

Importance of metal nanoparticle sizes in clean energy catalytic processes

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Particle size is a key feature of supported metal catalysts and strongly influences their catalytic behavior in several catalytic reactions. The design of metal nanoparticles as catalysts for hydrogen production reactions has been reported. The regulation of their properties through optimal nanoparticle size, alloy formation, and support features could enable a performance achievement that balances catalytic activity, hydrogen selectivity, and stability under reaction conditions. These challenges could be addressed by designing novel nanocatalysts using advanced characterization and synthesis techniques.