

Abstract Submitted  
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**Plasmon Enhanced Hetero-Junction Solar Cell** GEN LONG, LEVINE CHING, MOSTAFA SADOQI, HUIZHONG XU, Department of Physics, College of Liberal Arts and Sciences, St John's University, 8000 Utopia Parkway, Jamaica, NY 11439 — Here we report a systematic study of plasmon-enhanced hetero-junction solar cells made of colloidal quantum dots (PbS) and nanowires (ZnO), with/without metal nanoparticles (Au). The structure of solar cell devices was characterized by AFM, SEM and profilometer, etc. The power conversion efficiencies of solar cell devices were characterized by solar simulator (OAI TriSOL, AM1.5G Class AAA). The enhancement in the photocurrent due to introduction of metal nanoparticles was obvious. We believe this is due to the plasmonic effect from the metal nanoparticles. The correlation between surface roughness, film uniformity and device performance was also studied.

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