Brian Leon Kamras, PhD
email@address.com (555) 555-5555

Creative Chemist with 6 years experience in research and development (nano-materials, polymers, colloids and metals), product formulations and project management. Skilled in development of polymer hybrids for injectable medical devices, wound dressings, and diagnostic tools. Interested in material design, new product development, and basic science.

SKILLS

Nanomaterials Synthesis/Characterization
Medicinal Chemistry
Polymer Chemistry
Inorganic Chemistry
Surface Chemistry
UV-Vis, FT-IR, NMR, Raman
Aseptic Technique
Cell Culture (Maintenance, Assays)

C, Python, LaTeX
Experimental Design
Fluorescent and Phosphorescent Spectroscopy
MS Office, Origin, Linux, UNIX
Leadership/Management (Undergraduate, Graduate)
HPLC, GC, GC-MS
Technical Writing (SOPs, Protocols, Papers)
Conversational German (Native English)

WORK EXPERIENCE

Gold Nanotriangles Using Non-toxic Chitosan 2013 - 2014

- Used Response Surface Methodology and empirical analysis to optimize synthethis of near-infrared (NIR) absorbing gold nanoparticles (NIRNPs) & nanotriangles
- Used modified Job plots, UV-Vis-NIR spectroscopy and SEM to determine that chitosan concentration affects particle size and shape
- *Result: NIRNPs used as photothermal agents for variety of studies in Omary lab, initial patent expanded*

Gold Nanorods Using Lecithin 2014 - 2016

- Used crude egg lecithin as "drop in" replacement for CTAB
- Synthesized size-tunable gold nanoparticle seeds and gold nanorods with this method
- *Result: Patent initiated and resulting lecithin+nanoparticle conjugate investigated as multimodal theranostic platform*

Size Tunability of Polymer Nanoparticles 2016 - 2018

- Developed block copolymer nanoparticles for biomedical applications
- Used non-toxic stabilizer to create particles with nanometer-precise diameter
- Developed new mathematical relationship between reagents and particle size explaining influence of surfactnat on size
- *Result: nanoparticles and synthetic method used as platform for biomedical studies in Omary Lab*

NP@FMOF-1 Nanomaterials as Room-temperature Catalysts 2018 - 2019

- Grew metal nanoparticles within metal-organic-framework for carbonation of value-added feedstocks
- Characterized crystal properties and catalytic yields using NMR, PXRD, and SAXS

TEACHING AND MENTORSHIP EXPERIENCE

- Undergraduate Labs (General Chemistry (1 & 2) and Organic Chemistry (1 & 2)

- Organic Chemistry lecturing
- Mentorship of graduate students on instrument use, experimental technique, and presentation skills

EDUCATION

Doctor of Philosophy, University of North Texas August 2013 - May 2019

Bachelor of Arts, Austin College August 2009 - May 2012

Selected Awards

Brookhaven National Labs - Center For Functional Nanomaterials September 2019

Awarded instrument use based on competitive proposal: "Investigation of surface chemisty, crystal structure, and composition of a nanoparticle-embedded fluorous metal organic framework (FMOF-1)"

PUBLICATIONS

- B. L. Kamras. "Application-focused Investigation of Monovalent Metal Complexes for Nanoparticle Synthesis." 2019.
- D. K. Korir, B. Gwalani, A. Joseph, B. Kamras, R. K. Arvapally, M. A. Omary and S. B. Marpu, Nanomaterials, 2019, 9, 596.
- B. L. Kamras, N. M. Nasiri, D. Korir, D. P. Simmons, M. A. Omary, Journal of Physical Chemistry C, 2019, in progress.

SELECTED CONFERENCES

- Brian L. Kamras and Mohammad A. Omary. "Environmentally Benign, Biocompatible Gold Nanoparticles for Photothermal Therapy". National Cancer Institute Center for Strategic Science Initiatives (NCI-CSSI), University of North Texas Discovery Park, August 2014.
- Nooshin M. Nasiri, Brian Leon Kamras, Sreekar Marpu, Denise Perry Simmons, Mohammad A. Omary. "New Synthesis Methodology for Making FITC Labeled PMMA Nanoparticles: Understanding Effect of Crosslinked vs. Surfactant-stabilized Nanoparticles on Conjugation". ACS National Meeting, San Diego, 2019.