**Dongmao Zhang**

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**EDUCTION:**

1987: BS. Chemistry, Wuhan University
2002: Ph.D. Department of Chemistry, Purdue University, West Lafayette, IN.
Dissertation Title: "Multivariate techniques for processing Raman Spectral Data"
**Advisor:** Prof. Dor Ben-Amotz.

**ACADEMIC APPOINTMENTS:**

2019- Professor, Department of Chemistry, Mississippi State University, USA
2014-2019 Associate Professor, Department of Chemistry, Mississippi State University
2008-2014 Assistant Professor, Department of Chemistry, Mississippi State University
2006- 2008 Research Scientist, Laboratory for Nanophotonics, Rice University, Houston. TX.
2004 -2005 Research Scientist, The Bindley Bioscience Center, Purdue University
2003- 2004 Assistant Research Scientist, Department of Chemistry, Purdue University.
2002- 2003 Research Associate, Department of Chemistry, Purdue University,

**NON-ACADEMIC POSITION**

2005- 2006 Analytical Chemist. GE Plastics, Washington, WV

**PROFESSIONAL AFFILIATIONS:**

The American Chemical Society

**HONORS AND AWARDS**

- Chemist of the Year Award (**2017**), Mississippi Chapter of American Chemical Society.
- Top ten most prolific authors in the recent five years for the Journal of the Physical Chemistry C by American Chemical Society (**2017**)
- Dean's Eminent Scholar Award **(2015)** College of Arts & Sciences at MSU
- Faculty Research Award (**2013)** Mississippi State University.
- Faculty Research Award (**2013**) College of Arts & Sciences at MSU.
- NSF CAREER Award (**2012)**.
- State Pride Award. Mississippi State University (**2012**)
- Mississippi State University A&S Researcher of the Month (December **2011**)
- NRC NIH/NIST Joint Postdoctoral Fellowship (**2006**), Award declined for position at Prof. Halas's group at Rice).
- GE Plastic Quarterly Leadership Award –Expertise (First Quarter **2006**)
- GE Plastic Quarterly Leadership Award –Imagination (Third Quarter **2006**)

**MEMBERSHIPS**

Member of the American Chemical Society

**SYNERGISTIC ACTIVITIES:**

- Serve as a peer reviewer for the following journals:
  *Nano Letters; Journal of American Chemical Society; ACS catalysis; Small; Journal of Physical Chemistry Letter; Langmuir, Journal of Physical Chemistry B/C; Analytical Chemistry; Journal of Environmental Science and Technology, ACS Applied Material and Interfaces; Analyst; Analytical and Bioanalytical Chemistry; Analytical Biochemistry; Journal of Raman Spectroscopy; Journal of Nanoparticle Research; Journal of Biomedical Optics; Applied Spectroscopy.*
- NSF Panelist and Ad Hoc Reviewer; Ad Hoc reviewer for Polish Science Foundation.

