

Comparison of photocatalytic activity using various kinds of metal tips on pyramid-shaped photocatalysts

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We report ripening of metal particles anchored on pyramid-shaped heterostructure nanocrystals. While selective growth onto heterostructures occurs at a low gold concentration, Ostwald ripening occurs within each particle at a high gold concentration. The ‘intra-particle’ ripening results in a large metal tip at one corner with the other three tips vanishing. Investigation into methylene blue reduction reveals that the ripening and core/shell formation affects photocatalytic activities via the Fermi level change.