Title (en)

ALKALINE PHOTOELECTROCHEMICAL CELL

Title (de)

ALKALISCHE PHOTOELEKTROCHEMISCHE ZELLE

Title (fr)

CÉLLULE PHOTOÉLECTRIQUE ALCALINE

Publication

EP 3268511 A1 20180117 (DE)

Application

EP 16708672 A 20160308

Priority

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- EP 2016054920 W 20160308

Abstract (en)

[origin: WO2016142382A1] The invention relates to a photoelectrochemical cell (PEC) for the light-driven production of hydrogen and oxygen from an aqueous medium in a basic environment. The invention further relates to the production of the photoelectrode of the photoelectrochemical cell and to a method for the light-driven production of hydrogen and oxygen by using the photoelectrochemical cell. The problem addressed by the invention is that of specifying a PEC that operates under alkaline conditions and therefore can forgo noble-metal catalysts, that achieves high light efficiency, and that is durable despite the alkaline conditions. This problem is solved by means of a photoelectrochemical cell, the photoelectrode of which has a special multi-layer layer structure, namely at least d) having a transparent adhesion-promoting layer, which is applied directly to the mentioned solar cell or a further solar cell and which is composed of one of the following metals or of an alloy of one or more of these metals: nickel, chromium, tungsten, hafnium; e) having a mirror layer, which is applied directly to the adhesion-promoting layer and which is composed of one of the following metals or of an alloy of one or more of these metals: silver, copper, aluminum; f) and having an anti-corrosion layer, which is applied directly to the mirror layer and adjoins the reaction chamber and is composed of nickel or of an alloy containing nickel.

IPC 8 full level

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CPC (source: EP)

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Citation (search report)

See references of WO 2016142382A1

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