Development of Nuclear Grade Nanoparticle Ink Synthesis Capabilities for Advanced Manufacturing of Nuclear Sensors

PI: David Estrada, Ph.D, Boise State University **Collaborators**: N/A

Program: General Scientific Infrastructure

ABSTRACT: Through the procurement of a suite of instruments, this project will establish the capability to produce nuclear grade nanoparticle inks within the Micron School of Materials Science and Engineering (MSMSE) at BSU and the NSUF network. The benefits of this new capability will a) enhance the institution's ability to conduct research relevant to the DOE-NE's mission through collaborations between BSU and the Idaho National Laboratory (INL), b) expand the MSMSE program's capabilities to attract high quality students focused on nuclear materials related research, and c) build new research infrastructure at BSU that will have a lasting impact on the research and educational opportunities afforded to the next generation nuclear energy workforce. A major outcome of this project is the enablement of NSUF researchers to perform investigations into the fundamental effects of irradiation on structure-property-processing correlations in printed materials and devices. Preliminary collaborative efforts to address this area of research are underway between the major project participants at BSU and the INL.