**PEER-REVIEWED PUPLICATIONS**

***Publications at MSU since Aug. 2008 (Total 64)***

1. Peng W.; Athukorale, S.; Hu, J.; Cui, X.; and Zhang, D* "Discrete-sample kinetic spectroscopic quantification of chemicals using stepwise chromogenic and fluorogenic reactions." **Under review.**
2. Zhang, W.; Zilevu, D.; Creutz, S.; and Zhang, D.* "Quantification of the optical properties of Perovskite Nanocrystals using Combination of Polarized Resonance Synchronous and Polarized Anti-Stokes, On-Resonance, and Stokes-Shifted Spectroscopy" J**. Phys. Chem. C. 2020. 124, 20388-20397** https://pubs.acs.org/doi/pdf/10.1021/acs.jpcc.0c05064
3. Xu, X.J.; Yuan, Y.; Liu, M.; Zou, S.; Chen, O.; and Zhang, D.* "Quantification of the Photon Absorption, Scattering, and On-resonance Emission Properties of CdSe/CdS Core/Shell Quantum Dots: Effect of Shell Geometry and Volumes." **Analytical Chemistry, 2020**, 92, 5346. https://pubs.acs.org/doi/10.1021/acs.analchem.0c00016
4. Yang, H.; Zhang, W.; Athukorale, S.; Li, Z.; Zou, S.; Donnadieu, B.; Wang, Z. *; Zhang, D.*. "Dithiosulfene Adsorption and Reaction on Gold Nanoparticles in Water". **J. Phys. Chem. C. 2020,** 124, 686. https://pubs.acs.org/doi/10.1021/acs.jpcc.9b09828
5. Xu, J.; Yuan, Guangle Niu.;Ben Zhong Tang, and Zhang, D.*(**2019**) "Polarized Resonance Synchronous Spectroscopy as a Powerful Tool for Studying the Kinetics and Optical Properties of Aggregation-Induced Emission". **J. Mater. Chem. C**. 7. 12086. **Front Cover, 2019 Hot paper**. https://pubs.rsc.org/en/content/articlehtml/2019/tc/c9tc04106k
6. Xu, J.; Yuan, Y.; Zou, S.; Chen O. and Zhang, D.*(**2019**) "A Divide-and-Conquer Method for Quantification of the Optical Properties of Fluorescent Nanoparticles in Solutions." **Anal. Chem**. https://pubs.acs.org/doi/abs/10.1021/acs.analchem.9b01803
7. Wang, H.; Zhu, K.; Yan, L.; Zhang, Y.; Gong, C.; Guo, J.; Zhang, J.; Zhang, D.* and Zhang, J.* (**2019**) "Efficient and Scalable High-Quality Granphene Nanodot Fabrication through Confined Lattice Plane Electrochemical Exfoliation." **Chem. Comm. 55**, 5805. https://pubs.rsc.org/en/content/articlepdf/2019/cc/c9cc02889g
8. Xu, J.; Liu, M.; Athukorale, S.; Zou, S.; and Zhang, D.*(**2019**) Linear Extrapolation of the Analyte-Specific Light Scattering and Fluorescence Depolarization in Turbid Samples. **ACS Omega,** 4, 4739. https://pubs.acs.org/doi/10.1021/acsomega.8b03354
9. Athukorale, S.; Leng, X.; Xu, J.; Perera, Y., Fitzkee, N.; and Zhang, D.*(**2019)** "Surface Plasmon Resonance, Formation Mechanism, and Surface Enhanced Raman Spectroscopy of $Ag^{+}$-Stained Gold Nanoparticles" **Frontiers in Chemistry**. https://www.frontiersin.org/articles/10.3389/fchem.2019.00027/full
10. Vithanage, B.; Xu, J.; and Zhang, D.*(**2018**). Optical Properties and Kinetics: New Insights to the Porphyrin Assembly and Disassembly by Polarized Resonance Synchronous Spectroscopy. **Journal of Physical Chemistry B.** 122, 8429. https://pubs.acs.org/doi/10.1021/acs.jpcb.8b05965
11. Lakmak, H; Xu, J.; Xu, X.; Ahmed, B.; Fong, C.; Szalda, D.; Szalda, D.; Ramig, K.; Sygula, A.; Wester, C.; Zhang, D.; and Cui. X.*****(**2018**). Synthesis of C-unsubstituted 1,2-diazetidines and their ring-opening reactions via selective N-N bond cleavage. **Organic Chemistry**, 83, 9497. https://pubs.acs.org/doi/10.1021/acs.joc.8b01223
12. Xu, J.; Vithanage, B.; and Zhang, D.*(**2018**). "Light scattering and absorption differs drastically in their inner filter effects on fluorescence, resonance synchronous, and polarized resonance synchronous spectroscopic measurements". **Analyst**. 143, 3382. http://pubs.rsc.org/en/content/articlepdf/2018/an/c8an00790j
13. Xu, J.; Hu, J.; and Zhang, D* (**2018**) "Quantification of the material fluorescence and light scattering cross-sections and depolarization using ratiometric bandwidth-varied polarized resonance synchronous spectroscopy". **Analytical Chemistry,** 90, 7406. https://pubs.acs.org/doi/pdf/10.1021/acs.analchem.8b00847

