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(54) Title: METHOD AND SYSTEM FOR STORING ENERGY IN THE FORM OF BIOPOLYMERS

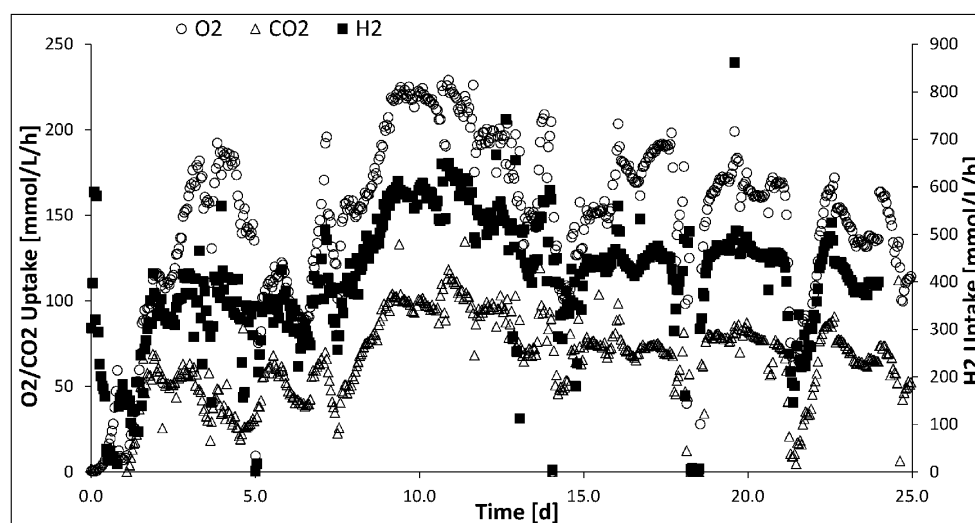


Fig. 1

(57) **Abstract:** The disclosure provides for methods and a system for storing energy in the form of a biopolymer. The method comprises intermittently processing electric energy generated from a renewable and/or non-renewable energy source in an electrolysis process to produce at least H₂, O₂ or CO; intermittently passing H₂, O₂, or CO from the electrolysis process to a bioreactor containing a bacterial culture capable of producing a biopolymer; and fermenting the culture. The disclosure further provides a system for storing energy in the form of biopolymer comprising an electrolysis process in intermittent fluid communication with a renewable and/or non-renewable energy source for producing at least one of H₂, O₂, or CO; a bioreactor, in intermittent fluid communication with the electrolysis process and/or in continuous fluid communication with an industrial plant, comprising a reaction vessel suitable for intermittently growing, fermenting, and/or culturing and housing a microorganism capable of producing a biopolymer.

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