

### Catalyst Studies for Ammonia Dissociation

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Ammonia can be applied with solar thermal power plants as elegant closed-loop thermochemical energy storage system, facilitating continuous 24-hour solar power generation. The endothermic ammonia dissociation reaction of such a system has been successfully demonstrated using paraboloidal dish solar concentrators. The possibility of operating the system at lower temperatures substituting the conventional iron catalyst by ruthenium catalysts has recently been investigated. Lower operating temperatures would allow the use of more cost-effective parabolic trough collectors. To investigate the activity of a variety of potential iron as well as ruthenium catalysts in a systematic manner a microreactor arrangement has been established. The activity and properties of the different iron and ruthenium catalysts for the ammonia dissociation under high pressure will be compared and discussed.