

## Carbonate Thermochemical Cycle for the Production of Hydrogen (Supplemental to ID 1435)

### **Disclosure Number**

200501585

### **Technology Summary**

The most abundant source of hydrogen fuel is from water. In a thermochemical process, water plus heat yields hydrogen and oxygen; all other chemicals within the process are fully recycled. This new process produces hydrogen at a much lower temperature (<600°C) than the current reference sulfur-iodine process. This process has a peak reactant regeneration temperature (650 - 750°C) that matches temperatures of current (gas-cooled) nuclear reactors under serious consideration for construction in the U.S. Therefore, the development of radical new reactors concepts and designs may not be necessary for the carbonate thermochemical cycle were it to be developed and deployed for hydrogen production. This invention could displace significant amounts of carbon based fuels (e.g. gasoline) within the world economy.

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