

Abstract Submitted
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Sizing morphology-controlled gold nanoparticles by linear absorption spectroscopy.¹ JASMINE AUSTIN, QIGUANG YANG, JAETAE SEO, BAGHER TABIBI, Department of Physics, Hampton University, Hampton, VA 23668, WANJOONG KIM, Electronics and Telecommunications Research Institute, Daejeon, 305-700, South Korea, JINHWA HEO, SANG WOO HAN, Department of Chemistry, Gyeongsang National University, Jinju 660-701, South Korea, WAN SOO YUN, SUNGSOO JUNG, Korea Research Institute of Standards and Science, Daejeon, 305-600, South Korea, JUSTIN VAZQUEZ, JESSICA FREEMAN, DOYLE TEMPLE, Department of Physics, Hampton University, Hampton, VA 23668 — The most remarkable optical property of gold nanoparticles is surface plasmon resonance (SPR) which dramatically differs from its bulk counterpart. Within the frame of Mie theory, we investigated the relationship between the size and the SPR and its corresponding bandwidth. An empirical fitting function will be given for the sizing curve for morphology-controlled gold nanoparticles in water and possible physical mechanisms for the size-dependent optical properties will be discussed in this paper.

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