14. Athukorale, S.; De Silva, M. LaCour, A.; Perera, G .; and Zhang, D.* (**2018**). "NaHS Induces Complete Nondestructive Ligand Displacement from Aggregated Gold Nanoparticles", **Journal of Physical Chemistry C.** 122, 2137-2144. http://pubs.acs.org/doi/abs/10.1021/acs.jpcc.7b10069
15. Xu J.; Siriwardana K.; Y. Zhou.; S. Zou,* and Zhang, D.*(**2018**) "Quantification of the Gold Nanoparticle Photon Extinction, Scattering, an Absorption Cross-section and Scattering Depolarization Spectra as Functions of Nanoparticle Geometry, Solvent Compositions, Ligand Functionalization, and Nanoparticle Aggregations" **Analytical Chemistry**, 90, 785-793. http://pubs.acs.org/doi/abs/10.1021/acs.analchem.7b03227
16. Perera G.; Athukorale S.; LaCour A.; Perez, F.; Gadogbe, M.; and Zhang, D.*(**2017**) "Facile Displacement of Citrate Residues from Gold Nanoparticles". **Journal of Colloid and Interface Science,** 511, 335-343. http://www.sciencedirect.com/science/article/pii/S0021979717311700
17. Athukorale S.; Y. Zhou.; S. Zou, and Zhang, D.*(**2017**) "*Determination of the Liquid Light Scattering Cross-sections and Depolarization Spectra using Polarized Resonance Synchronous Spectroscopy*". **Analytical Chemistry**, 89(23), 12705. http://pubs.acs.org/doi/10.1021/acs.analchem.7b02721
18. Perera G.; Athukorale S.; Perez, F.; Gadogbe, M.; and Zhang, D.*(**2017**) "*Reactive $Ag^+$ Adsorption onto Gold*" **Journal of Physical Chemistry C.** 121, 22487 http://pubs.acs.org/doi/abs/10.1021/acs.jpcc.7b07077
19. Siriwardana K.; Vithanage, B.; Y. S. Zou, and Zhang, D.*(**2017**). "*Quantification of the Depolarizatio and Anistropy of Fluorophore Stokes-Shifted Fluorescence, On-Resonance Fluorescence, and Rayleigh-Scattering*". **Analytical Chemistry**, 89, 6686 http://pubs.acs.org/doi/pdf/10.1021/acs.analchem.7b00907
20. Perera G.; Nettles C.; Perez, F.; and Zhang, D.* (**2016**) "*Counter-ion Effects on Electrolyte Binding to Nanoparticles*" **Journal of Physical Chemistry C**. 120, 23604 http://pubs.acs.org/doi/pdf/10.1021/acs.jpcc.6b07885
21. Siriwardana K.; Nettles C.; Vithanage, B.; Y. Zhou.; S. Zou, and Zhang, D.*(**2016**). "*On-resonance Fluorescence, Resonance Rayleigh Scattering, and Ratiometric Resonance Synchronous Spectroscopy of Molecular- and Quantum Dot-Fluorophores*" **Analytical Chemistry**, 88, 9199, http://pubs.acs.org/doi/abs/10.1021/acs.analchem.6b02420
22. Perera G.; Gadogbe M.; Alahakoon, S.; Zhou Y.; Zou, S.; Perze, F.; and Zhang, D.* (**2016**) "*Ion Pairing as the Main Pathway for Reducing Electrostatic Repulsion among Organothiolate Self-assembled on Gold Nanoparticles in Water*." **Journal of Physical Chemistry C,** 120, 19878, http://pubs.acs.org/doi/abs/10.1021/acs.jpcc.6b07466
23. Nettles C.B.; Zhou Y.; Zou S.; and Zhang, D.* (**2016**) "*UV-vis Ratiometric Resonance Synchronous Spectroscopy for Determination of Molecular and Nanoparticle Optical Cross-sections*". **Analytical Chemistry,** *88*, 2891-2898 http://pubs.acs.org/doi/abs/10.1021/acs.analchem.5b04722 .
24. Suwandaratne N.; Hu, J.; Siriwardana, K.; Gadogbe, M.; and Zhang, D.*(**2016**). "*Evaluation of Thiol Raman Activities and $pK_a$ Values using Internally-referenced Raman-based pH Titration*." **Analytical Chemistry**. 88, 3624-3631 http://pubs.acs.org/doi/abs/10.1021/acs.analchem.5b04241
25. Gadogbe M.; Zhou Y.; Zou, S.; and Zhang, D.* (**2016**) "*Rigid single carbon-carbon bond that doesn't rotate in water*". **Journal of Physical Chemistry C,** 120, 2418-2422 http://pubs.acs.org/doi/pdf/10.1021/acs.jpcb.5b12166
26. Siriwardana, K.; LaCour, A.; and Zhang, D.* (**2016**). *"Critical Sequence Dependence in Multicomponent Ligand Binding to Gold Nanoparticles"* **Journal of Physical Chemistry C.** 120, 6900-6905. http://pubs.acs.org/doi/abs/10.1021/acs.jpcc.6b01202
27. Sameera, K, Zhang, D.* (**2015**). "*Undergraduate student laboratory experimental modules for probing nanoparticle interfacial Interactions",* **Journal of Chemical Education.** *92*, 1924–1927 http://pubs.acs.org/doi/abs/10.1021/acs.jchemed.5b00535

28. Siriwardana K.; Suwandarate N.; Perera G.; Collier W.; Perez, F.; and Zhang, D.* (**2015**). "*Contradictory Dual Effects: Organothiol induced both silver nanoparticle disintegration and formation under ambient conditions*" **Journal of Physical Chemistry C,** 119, 20975-20984. http://pubs.acs.org/doi/abs/10.1021/acs.jpcc.5b05965

29. Siriwardana K.; Wang, A.; Gadogbe, M.; Collier, W.; Fitzkee, N.; and Zhang. D* (**2015**). "*Probing the effect of cysteine residue on protein interactions with silver nanoparticles*". **Journal of Physical Chemistry C**. *119*, 2910–2916 http://pubs.acs.org/doi/abs/10.1021/jp512440z

30. Perea, G. S.; LaCour A.; Hu, S.; Chen, M.; Zou, S.; Pittman, C. U. and Zhang, D* (**2015**). *"Iodide-induced organothiol desorption and photochemical reaction, gold nanoparticle (AuNP) fusion, and SERS signal reduction in organothiol-containing AuNP aggregates"* ***Journal of Physical Chemistry C***. 119, 4261-4267. http://pubs.acs.org/doi/full/10.1021/jp512168z

31. Gadogbe, M.; Chen, M.; Zhang, D.*(**2015**). "*Can para-aryl-dithiols cross-link two plasmonic noble nanoparticles as monolayer dithiolate spacers?*" ***Journal of Physical Chemistry C***, 119, 6626-6633. http://pubs.acs.org/doi/abs/10.1021/acs.jpcc.5b00293

