Abstract Submitted
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Optical Response of Metal Nanoparticles Grown on Ferroelectric Surfaces[1] KATYAYANI SEAL, University of Tennessee, XIAOYING XU, ILIA IVANOV, SERGEI KALININ, ZHENYU ZHANG, JIAN SHEN, GYULA ERES, Oak Ridge National Laboratory — We demonstrate the controlled photodeposition of silver nanoparticles on a ferroelectric substrate, study the growth kinetics and investigate the optical response of the particles and substrate. A photochemical process is used to initiate the deposition of metallic nanoparticles on a ferroelectric substrate with favorably oriented domains. For the first time, light transmitted through the crystal was used to induce photodeposition. This process indicates the possibility of confined surface electromagnetic waves in the ferroelectric substrate. The growth kinetics are influenced by the excitation of surface plasmons.

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