

Biochemistry, Biomaterials, and Biomedical Engineering

Research Topics

- Developing novel DNA-based drug delivery systems for cancer therapy and super sensitive biosensors for early disease diagnosis
- Studying biomolecular interactions at the single molecular level
- Fabricating plasmonic metamolecules and investigating their novel properties
- Designing environmental stimuli-responsive smart biomaterials

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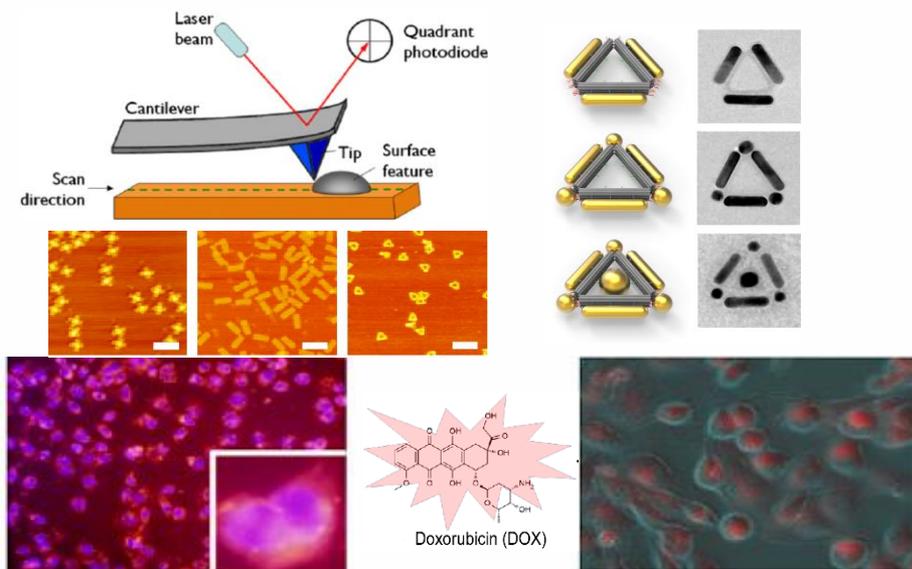
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Funding

National Science Foundation

University of Missouri Research Board

AFMworkshop



Biomaterial application in cancer therapy and biosensing

Keywords

- DNA nanotechnology; Precision biomedicine; Drug delivery; Plasmonic nanoparticles; self-assembly; Nanofabrication

Significant Achievements

- 2016 & 2017 Tappmeyer Teaching Excellence Award
- Time-lapse live cell imaging to monitor doxorubicin release from DNA origami Nanostructures, Y. Zeng, et al, J. Mater. Chem. B, 2018, 6, 1650 (front cover image)
- Label-free and ultrasensitive electrochemical DNA biosensor based on urchinlike carbon nanotube-gold nanoparticle nanoclusters, S. Han, et al, Anal. Chem. 2020, 92, 4780 (front cover image)