32. Zhang, D*.; Nettles C. (**2015**). "*A generalized model on the effects of nanoparticles on fluorophore fluorescence in solution"* ***Journal of Physical Chemistry C***, 119, 7941-7948. http://pubs.acs.org/doi/abs/10.1021/acs.jpcc.5b00597

33. Nettles, C. B.; Hu, J.; and Zhang, D*. (**2015**). "*Using Water Raman Intensity to determine the effective excitation and emission path lengths of fluorophotometers for correcting fluorescence inner filter effect*" **Analytical Chemistry**, 87, 4917. http://pubs.acs.org/doi/abs/10.1021/acs.analchem.5b00513

34. Shi, Q.S.*; Che. W.; Liang, K.; Xia, C.; and Zhang, D. (**2015**). "*Phase transitions of carbon-encapsulated iron oxide nanoparticles during the carbonization of cellulose at various pyrolysis temperatures*" ***Journal of Analytical and Applied Pyrolysis***, 115, 1-6. http://www.sciencedirect.com/science/article/pii/S0165237015300437

35. Gadogbe, M. Zhou, Y.; Alakakoon, S. H,; Perera, G.; Zou, S.; Pittman, C. U.; and Zhang, D.* (**2015**). "*Structures and Conformations of Alkanedithiols on Gold and Silver Nanoparticles in Water*" ***Journal of Physical Chemistry C***, 119, 18414-18421. http://pubs.acs.org/doi/abs/10.1021/acs.jpcc.5b05514

36. Perera, G.; Nettles, C.; Zhou, Y.; Zou, S.; Hollis, K.; and Zhang, D. .* (**2015**). "*Direct Observation of Ion Pairing at the Liquid/Solid Interfaces by Surface Enhanced Raman Spectroscopy*" ***Langmuir,*** 31, 8998-9005. http://pubs.acs.org/doi/pdf/10.1021/acs.langmuir.5b01903.

37. Che, W.; Shi, S.Q.*; Zhang, D.; Jiang, D.; Barnes, M. H. (**2014**). "*Structure of Cellulosic Fiber-Derived Carbon Catalyzed by Iron Oxide Nanoparticles*". **Wood and Fiber Science**. 46, 237-246.

38. Wang, A.; Vangala K.; Vo, T.; Zhang, D.; and Fitzkee, N.* (**2014**). "*A Three-step Model for Protein-Gold Nanoparticle Adsorption*". **Journal of Physical Chemistry C**. 118, 8134-8142. http://pubs.acs.org/doi/abs/10.1021/jp411543y

39. Perera, G.; Ansar, S.; Hu, S.; Chen, M. Zou, S.; Pittaman, C.; and Zhang, D.* (**2014**). "*Ligand Desorption and Desulfurization on Silver Nanoparticles using Sodium Borohydride in Water.*" **Journal of Physical Chemistry C**. 118, 10509-10518. http://pubs.acs.org/doi/abs/10.1021/jp5025526

40. Siriwardana, K.; Gadogbe, M.; Ansar, S.; Vasquez, E.; Collier, W.; Zou, S.; Walter, K.; and Zhang, D* (**2014**). "*Ligand Adsorption and Exchange on Pegylated Gold Nanoparticles*". **Journal of Physical Chemistry C**. 118, 11111-11119. http://pubs.acs.org/doi/abs/10.1021/jp501391x

41. Gadogbe, M.; Ansar, S.; Chu, I.; Zou, S.; and Zhang, D.* (**2014**). "*Comparative Study of Gold and Silver Nanoparticle Self-assembly onto Thiophene Oil".* **Langmuir,** 30, 11520-11527. http://pubs.acs.org/doi/abs/10.1021/la502574p

42. Ameer, F.; Zhou, F, Zou, S.; and Zhang, D*(**2014**). "*Wavelength-dependent Correlations between UV-Vis Intensities and SERS Enhancement Factors of Aggregated Gold and Silver Nanoparticles"*. **Journal of Physical Chemistry C**. 118, 22234-22242. http://pubs.acs.org/doi/abs/10.1021/jp5073395

43. Ansar, S.; Gadogbe, M.; Siriwardana, K.; Howe, J.; Dogel, S.; Hosseinkhannazer, H.; Collier, W.; Rodriguez, J.; Zou, S.; and Zhang, D* (**2014**). "*Dispersion Stability, Ligand Structure and Conformation, and SERS Activities of 1-Alkanethiol Functionalized Gold and Silver Nanoparticles.* ***Journal of Physical Chemistry C.*** 118, 24925-24934. http://pubs.acs.org/doi/abs/10.1021/jp507142v

44. Gadogbe, M.; Ansar, S.M.He, G.; Collier, W.E.; Rodriguez, J.; Liu, D.; Chu, I.; Zhang, D.*(**2013**). "*Determination of Colloidal Gold Nanoparticle Surface Areas, Concentrations, and Diameters through Quantitative Ligand Adsorption*". **Analytical and Bioanalytical Chemistry,** 405, 413-422. https://link.springer.com/article/10.1007/s00216-012-6489-2

