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**(54) Title (EN):** PHOTOCATALYST FOR EFFICIENT HYDROGEN GENERATION

**(54) Title (FR):** PHOTOCATALYSEUR POUR LA GÉNÉRATION EFFICACE D'HYDROGÈNE

**(57) Abstract:**
**(EN):** Certain embodiments of the invention are directed to a water splitting photo electrochemical (PEC) thin film comprising metal nanostructures positioned between a $Cd_xZn_{1-x}S$ semiconductor and a ZnO semiconductor to form a Z-scheme for total water splitting.

**(FR):** Certains modes de réalisation de l'invention concernent un film mince photo-électrochimique (PEC) de dissociation de l'eau comprenant des nanostructures métalliques positionnées entre un semi-conducteur $Cd_xZn_{1-x}S$ et un semi-conducteur ZnO pour former un schéma en Z pour une dissociation totale de l'eau.

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**Declarations:**

Declaration made as applicant's entitlement, as at the international filing date, to apply for and be granted a patent (Rules 4.17(ii) and 51bis.1(a)(ii)), in a case where the declaration under Rule 4.17(iv) is not appropriate