

Amber N. Reed, PhD
Research Materials Engineer
Electronic Materials Branch
Materials and Manufacturing Directorate
Air Force Research Laboratory

Ph: (937) 255-9784

Em: amber.reed.5@us.af.mil

Google Scholar: https://scholar.google.com/citations?user=YfT3c QAAAAJ&hl=en&oi=ao

Dr. Reed started with the Air Force Research Laboratory (AFRL) in the Materials and Manufactoring Directorate as a Masters student in 2007 working on plasma-treatments to increase the conductivity of indium tin oxide on aircraft canopies. She began her civil service career in 2009, first through the Student Cooperative Education Program (SCEP) then as Pathway Intern. During that time, she worked as part of a team on a variety of projects, including hybrid-plasma sources for materials processing, energetic magnetron sputtering approaches, metallization of carbon nanotubes for thermal management, and high power impulse magnetron sputtering (HiPIMS) of metals and oxides. Dr. Reed's PhD dissertation was on her work at the Materials and Manufacturing Directorate, in collaboration with the Sensors Directorate, on HiPIMS as a low-temperature, substrate-agnostic approach for depositing high-quality polycrystalline zinc oxide as the channel materials for thin film field effect transistors. After completing her Ph.D. in 2015, Dr. Reed was hired as Materials Research Engineer and has since been leveraging her experience in ion bombardment during magnetron sputtering, process-plasma physics and materials characterization to work on controllably-unbalanced reactive magnetron sputtering of transition metal nitrides and topological materials. She is currently involved in the development of epitaxial PVD approaches, such as pulsed laser deposition and controllably-unbalanced magnetron sputtering with external electro-magnets, to enable low-cost, rapid prototyping of diverse material systems to support the development of next generation communication and sensing technology for the Air Force. During her time at AFRL, Dr. Reed has activley engaged in mentoring young researchers by involving them in her research and participating in STEM outreach. She is also active in internal resource groups for female scientists and engineers. In her free time, Dr. Reed enjoys reading, hiking and photography.