificial Antibodies for Kidney Injury Detection. *J. Mater. Chem. B,* **2014**, 2, 167-170.

(18) Wu, F.; **Tian, L.;** Kanjolia, R.; Singmaneni, S. Banerjee, P. Plasmonic Metal-to-Semiconductor Switching in Au Nanorod-ZnO nanocomposite films. *ACS Appl. Mater. Interface,* **2013**, 5, 7693–7697.

(17) **Tian, L.;** Gandra, N.; Singamaneni, S. Monitoring Controlled Release of Payload from Gold Nanocages using Surface Enhanced Raman Scattering. *ACS Nano*, **2013**, 7, 4252–4260.

(16) Abbas, A.; Brimer, A.; Slocik, J. M.; **Tian, L.;** Naik, R. R.; Singamaneni, S. All-in-one Chemosensor on a Paper Strip: Separation, Pre-concentration and Sub-Attomolar Detection. *Anal. Chem.* **2013**, 85, 3977.

(15) Nergiz, S. Z.; Gandra, N.; Farrell, M. E.; **Tian, L.;** Pellegrino, P. M.; Singamaneni, S. Biomimetic SERS substrate: Peptide Recognition Elements for Highly Selective Chemical Detection in Chemically Complex Media. *J. Mater. Chem. A*, **2013**, 1, 6543-6549.

(14) Abbas, A.; Kattumenu, R.; **Tian L.;** Singamaneni, S. Molecular Linker-Mediated Self-

assembly of Gold Nanoparticles: Understanding and Controlling the Dynamics. *Langmuir*, **2013**, 29, 56.

(13) Abbas, A.; Brimer, A.; **Tian, L.;** d'Avignon, D. A.; Hameed,Â A. S.; Vittal, J. J.; Singamaneni, S. From Single Molecules to Macroscale structures: Growing by Vesicle Walk and Fusion. *Small,* **2013**, 9, 2611-8.

(12) Abbas, A.; **Tian, L.;** Morrissey, J.; Kharasch, E. D.; Singamaneni, S. Hot-spot Localized Artificial Antibodies for Label-free Plasmonic Biosensing. *Adv. Funct. Mat,* **2013**, 23, 1789.

(11) Abbas, A.; Fei, M.; **Tian, L.;** Singamaneni, S. Trapping proteins within gold nanoparticle assemblies: dynamically tunable hot-spots for nanobiosensing. Plasmonics. **2013**, 8, 537-544.

(10) **Tian, L.;** Chen, E.; Gandra, N.; Abbas, A.; Singamaneni, S. Gold Nanorods as Plasmonic Nanotransducers: Distance-dependent Refractive Index Sensitivity. *Langmuir*, **2012,** 28, 17435.

(9) **Tian, L.;** Morrissey, J. J.; Kattumenu, R.; Gandra, N.; Kharasch, E. D.; Singamaneni, S. Bioplasmonic Paper as a Platform for Detection of Kidney Cancer Biomarkers. *Anal. Chem.* **2012**, 84, 9928.

(8) **Tian, L.;** Fei, M.; Kattumenu, R.; Abbas A.; Singamaneni. S. Gold nanorods as nanotransducers to monitor the growth and swelling of ultrathin polymer films. *Nanotechnology,* **2012**, 23, 255502.

(7) Abbas, A.; **Tian, L.;** Kattumenu, R.; Halim, A.; Singamaneni. S. Freezing the self-assembly process of gold nanocrystals. *Chem. Commun.,* **2012**, 48, 1677–1679.

(6) Gandra, N.; Abbas, A.; **Tian, L.;** Singamaneni, S. Plasmonic Planet-Satellite Analogues: Hierarchical Self-Assembly of Gold Nanostructures. *Nano Lett.,* **2012**, 12, 2645–2651.

(5) Abbas, A.; Kattumenu, R.; **Tian, L.;** Nergiz, Z. S., Singamaneni, S. Self-assembly of plasmonic nanostructures. *J. Nanosci. Lett.,* **2012**, 2, 1-17.

(4) Lee, C. H.; Hankus, M. E.; **Tian, L.;** Pellegrino, P. M.; Singamaneni, S. Highly Sensitive SERS Substrates Based on Filter Paper Loaded with Plasmonic Nanostructures. *Anal. Chem.* **2011**, 83, 8953–8958.

(3) Kattumenu, R.; Lee, H. C.; **Tian, L.;** McConney, E. M.; Singamaneni, S. Nanorod decorated nanowires as highly efficient SERS-active hybrids. *J. Mater. Chem.* **2011**, 21, 15218-15223.

(2) Lee, H. C.; **Tian, L.;** Abbas, A.; Kattumenu, R.; Singamaneni, S. Directed assembly of gold nanorods using aligned electrospun polymer nanofibers for highly efficient SERS substrates. *Nanotechnology,* **2011**, 22, 275311.

