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**Photoinduced Deposition of Gold Nanoparticles on Periodically Poled Lithium Niobate** VERONICA MEEKS, ANNA ZANIEWSKI, BRANDON PALAFOX, ROBERT NEMANNICH, Arizona State University — This research investigates gold (Au) nanoparticle deposition patterns on a ferroelectric substrate, periodically poled lithium niobate (PPLN). Particles are made by reducing aqueous solutions of metal salts on the PPLN surface with ultraviolet (UV) light stimulation to create the photo-induced deposition patterns. A wide array of concentrations are examined ranging from 2E-8M to 1E-3M of gold solution. The results show that the deposition patterns are highly dependent upon concentration, but in all cases, the patterns consist of discrete nanoparticles. Previous work on silver deposition on PPLN has resulted in continuous silver nanowires, implying that this technique should be extendable to gold nanowires. Gold nanowires would have a number of advantages over silver nanowires, given gold's superior conductivity and chemical stability.

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