45. Ameer, F.; Ansar, S.M.; Wang, H.; Zou, S.; Zhang, D.* **(2013**). "*Robust and Reproducible Quantification of SERS Enhancement Factors using a Combination of Time-Resolved Raman Spectroscopy and Solvent Internal Reference Method*." **Journal of Physical Chemistry C.** 117, 3483-3488. http://pubs.acs.org/doi/abs/10.1021/jp311752m

46. Vangala, K.; Siriwardana, K.; Vasquez, E.; Xin Y.; Pittman, C.U; Zhang, D.* (**2013**). "*Simultaneous and Sequential Protein and Organothiol Interactions with Gold Nanoparticles".* **Journal of Physical Chemistry C.** 117, 1366-1374. http://pubs.acs.org/doi/abs/10.1021/jp310085u

47. Ansar, S. M; Ameer, F. S.; Hu, W.; Zou, S.; Pittman, C. U.; Zhang, D*( **2013**), "*Removal of Molecular Adsorbates on Gold Nanoparticles Using Sodium Borohydride in Water*", **Nano Letters**, 13(3), 1226-1229 http://pubs.acs.org/doi/abs/10.1021/nl304703w

48. Ansar, S.; Perera, G.; Jiang, D.; Holler R.; Pittman, C.; and Zhang, D*. (**2013**). "*Organothiols Self-Assembled Onto Gold: Evidence for Deprotonation of the Sulfur-Bound Hydrogen and Charge-Transfer from Thiolate*" **Journal of Physical Chemistry C**, 117, 8793-8798 http://pubs.acs.org/doi/abs/10.1021/jp312836q

49. Ansar, S. M.; Perera, G.; Ameer, F. S.; Zou, S.; Pittman, C. U.; Zhang, D* (**2013**)., "*Desulfurization of Mercaptobenzimidazole and Thioguanine on Gold Nanoparticles using Sodium Borohydride in Water at Room Temperature"*, **Journal of Physical Chemistry C**,117, 13722-13729 http://pubs.acs.org/doi/abs/10.1021/jp403932w

50. Siriwardana, K.; Wang, A.; Vangala, K.; Fitzkee, N.; Zhang, D.*(**2013**). "*Probing the Effects of Cysteine Residues on Protein Adsorption onto Gold Nanoparticles using Wild-type and Mutated GB3 Proteins*". **Langmuir**. 29, 10990-10996. http://pubs.acs.org/doi/abs/10.1021/la402239h

51. Ansar, S.M.; Perera, G.; Salomons, G.; Pittman, C.U.; Zou, S.; Zhang, D.*(**2013**). "*Mechanistic Studies of Reactive Continuous Organothiol Interaction with Silver Nanoparticles"*. **Journal of Physical Chemistry C**. 117, 27146-27154. http://pubs.acs.org/doi/abs/10.1021/jp4090102

52. Ameer, F.; Collier, W.; Zhang, D.*(**2013**). "*Quantification of Resonance Raman Enhancement Factors for Rhodamine 6G (R6G) in Water and Adsorbed onto Gold and Silver Nanoparticles*". **Journal of Physical Chemistry C**. 117, 27096-27104. http://pubs.acs.org/doi/abs/10.1021/jp4105932

53. Vangala K.; Ameer F. Salomons, G. Le, V.; Lewis, E.A; Liu D.; Yu, L.; Zhang. D*.(**2012**). "*Studying Protein and Gold Nanoparticle Interaction Using Organothiols as Molecular Probes*", **Journal of Physical Chemistry C.**116, 3645-3652. http://pubs.acs.org/doi/abs/10.1021/jp2107318

54. Ansar, S.; Li, X.; Zou, S.; Zhang, D* (**2012**) "*Quantitative Comparison of Raman Activities, SERS Activities, and SERS Enhancement Factors of Organothiols: Implication to Chemical Enhancement*". **Journal of Physical Chemistry Letter.** 3, 560-565. http://pubs.acs.org/doi/abs/10.1021/jz2016439

