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Rust: The unusual candidate for hydrogen production

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Sustainable, renewable and clean solar energy collection has seen rapid progress in research where different electrodes have been explored. Among these, Hematite, a reddish-brown iron oxide has been found to possess remarkable credentials such as chemical stability, low cost and abundance for use as photoanodes. In addition its bandgap of 2.2 eV is perfect for solar energy collection. In this paper, recent progress focused on light absorption and charge transfer dynamics will be presented, including the work done to show how hematite obtained by a low cost synthesis can be refined by hydrothermal treatment and further functionalized by coating with phycocyanin, a light harvesting protein known for photosynthesis in blue-green algae

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