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(71) Applicant: KATHOLIEKE UNIVERSITEIT LEUVEN
[BE/BE]; KU Leuven Research & Development Waaistraat
6 - Box 5105, 3000 Leuven (BE).

(72) Inventors: MARTENS, Johan; Eekhoornlaan 6, 3051
Sint-Joris-Weert (BE). RONGÉ, Jan; Pater Isidoor Tay-
mansstraat 46, 3090 Overijse (BE). BOSSEREZ, Tom;
Meidoornlaan 40, 1851 Humbeek (BE). HEREMANS, Gi-
no; Pakenstraat 59, 3001 Heverlee (BE). TROMPOUKIS,
Christos; Avenue Moliere 9, 1190 Vorst (BE). PEETERS,
Robin; Plasstraatje 8, 2220 Heist-op-den-Berg (BE).

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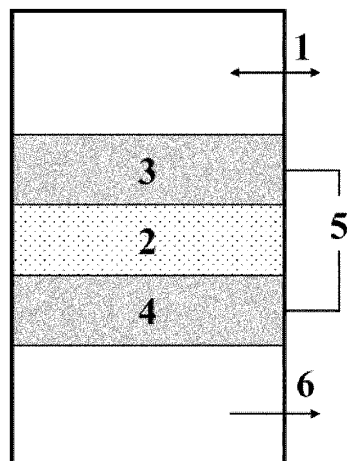


Figure 1

(57) Abstract: The invention relates to a hydrogen producing apparatus comprising an enclosed volume, the volume comprising: at least one gas inlet from the outside environment, at least one porous matrix material with hygroscopic or deliquescent properties and having ionic conductivity, an oxygen producing electrode, a hydrogen producing electrode, an optional separator positioned between the oxygen producing electrode and the hydrogen producing electrode, a connection for connecting the electrodes to a power source, and at least one outlet for collecting the produced hydrogen outside the hydrogen producing apparatus, wherein a porous matrix material is in contact with the oxygen producing electrode.

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