55. Zhang, D*; Shi, S.; Pittman,C.U.; Moore, K.L. Howie, J.Y (**2012**). "*A Versatile and Biomass Synthesis of Iron-based Nanoparticles Supported on Carbon Matrix with High Iron Content and Tunable Reactivity".* **Journal of Nanoparticle Research**.14, 1023-1034, http://link.springer.com/article/10.1007%2Fs11051-012-1023-1
56. Ameer, F.; Ansar, S.M.; Wang, H.; Zou, S.; Zhang, D.* (**2012**). "*Inner filter effect on surface enhanced Raman spectroscopic measurements".* **Analytical Chemistry**, 84, 8437-8441. **Editors' Highlight**. http://pubs.acs.org/doi/abs/10.1021/ac302073f
57. Zhang, D;*Vangala, K.; Li S.; Yanney., M.; Xia, H.; Zou, S.; Sygula, A. (**2011**) "*Acid cleavable surface enhanced raman tagging for protein detection*." **Analyst,** 136, 520-526. http://pubs.rsc.org/en/content/articlepdf/2011/AN/C0AN00708K
58. Ansar, S.M.; Haputhanthri, R.; Edmonds, B.; Liu, D.; Yu, L.; Sygula, A.; Zhang, D*. (**2011**) "*Determination of the Binding Affinity, Packing, and Conformation of Thiolate and Thione Ligands on Gold Nanoparticles*." **Journal of Physical Chemistry C.** 115, 653-660. http://pubs.acs.org/doi/abs/10.1021/jp110240y
59. Zhang, D*;Ansar, S.M. (**2010**) "*Ratiometric Surface Enhanced Raman Quantification of Ligand Adsorption onto a Gold Nanoparticle*". **Analytical Chemistry**. 82(13), 5910-5914. http://pubs.acs.org/doi/abs/10.1021/ac1010124
60. Zhang, D.*;Ansar,S.M.; Vangala, K. (**2010**) "*Protein adsorption drastically reduces SERS signal of dye molecule*", **Journal of Raman Spectroscopy**, 41(9). 952-957. http://onlinelibrary.wiley.com/doi/10.1002/jrs.2548/epdf
61. Zhang, D.*; Vangala, K.; Jiang, D.; Pechan, T..;Zou, S..; (**2010**) "*Raman Spectroscopy of Fluorescein Isothiocyanate Labeled Protein*". **Applied Spectroscopy**.64, 1078-1085. http://www.ncbi.nlm.nih.gov/pubmed/20925976
62. Zhang, D.*; Haputhanthri, R.; Ansar, S.M.; Vangala, K.; De Silva, H.I.; Sygula, A.; Saebo, S.; Pittman, C.U., Jr. (**2010**) "*Ultrasensitive Surface Enhanced Raman Detection of Malondialdehyde*", **Analytical and Bioanalytical Chemistry.** 398, 3193-3201. http://link.springer.com/article/10.1007%2Fs00216-010-4225-3
63. Vangala, K.; Yanney, M.; Hsiao, C.T; Wu, W.W.; Shen, R.F.; Zou, S.; Sygula, A.; Zhang, D*. (**2010**) "*Sensitive Carbohydrate Detection Using Surface Enhanced Raman Tagging*."**Analytical Chemistry**, 82(24), 10164-10171 http://pubs.acs.org/doi/abs/10.1021/ac102284x
64. Zhang, D*.; Jiang, D.; Yanney, M.; Zou, S.; Sygula, A.;(**2009**) "*Ratiometric Raman Spectroscopy for quantification of protein oxidation damage*". **Analytical Biochemistry**, 391(2), 121-126. http://www.sciencedirect.com/science/article/pii/S0003269709003340

**Publications prior to MSU**

65. Zhang, D.; Neumann, O.; Wang, H.; Yuwono, V.; Barhoumi, A.; Perham, M.; Hartgerink, J.; Wittung-Stafshede, P.; Halas, N. J.* (**2009**) Gold nanoparticles can induce the formation of protein-based aggregates at physiological pH" *Nanoletter,* 9(2), 666-671.
66. Kundu, J.; Neumann, O.; Janesko, B., Zhang, D.; Lal S.; Barhoumi, A.; Scuseria, G. Halas, N.* (**2009**), "Adenine- and adenosine monophosphate (AMP)-gold binding interactions studies by surface enhanced Raman and infrared spectroscopies" Journal of Physical Chemistry C. 113(32), 14390-14397
67. Neumann, O,;Zhang,D.; Tam, F.; Lal, S.; Wittung-Stafshede, P. Halas, N.* (**2009**) "Direct Optical Detection of Aptamer Conformational Changes Induced by Target Molecules." *Analytical Chemistry,* 81 (24), 10002-10006.
68. Barhoumi, A.; Zhang, D.; Tam, F.; Halas, N. J.* (**2008**) Surface-Enhanced Raman Spectroscopy of DNA.*Journal of the American Chemical Society* , 130, 5523-5529.
69. Wei, F.; Zhang, D.; Halas, N. J.*; Hartgerink, J. D.* (**2008**) Aromatic Amino Acids Providing Characteristic Motifs in the Raman and SERS Spectroscopy of Peptides.*Journal of Physical Chemistry B* ,112, 9158-9164.

