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| Abstract |  |
| The depletion of fossil fuel and environmental anxieties has led to a greater interest in renewable forms of energy. To a large extent, the most prevalent form of renewable energy presently is solar energy. The Dye-sensitized solar cell (DSSC) is a promising substitute for all too familiar silicon solar cells. DSSC uses dyes as light-harvesting pigments in the conversion of solar energy to electric energy. This study is about the fabrication of DSSC using a photoanode made up of TiO 2 fused with gold nanoparticles. Gold nanoparticles enhance the performance of DSSC due to the plasmonic effect. The gold nanoparticles were made by the citrate method and characterized using UV–visible spectroscopy and dynamic light scattering. The performance of the solar cells was accessed via photocurrent and photovoltage measurements. The solar-to-electric power efficiency of the solar cells with gold nanoparticles was found to be about 50% higher than those without gold nanoparticles. | |