

Advances in Single-Particle Spectroscopy Using Fast Electrons

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In this talk I will highlight our recent research in low-loss STEM-EELS in collaboration with Jon Camden (Notre Dame), Philip Rack and Gerd Duscher (UTK), Juan Carlos Idrobo (ORNL), and Peter Crozier (ASU). Emphasis will be placed on modeling the interaction of the fast electron probe with surface plasmon and photonic cavity modes in noble metal and dielectric oxide nanoparticles and their assemblies. Several topics ranging from plasmonic energy transfer, weak-to-strong coupling, Fano antiresonances, and magnetic plasmon hybridization will be discussed.