

HETEROGENEOUS HYDROGEN-CATALYST REACTOR

ABSTRACT

A power source and hydride reactor is provided comprising a reaction cell for the catalysis of atomic hydrogen to form hydrinos, a source of atomic hydrogen, a source of a hydrogen catalyst comprising a solid, liquid, or heterogeneous catalyst reaction mixture. The catalysis reaction is activated or initiated and propagated by one or more chemical other reactions. These reactions maintained on a electrically conductive support can be of several classes such as (i) exothermic reactions which provide the activation energy for the hydrino catalysis reaction, (ii) coupled reactions that provide for at least one of a source of catalyst or atomic hydrogen to support the hydrino catalyst reaction, (iii) free radical reactions that serve as an acceptor of electrons from the catalyst during the hydrino catalysis reaction, (iv) oxidation-reduction reactions that, in an embodiment, serve as an acceptor of electrons from the catalyst during the hydrino catalysis reaction, (v) exchange reactions such as anion exchange that facilitate the action of the catalyst to become ionized as it accepts energy from atomic hydrogen to form hydrinos, and (vi) getter, support, or matrix-assisted hydrino reaction that may provide at least one of a chemical environment for the hydrino reaction, act to transfer electrons to facilitate the H catalyst function, undergoes a reversible phase or other physical change or change in its electronic state, and binds a lower-energy hydrogen product to increase at least one of the extent or rate of the hydrino reaction. Power and chemical plants that can be operated continuously using electrolysis or thermal regeneration reactions maintained in synchrony with at least one of power and lower-energy-hydrogen chemical production.

No fig.