



## Graduate Alumnus of the Month -- July 2022

### Assistant Professor - Analytical Chemistry

Cooperative Research  
College of Agriculture, Environmental and Human Sciences  
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**Dr. Qingbo “Roger” Yang earned his Bachelor’s degree from Zhengzhou University (2005) in Bioengineering and a Master’s degree from Shanghai University (2010) in Molecular Biology and Biochemistry, and his **Ph.D. degree from Missouri S&T (2016) in Analytical Chemistry**. He did postdoctoral research in Physical Chemistry at UC Davis in the Department of Chemistry. After a short entrepreneurial attempt in San Diego (CA), he returned to Missouri and joined Missouri S&T in February 2019 as Assistant Research Professor in the Department of Electrical Engineering. He then moved to Lincoln University of Missouri in November 2020 and is currently an Assistant Professor of Analytical Chemistry in the Cooperative Research Program in the College of Agriculture, Environmental Departmental and Human Sciences.**

**Research Interests:** Fiber-optics and micro/nano sensors, single cell research, micro/nano bioactive materials, nanotoxicology, nanolithography, metabolomics, bionics, etc. Dr. Yang has designed and fabricated a variety of micro/nano fiber-optic sensors for real-time sensing of chemical/physical variables such as pH, temperature, antigens, blunt force impact, etc. He scrutinized the nanotoxicities of various metal oxide nanoparticles and revealed the underlying bioactive mechanism of borate-based glass micro/nano-fibers. Meanwhile, he demonstrated innovative methods of nanolithography via AFM-based techniques, and he is currently working on biomimetic nanosensors as well as high-throughput liquid-/gas-chromatography-mass spectrometry methods for on-site rapid detection of foodborne pathogens. Dr. Yang’s research has resulted in over 20 peer-reviewed research articles, a chapter in the book of Carbohydrate Nanotechnology, a US patent, and more than 30 conference proceedings and presentations.

### For more information, visit:

Homepage: <https://lincolnu.edu/web/cooperative-research-faculty-and-staff/cooperative-research-faculty-and-staff/dr.-qingbo-yang>

Advanced Bioanalytical Lab: <https://rogerqbyang.net/>

### Recent Publications:

Zhuang, Y., Yang, Q., Han, T., O’Malley, R., Kumar, A., Gerald II, R. E., & Huang, J. (2021). Fiber optic sensor embedded smart helmet for real-time impact sensing and analysis through machine learning. *Journal of Neuroscience Methods*, 351, 109073.

Ma, Y., Shi, H., Yang, Q., & Xiao, H. (2020). *U.S. Patent No. 10,591,418*. Washington, DC: U.S. Patent and Trademark Office.

Yang, Q., Cristea, A., Roberts, C., Liu, K., Song, Y., Xiao, H., Shi, H. & Ma, Y. (2020). Unveil early-stage nanocytotoxicity by a label-free single cell pH nanoprobe. *Analyst*, 145(22), 7210-7224.

Zhang, J., Piunova, V. A., Liu, Y., Tek, A., Yang, Q., Frommer, J., Liu, G. & Sly, J. (2018). Controlled molecular assembly via dynamic confinement of solvent. *J. Phys. Chem. Lett.*, 9(21), 6232-6237.