70. Barhoumi, A.; Zhang, D.; Halas, N. J.* (**2008**) Correlation of Molecular Orientation and Packing Density in a dsDNA Self-Assembled Monolayer Observable with Surface-Enhanced Raman Spectroscopy.*Journal of the American Chemical Society.*130, 14040-14041.
71. Xie, Y.; Zhang, D.; Ben-Amotz, D.* (**2008)** Protein-ligand binding detected using ultrafiltration Raman difference spectroscopy. *Analytical Biochemistry*, 373(1), 154-160
72. Ortiz, C.; Zhang, D.*;Ribbe, A.E.; Xie, Y.; Ben-Amotz, D*. (**2007**), Analysis of insulin amyloid fibrils by Raman spectroscopy. *Biophysical Chemistry* 128(2-3), 150-155.
73. Ortiz, Corasi; Zhang, D.*; Xie, Yong; Ribbe, A.E.; Ben-Amotz, D.*.**(2006)** "Validation of the drop coating deposition Raman method for protein analysis."*Analytical Biochemistry*, 353(2), 157-166.
74. Zhang, D.; Ortiz, C.; Xie, Y.; Davisson, V. J.; Ben-Amotz, D.* (**2005**) Detection of the site of phosphorylation in a peptide using Raman spectroscopy and partial least squares discriminant analysis. *SpectrochimicaActa, Part A: Molecular and Biomolecular Spectroscopy,* 61A, 471-475.
75. Zhang, D.*;Xie, Y.; Deb, S. K.; Davison, V. J.; Ben-Amotz, D. (**2005**) Isotope Edited Internal Standard Method for Quantitative Surface-Enhanced Raman Spectroscopy. *Analytical Chemistry,* 77, 3563-3569.
76. Mrozek, M. F.; Zhang, D.; Ben-Amotz, D.*(**2004**) Oligosaccharide identification and mixture quantification using Raman spectroscopy and chemometric analysis. Carbohydrate Research 339, 141-145.
77. Loethen, Y. L.; Zhang, D.; Favors, R. N.; Basiaga, Sara B. G.; Ben-Amotz, D.* (**2004**) Second-derivative variance minimization method for automated spectral subtraction. *Applied Spectroscopy,* 58, 272-278.
78. Xie, Y.; Zhang, D.; Jarori, G. K.; Davisson, V. J.; Ben-Amotz, D.* (**2004**) The Raman detection of peptide tyrosine phosphorylation.*Analytical Biochemistry,* 332, 116-121.
79. Ortiz, C.; Zhang, D.;Xie, Y.; Davisson, V. J.; Ben-Amotz, D.* (**2004**) Identification of insulin variants using Raman spectroscopy.*Analytical Biochemistry,* 332, 245-252.
80. Zhang, D.;Mrozek, M. F.; Xie, Y.; Ben-Amotz, D.* (**2004**) Chemical segregation and reduction of Raman background interference using drop coating deposition. *Applied Spectroscopy,* 58, 929-933.
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85. Zhang, D.; Hanna, J. D.; Jiang, Y.; Ben-Amotz, D.* (**2001**) Influence of laser illumination geometry on the power distribution advantage.*Applied Spectroscopy,* 55, 61-65.
86. Cai, T. T.; Zhang, D.; Ben-Amotz, D.* (**2001**) Enhanced chemical classification of Raman images using multiresolution wavelet transformation. *Applied Spectroscopy,* 55, 1124-1130.
87. Zhang, D.;Jallad, K. N.; Ben-Amotz, D.* (**2001**) Stripping of cosmic spike spectral artifacts using a new upper-bound spectrum algorithm. *Applied Spectroscopy,* 55, 1523-1531.
88. Zhang, D.; Ben-Amotz, D.* (**2000**) Enhanced chemical classification of Raman images in the presence of strong fluorescence interference. *Applied Spectroscopy,* 54, 1379-1383.

**BOOK CHAPTERS**

Ortiz, C.; Xie, Y.;Zhang, D.; Ben-Amotz, D.; Chapter 5: "Proteomic Applications of Drop Coating Deposition Raman Spectroscopy" in "New Approaches in Biomedical Spectroscopy", Editor, Kneipp et al. 2007, Oxford University Press. ISBN13: 9780841274372

