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Renewable Electrolysis using Graphene electrodes for Solar water splitting

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Abstract: Producing low-cost water electrolysis processes has been considered a sustainable approach in the production of hydrogen from inputs of renewable energy, this work shows a potential for renewable to hydrogen conversion using Solar Photovoltaics (PV) and graphene electrodes, the functionality of the system is discussed, this work also reports the behavior of graphene as an independent electrolyzer unit as it eliminates the requirement of membrane for electrolysis, Graphene itself is a flat monolayer of carbon atoms compressed into a two-dimensional honeycomb lattice, and is the basic building block for graphite. Graphene has been a key contributor to environmentally benign hydrogen generation performance. The power production capacity of 5 KW panel is described initially and the literature for Electrolysis and Graphene is surveyed, and a potential solution of bringing this architecture together has been demonstrated.

Keywords : graphene; solar PV; electrolysis; renewable energy; power.

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