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(71) Applicant: **INTERNATIONAL RENEWAL ENERGY HOLDING PTE. LTD.** [SG/SG]; 190 Middle Road, #11-02 Fortune Centre, Singapore 188979 (SG).

(72) Inventors: **ZHAO, Qipeng**; Block 364 Clementi Avenue 2, #06-469, Singapore 120364 (SG). **WONG, King Kheng**; 411 Sixth Avenue, Singapore 276580 (SG). **LIM, Beng Tiong**; Block 809 Yishun Ring Road, #13-4233, Singapore 760809 (SG).

(74) Agent: **VIERING, JENTSCHURA & PARTNER LLP**; P.O. Box 1088, Rochor Post Office, Rochor Road, Singapore 911833 (SG).

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(54) Title: MEMBRANE ELECTROLYSIS CELL AND METHOD OF USE

(57) Abstract: The present disclosure provides for an electrolytic cell having an electric circuit comprising an anode and a cathode separated by a hydrogel membrane, and an electrolytic system comprising a plurality of the electrolytic cells. The hydrogel membrane may comprise a hydrophilic polymer and acts as an electrolyte. A method of electrolysis, and a method of electrolysis of water, are also disclosed herein. The method may involve locating a hydrogel membrane comprising a hydrophilic polymer between an anode and a cathode of an electric circuit, absorbing liquid into the hydrogel membrane, and passing an electric current through the electric circuit. The liquid may be water. For the method of electrolysis of water, passing the electric current through the electric circuit may be such that the water in the hydrogel membrane is reduced to hydrogen at the cathode and oxygen forms at the anode.



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