(1) Lee, H. C; **Tian, L.;** Singamaneni, S. Paper based SERS Swab for Rapid Trace Detection on Real-world Surfaces. ACS *Appl. Mater. Interface,* **2010**, 2, 3429.

Patents

- **Tian, L.,** Namkoong, M. Soft, stretchable composites and techniques for the formation thereof, PCT/US22/18015, 02/25/2022
- **Tian, L.,** Cote, G.; Yin, Z.; Guo, H. Ultrastable Plasmonic Bioink for Printable Point-of-Care Biosensors, PCT/US2021/019374, 09/02/2021
- **Tian, L.,** Mogera, U.; Guo, H. Wearable plasmonic paperfluidics for continuous biofluid analysis, U.S. Provisional Application 63/286,798, 12/07/2021
- McMurray, J.; Branan, K.; Cote, G. L.; **Tian, L.,** Namkoong, M.; Park, S. Multi-Modal Wearable Device for Biomedical Monitoring Including Cuffless Blood Pressure, US Provisional Application No. 63/191,402, 05/21/2021
- Singamaneni, S.; Jiang, Q.; **Tian, L.** Bilayered structures for solar steam generation, US Patent 10,729,988, 2020/8/4
- Singamaneni, S.; **Tian, L.;** Liu, K.; Abbas, A.; Morrissey, J.; Kharasch, E. Plasmonic Biosensors with Built-in Artificial Antibodies, US Patent 10,241,110, 2019/3/26
- Singamaneni, S.; **Tian, L.;** Tadepalli, S.; Morrissey, J.; Kharasch, E. Bioplasmonic calligraphy for label-free biodetection, US Patent App. 15/059,570, 2016/09/08
- Singamaneni, S.; **Tian, L.;** Bio-enabled plasmonic superstructures with built-in and accessible hotspots, US Patent App. 15/096,505, 2016/10/13

Poster/Invited/Non-refereed publications

(39) **Tian, L.** Wearable and Implantable Biosensors for Continuous Monitoring, Women in Engineering Program Faculty Lightning Talk, 2021 (**Invited Talk**)

(38) **Tian, L.** Wearable and Implantable Biosensors for Continuous Monitoring, Real time sensing in Oncology, 2020 Onco-Engineering Virtual Panel (**Invited Talk**)

(37) **Tian, L.** Skin-like electronic wearables for prosthetic control and cognitive monitoring, 2020, Texas A&M Chinese School, College Station, TX (**Invited Talk**)

(36) **Tian, L.** Sensing Technologies for Advanced Health Care, Microsystems & Nanoengineering Summit 2020, Remote Conference (**Invited Talk**)

(35) **Tian, L.** Plasmonic biosensors for resource-limited settings. Session: Translating Innovation

into Pioneering Technologies IV, 2020 TMS Annual Meeting & Exhibition, San Diego, USA (**Invited Talk**)

(34) **Tian, L.** Sensing Technologies for Advanced Health Care. Department of Health and Kinesiology, 2020, Texas A&M University, Texas, USA (**Invited Talk**)

(33) **Tian, L.** Sensing Technologies for Advanced Health Care. Electrical & Computer Engineering Bio-Seminar, 2019, Texas A&M University, Texas, USA (**Invited Talk**)

(32) **Tian, L.** Bioplasmonics and Epidermal Electronics for Advanced Health Care. Biomedical Engineering Department Seminar, 2018, Texas A&M University, Texas, USA (**Invited Talk**)

(31) **Tian, L.** Soft, Skin-mounted Electronics for Health Care. Director's Seminar, 2017, University of Illinois at Urbana-Champaign, Illinois, USA (**Invited Talk**)

(30) Jiang, Q.; **Tian, L.;** Liu, K.; Luan, J.; Naik, R. R.; Singamaneni, S. Ultra-smooth Bacterial Nanocellulose-Based SERS Swab. Materials Research Society-Fall Meeting, 2015, Boston, Massachusetts, USA **(Oral Presentation)**

(29) **Tian, L.;** Liu, K.; Fei, M.; Tadepalli, S.; Cao, S.; Geldmeier, J. A.; Tsukruk, V. V.; Singamaneni, S. Harnessing Spontaneous Folding of Plasmonic Gel for Unclonable Optical Tags. Materials Research Society-Fall Meeting, 2015, Boston, Massachusetts, USA **(Oral Presentation)**

(28) **Tian, L.;** Liu, K.; Luan, J.; Jiang, Q.; Tadepalli, S.; Gupta, K. M.; Naik, R. R.; Singamaneni, S. Plasmonic Aerogels from Bacterial Nanocellulose. Materials Research Society-Fall Meeting, 2015, Boston, Massachusetts, USA **(Oral Presentation)**

