Investigation of Hydrothermally Processed Nanomaterials for Integration with Third Generation Photovoltaics

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Nano-sized TiO$_2$ with $d = 7.2 \pm 0.7$ nm were synthesized using microwave/hydrothermal heating, resulting in anatase crystal structures. TiO$_2$|Qdots heterostructures also fabricated. Using similar methodology, Au$_x$Pd$_{1-x}$|Ag Janus-particles fabricated with high morphological yields. Growth due to nature of alloy NP interface and the extent of lattice mismatch/surface tension.