The Department of Chemistry congratulates Associate Professor Brandi Cossairt on her promotion to professor, effective September 16, 2020.

An inorganic chemist specializing in the synthesis and post-synthetic modification of nanoparticles with unique physical properties, Professor Cossairt has developed important new insights as to how these particles assemble, facilitating the rational design of synthetic procedures that offer better control and the precise tailoring of function. The Cossairt research group uses synthetic inorganic chemistry approaches to address key problems related to sustainability, such as developing new, efficient light emitting materials for display technologies, designing catalysts to make fuel from water or carbon dioxide and sunlight or sunlight-derived electricity, and exploring new inexpensive materials for solar energy harvesting. To advance clean energy technology, the Cossairt group is developing low-tech solution phase methods to synthesize high-tech electronic materials from Earth-abundant elements, as well as methods to capture and store solar energy in the form of chemical bonds. They have advanced the understanding and control of leading alternatives to replace toxic cadmium-containing materials in solid-state lighting and display applications through innovative syntheses of phosphide nanocrystals, particularly indium phosphide (InP) and zinc phosphide (Zn3P2). They are also building improved materials and devices for electrical to chemical energy conversion by modifying the interfacial structure and composition of catalytic materials.

For more information about Professor Cossairt and her research program, please visit her faculty page and research group site.