(27) **Tian, L.;** Nergiz, S. Z. Tadepalli, S.; Fei, M.; Morrissey, J. J.; Gandra, N.; Kharasch, E. D.; Singamaneni, S. Multifunctional Biotemplated Gold Superstructures for Image-Guided Photothermal Therapy. Materials Research Society-Fall Meeting, 2014, Boston, Massachusetts, USA **(Oral Presentation)**

(26) **Tian, L.** Plasmonic Nanostructures for Advanced Bioimaging. Bioinspired Engineering and Biomechanics Center, Xi'an JiaoTong University, 2014, Xi'an, Shaanxi, China **(Invited Talk)**

(25) **Tian, L.** Artificial Antibodies for Label-Free Plasmonic Biosensing. Materials Research Society-Fall Meeting, 2013, Boston, Massachusetts, USA **(Graduate Students Award Talk)**

(24) **Tian, L.;** Liu, K.; Morrissey, J. J.; Gandra, N.; Kharasch, E. D.; Singamaneni, S. Artificial Antibodies for Label-Free Plasmonic Biosensing. Materials Research Society-Fall Meeting, 2013, Boston, Massachusetts, USA **(Oral Presentation)**

(23) **Tian, L.;** Tadepalli, S.; Park, S. H.; Liu, K.; Naik, R. R.; Singamaneni, S. Bioplasmonic Calligraphy for Multiplexed Label-free Biodetection. Materials Research Society-Fall Meeting, 2013, Boston, Massachusetts, USA **(Oral Presentation)**

(22) Abbas, A.; **Tian, L.;** Brimer, A.; d'Avignon, D. A.; Hameed,Â A. S.; Vittal, J. J.; Singamaneni, S. From Single Molecules to Macroscale structures: Growing by Vesicle Walk and Fusion. Materials Research Society-Fall Meeting, 2013, Boston, Massachusetts, USA **(Poster)**

(21) Abbas, A.; Kattumenu, R.; **Tian L.;** Singamaneni, S. Molecular Linker-Mediated Self-assembly of Gold Nanoparticles: Understanding and Controlling the Dynamics. *Langmuir*, **2013**, 29, 56. Materials Research Society-Fall Meeting, 2013, Boston, Massachusetts, USA **(Poster)**

(20) **Tian, L.;** Gandra, N.; Singamaneni, S. Remotely Monitoring Payload Release from Nanocarriers using Surface Enhanced Raman Scattering. Materials Research Society-Fall Meeting, 2013, Boston, Massachusetts, USA **(Best Poster Nominee)**

(19) **Tian, L.;** Gandra, N.; Portz, C.; Tang, R.; Xu, B.; Achilefu, S.; Singamaneni, S. Distance-Dependent Plasmon Enhanced Near-infrared Fluorescence, 2013, Midwest Regional Meeting, Springfield, MO, USA **(Oral Presentation)**

(18) **Tian, L.;** Gandra, N.; Singamaneni, S. Monitoring Controlled Release of Payload from Gold Nanocages using Surface Enhanced Raman Scattering (SERS), 2013, Midwest Regional Meeting, Springfield, MO, USA **(Oral Presentation)**

(17) **Tian, L.;** Gandra, N.; Singamaneni, S. Remotely Monitoring Payload Release from Nanocarriers using Surface Enhanced Raman Scattering. St. Louis Institute of Nanoscience & Nanomedicine (SLINN), 2013, USA **(Poster)**

(16) **Tian, L.** Artificial Antibodies for Label-Free Plasmonic Biosensing, St. Louis Institute of Nanoscience & Nanomedicine (SLINN), 2013, USA **(Elevator speech)**

(15) **Tian, L.;** Abbas, A.; Morrissey, J.; Kharasch, E. D.; Singamaneni, S. Hot-spot Localized Artificial Antibodies for Label-free Plasmonic Biosensing. 18th WU Annual Graduate Research Symposium, 2013. St. Louis, USA **(Best Poster Nominee)**

(14) **Tian, L.;** Kattumenu, R.; Gandra, N.; Singamaneni, S. Paper Based Localized Surface Plasmon Resonance Biosensor. Materials Research Society-Fall Meeting, 2012, Boston, Massachusetts, USA (**Oral Presentation)**

(13) Abbas, A.; **Tian, L.;** Morrissey, J.; Kharasch, E. D.; Singamaneni, S. Plasmonic Biosensor Based on Synthetic Receptors. Materials Research Society-Fall Meeting, 2012, Boston,

Massachusetts, USA **(Poster)**

(12) **Tian, L.;** Kattumenu, R.; Fei, M.; Abbas, A.; Gandra, N.; Singamaneni, S. Distance-dependent Refractive Index Sensitivity of Gold Nanorods. Materials Research Society-Fall Meeting, 2012, Boston, Massachusetts, USA **(Poster)**

