



Stable Catalyst Layers for Hydrogen Permeable Composite Membranes

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Summary: A hydrogen permeable membrane that is stable over a broad temperature range

Description: There is great interest in using high temperature membranes in devices to produce high purity hydrogen from a variety of sources. Current hydrogen permeable membranes employ a palladium catalyst layer on both sides of a hydrogen permeable metal or metal alloy. However, at elevated temperatures (>350°C) the palladium catalyst layer diffuses into the metal membrane, dramatically decreasing its ability to separate hydrogen. This invention is of a hydrogen separation membrane that is based on nonporous composite metal carbide or metal sulfide coated membranes capable of high flux and permselectivity for hydrogen. This membrane is capable of being operated over a broad temperature range, including at elevated temperatures, while maintaining hydrogen selectivity.

Potential Areas of Application

- Hydrocarbon Reforming
- Ammonia purge gas streams
- Fuels and chemical production from synthesis gas streams
- Fuel cell power systems

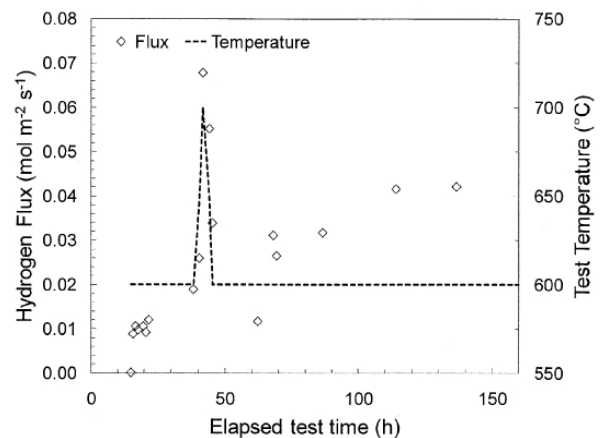
Main Advantages of this Invention

- Cost-effective
- High efficiency at higher temperatures

ID number: 10007

Intellectual Property Status: US 8,623,121

Opportunity: We are seeking an exclusive or non-exclusive licensee for marketing, manufacturing, and sale of this technology.



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