**INVITED TALKS**

1. "Bioanalytical Raman Spectroscopy"
   Digital biology learning community

MSU Campus, September 2, 2009

2. "Bioanalytical Raman and Surface Enhanced Raman Spectroscopy"
   Department of Chemistry and Biochemistry, Jackson State University
   Jackson, MS. October 9, 2009
3. "Quantitative Protein Characterization using Drop Coating Deposition Raman Spectroscopy". Symposium.
   2010 FACSS Annual Conference.
   Raleigh, NC, October 21, 2010.
4. "Experimental Investigation of Molecular-Level Ligand Interfacial Interaction with Gold Nanoparticles"
   Interdisciplinary Center for Nanotoxicity, Jackson State University.
   Jackson, MS. January 27, 2012
5. "Quantitative Surface Enhanced Raman Spectroscopy" Symposium
   Annual Symposium of Mississippi Academy of Science,
   Hattiesburg, MS. Feb 22, 2012.
6. "Probing Protein and Organothiol interaction with Gold Nanoparticles"
   Department of Sciences and Mathematics, Mississippi University for Women.
   Columbus, MS. March 28, 2012.
7. "Molecular-level Interfacial Interaction of Gold Nanoparticles"
   College of Chemistry, Central China Normal University
   Wuhan, China. June 11, 2012.
8. "Molecular-level Interfacial Interaction of Gold Nanoparticles"
   College of Pharmacy, Tianjin Medical University
   Tianjin, China. June 19, 2012.
9. "Quantitative Surface Enhanced Raman Spectroscopy"
   Department of Chemistry and Biochemistry, The University of Mississippi.
   Oxford, MS. September 6, 2012.
10. "Quantitative Surface Enhanced Raman Spectroscopy, Challenges and Opportunities"
    Department of Chemistry, University of Alabama at Birmingham
    Birmingham, AL. Nov. 15, 2012.
11. "Molecular-level interfacial interactions with gold and silver nanoparticles in water"
    Department of Chemistry, Jackson State University
    Jackson, MS. Sept. 12, 2013
12. "Quantitative Surface Enhanced Raman Spectroscopy, Challenges and Opportunities"
    Department of Chemistry, University of New York at Buffalo
    Buffalo, New York. Nov. 12, 2013
13. "On the possibility of the para-aryl-dithiols cross-linking plasmonic nanoparticles as dithiolates."
    The 249th American Chemical Society National Meeting
    March 22-26, 2015, Denver, Colorado)
14. "Dispersion stability, phase partitioning, and ligand adsorption of plasmonic gold and silver nanoparticles".
    The 250th ACS National Meeting
    August 16-20, 2015. Boston, Massachusetts,
15. "Quantitative Surface Enhanced Raman Spectroscopy"
    College of Science, Huazhong Agriculture University
    Wuhan, Hubei, June 8, 2016
16. "Ratiometric Resonance Synchronous Spectroscopy (R2S2), a new measurement technique for material characterization and analysis".
    College of Chemistry, Wuhan University
    Wuhan, Hubei, June, 9, 2016
17. "Ratiometric Resonance Synchronous Spectroscopy (R2S2), a new measurement technique for material characterization and analysis".
    College of Chemistry, Sichuan University
    Chengdu, Sichuan, June 13, 2016

18. "Ratiometric Resonance Synchronous Spectroscopy (R2S2), a new measurement technique for material characterization and analysis".
College of Chemistry and Chemical Engineering, Southwest University
Chongqing, June 14, 2016
19. "Molecular-level interfacial interactions of plasmonic gold and silver nanoparticles".
College of Resources and Environment, Southwest University
Chongqing, June 15, 2016
20. "Thiolate to Disulfide Conversion Driven by Hydration and Dehydration.
The 3rd Hydrophobicity Workshop
July 12-16, 2016, at Telluride, CO.
21. "Ratiometric Resonance Synchronous Spectroscopy, A New Platform Technique for Material Characterization".
Department of Chemistry, Jackson State University
Jackson, MS. July 27, 2016
22. "Ratiometric Resonance Synchronous Spectroscopy, A New Platform Technique for Material Characterization".
Department of Chemistry, University of Southern Mississippi,
Hattiesburg, MS. February 9, 2017
23. "Quantification of the photon extinction, absorption, scattering, and on-resonance fluorescence of nanoparticles using polarized resonance synchronous spectroscopy".
254th ACS fall conference, Washington DC. August 20, 2017
24. "Polarized resonance synchronous spectroscopy for decoupling material UV-vis extinction spectral into its absorption and scattering component spectrum."
**Hendrix College**, Hendrix, Arkansas, March 26, **2018.**
25. "Interfacial interactions of plasmonic gold and silver nanoparticles."
Institute of Nanomaterial Engineering. **Henan University**, Kaifeng, China, July 23, **2018.**
http://kyc.henu.edu.cn/info/1077/7345.htm
26. "Polarized resonance synchronous spectroscopy for material characterizations for material characterization from small molecules, molecular assemblies, to large nanoparticle aggregates. College of Chemistry and Chemical Engineering. **Henan University**, Kaifeng, China, June 29, **2018**. http://kyc.henu.edu.cn/info/1077/7300.htm
27. "Polarized resonance synchronous spectroscopy and polarized fluorescence spectroscopy for holistic resolution of the interplay of material photon absorption, scattering, and emission."
Department of Chemistry. **Brown University**. November 16, **2018**.
https://events.brown.edu/portuguese-brazilian/view/event/event_id/48803
28. "Polarized resonance synchronous spectroscopy and polarized fluorescence spectroscopy for holistic resolution of the interplay of material photon absorption, scattering, and emission."
Department of Chemistry. **Tulane University**. January 28, **2019**.
http://www2.tulane.edu/sse/chem/events/seminars.cfm
29. "Quantification of the optical properties of nanoscale materials: challenges and opportunities". ACS Spring 2019 National Meeting, Orlando, FL. April 1, 2019. Invited symposium talk.
30. "Quantification of the optical properties of nanoscale materials: challenges and opportunities". Department of Chemistry, **University of Hong Kong Science and Technology**, Hong Kong, June 7, **2019**.
31. "Linearly polarized spectroscopy for materials characterization, from small molecules to large nanoparticle aggregates". Department of Chemistry, **Southwest Petroleum University,** Sichuan, China, July 22, **2019**.