(11) **Tian, L.;** Fei, M.; Kattumenu, R.; Abbas A.; Singamaneni. S. Monitoring the Phase Transition in Nanoscale Polymer Films using Plasmonic Nanostructures. Materials Research Society-Fall Meeting, 2012, Boston, Massachusetts, USA **(Poster)**

(10) Gandra, N.; Abbas, A.; **Tian, L.;** Singamaneni, S. Plasmonic Core-satellites Structures through Hierarchical Self-Assembly of Gold Nanostructures. Materials Research Society-Fall Meeting, 2012, Boston, Massachusetts, USA **(Oral Presentation)**

(9) Nergiz, S. Z.; Gandra, N.; **Tian, L.;** Singamaneni, S. Biomimetic Plasmonic Paper-based SERS substratefor Extremely Selective and Sensitive Explosive (TNT) Detection in Chemically Complex Media. Materials Research Society-Fall Meeting, 2012, Boston, Massachusetts, USA **(Poster)**

(8) Kattumenu, R.; Lee, C. H.; **Tian, L.**; McConney M. E.; Singamaneni, S. Solution-Processed 3D Plasmonic Hybrids for Highly Efficient SERS substrates. Materials Research Society-Fall Meeting, 2011, Boston, Massachusetts, USA **(Oral Presentation)**

(7) Lee, C. H.; **Tian, L.**; Kattumenu, R.; Abbas, A.; Singamaneni, S. Directed assembly of gold nanorods using aligned polymer nanofibers. Materials Research Society-Fall Meeting, 2011, Boston, Massachusetts, USA **(Poster)**

(6) **Tian, L.**; Kattumenu, R.; Singamaneni, S. Plasmonic Paper as a Novel Biosensing Platform. Materials Research Society-Fall Meeting, 2011, Boston, Massachusetts, USA **(Oral Presentation)**

(5) Fei, M.; **Tian, L.**; Kattumenu, R.; Singamaneni, S. Probing the Swelling Behavior of Ultrathin Polymer Films Using Plasmonic Transducers. Materials Research Society-Fall Meeting, 2011, Boston, Massachusetts, USA **(Poster)**

(4) Abbas, A.; **Tian, L.**; Chang H. L.; Kattumenu R.; Singamaneni, S. Real-Time SERS Monitoring of Plasmonic Hot-Spots in Self-Assembled Gold Nanocrystals. Materials Research Society Conference- Fall Meeting, 2011, Boston, Massachusetts, USA **(Oral Presentation)**

(3) Abbas, A.; **Tian, L.**; Chang H. L.; Kattumenu R.; Singamaneni, S. Rapid Self-Assembly of Gold Nanostructures: Controlled Termination of the Growth Reaction. Materials Research

Society- Fall Meeting, 2011, Boston, Massachusetts, USA **(Poster)**

(2) Singamaneni, S.; Lee, C. H.; **Tian, L**. Paper based Flexible and Conformal SERS Substrate for Rapid Trace Detection on Real-world Surfaces. 2011 APS March meeting. **(Poster)**

(1) Lee, C. H.; **Tian, L**.; Singamaneni, S. Paper-Based SERS Swab for Rapid Trace Detection on Real-World Surfaces. 16th WU Annual Graduate Research Symposium, 2011. St. Louis, USA **(Poster)**

TEACHING AND MENTORING EXPERIENCE

Teaching

- BMEN 361 Biosolid Mechanics, 2019 spring semester-present

Mentoring

- Postdoctoral researchers

Dr. Umesha Mogera, 2020-2021

Dr. Ze Yin, 2019-2021

- Graduate students

Mr. Myeong Namkoong, 2019-present

Mr. Heng Guo, 2019-present

Mr. Md. Saifur Rahman, 2021-present

Ms. Adiba Halim, 2021-present

Mr. Daniel Wang, 2020-2021

Mr. Yixuan Li, 2018-2020

- Undergraduate students

Huey Hoang, Cody Carlisle, Brittany Tran, Ricky Lee, Anton Pavlov, Jennifer Lee, 2021-present

Tan Nguyen, Cassandra Pfeil, Shugran Sabbahin, 2021

Sophia Hager (REU TAMU), 2021 Summer

Joshua Chiu, Ivanna Arizpe, Kendahl Lyle, 2019

Elizabeth Salcedo (REU TAMU), 2019 summer

OUTREACH ACTIVITIES

- Invited talk, Skin-like electronic wearables for prosthetic control and cognitive monitoring, Texas A&M Chinese School, College Station, TX, 2020

- Involved in Research Experiences for K-12 Teachers (RET) program through the Precise Advanced Technologies and Health Systems for Underserved Populations (PATHS-UP) Engineering Research Center (ERC) funded by NSF, 2020, 2021