

Abstract Submitted
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Hydrogen Production by Infrared (HyPIR) Electrolysis JOHN FANCHI, TCU — The viability of using hydrogen as an energy carrier depends on our ability to provide a sustainable supply of hydrogen at an economically competitive price. The supply of hydrogen depends on how fast we can produce hydrogen and the amount of energy needed to separate hydrogen from hydrogen-bearing molecules. We describe a process called hydrogen production by infrared (HyPIR) electrolysis. The HyPIR electrolysis process significantly increases the rate of hydrogen production by irradiating an electrolytic solution with light at an optimized wavelength. We present results of experiments which show the increase in the rate of hydrogen production from water when an electrolytic cell containing 0.12 M Ep-som salt solution is irradiated with an optimum wavelength of light. The irradiating light facilitates the dissociation of water by stretching the hydrogen-oxygen bond and increases the rate of hydrogen production.

John Fanchi
TCU

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