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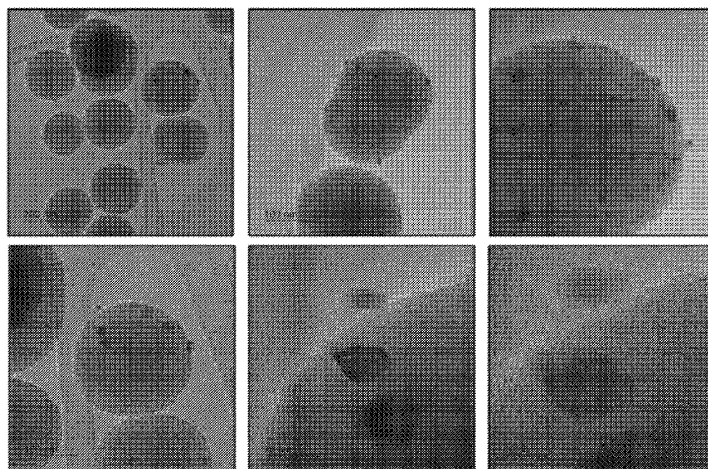


FIG. 1

(57) Abstract: The present invention relates to catalysts, catalyst systems, and processes for the production of valuable light olefins, such as C₂-C₄ olefins (ethylene, propylene, and/or butenes) from paraffinic hydrocarbons, such as propane, through dehydrogenation and metathesis. Some particular aspects relate to the discovery of non-precious metal catalysts and catalyst systems utilizing such catalysts, for example in the case of being in an admixture with a metathesis catalyst, which advantageously exhibit high performance in terms of activity, selectivity, and stability. Other advantages can include a reduced production of byproducts (*e.g.*, methane and ethane) that result from undesired side reactions, in addition to benefits that may be attained through the addition of a sulfur-bearing compound (*e.g.*, H₂S).

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