

Supporting Information

Cation Exchange of Aqueous CuInS₂ Quantum Dots

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Characterisation

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Synthesis of bulk material:

Roquesite (CuInS₂ Raw) preparation:

Elemental Cu (1.30g, 98% purity), In (2.35g, 99.99% purity) and S (1.33g, 99.99% purity) were combined stoichiometrically and sealed in a 10mm diameter silica tube under vacuum (10⁻² Torr). The sealed tube was heated slowly (1°C/min) to 400 °C in a furnace and allowed to anneal for 3hrs, after which it was further heated to 700 °C, annealed for a further 3hrs, followed by heating to 1050 °C and annealing for 4 days. The furnace was then turned off and the product was cooled to room temperature, followed by XRD characterization.

TiO₂ Paste formation:

2 g of TiO₂ particles (P25, Degussa) were added to a mortar and pestle containing 2 mL of DI water, 50 µL acetic acid and crushed to form a smooth paste. Once a smooth paste was obtained 50 µL of triton x-100 was added as a surfactant to prevent further aggregation of the particles suspended in the paste

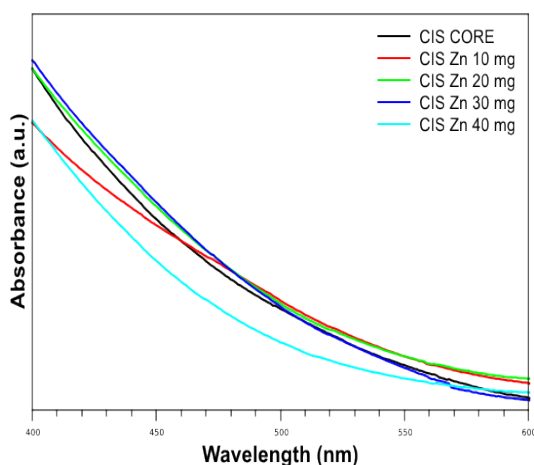


Figure S1: UV-Vis spectra, indicative of the near infrared CIS QDs

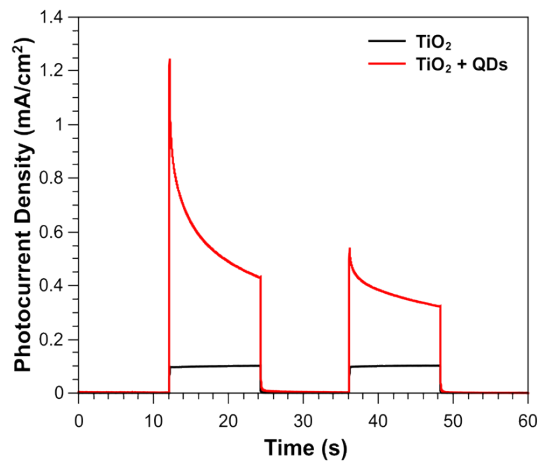


Figure S2: Photocurrents for TiO₂ (bare) and TiO₂ (CIS QDs)