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Solar-to-Hydrogen Reactor Design

Tech ID: 33765 / UC Case 2022-999-0

BRIEF DESCRIPTION

An innovative reactor design that converts sunlight into hydrogen fuel efficiently and cost-effectively.

FULL DESCRIPTION

Researchers at UCI have developed a reactor capable of producing hydrogen (H2) fuel from water using sunlight. Unlike existing solutions that rely on expensive materials or pose safety risks, this design utilizes a novel approach to split water into hydrogen and oxygen cleanly and inexpensively. The process is CO2-free, aligning with global efforts to reduce carbon emissions and combat climate change.

SUGGESTED USES

- » Renewable energy storage across seasons.
- » Low-cost, clean transportation fuel.
- » Chemical industry feedstock for ammonia and other chemicals production.
- » Large-scale implementation in existing energy infrastructure.

ADVANTAGES

- » Cost-effective production of H2, meeting the U.S. Department of Energy's cost targets.
- » Clean production process with no CO2 emissions.
- » Compatibility with existing infrastructure for hydrogen use.
- » Utilizes sunlight, an abundant and renewable energy source.
- » Addresses the bottleneck issues of prior technologies, offering a scalable solution for global implementation.

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Published Application	20230390724	12/07/2023	2022-999

RELATED MATERIALS

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OTHER INFORMATION

CATEGORIZED AS

- » Energy
- » Bioenergy
- » Other

RELATED CASES

2022-999-0

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