Combining Layer by Layer (LBL) and Hydrothermal Methods to Enhance Photoelectrochemical Water Splitting

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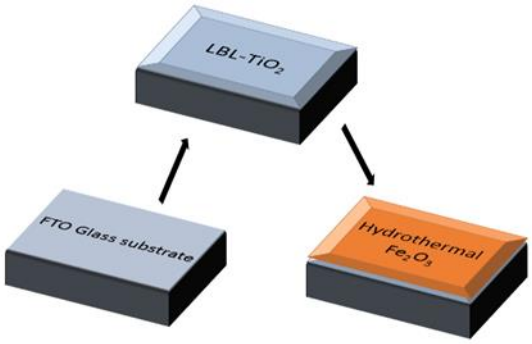
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I. Abstract

Conventionally water splitting was done using independent LBL or hydrothermal techniques. The aim of this research is providing a photoanode by combining both hydrothermal and layer by layer (LBL) methods, to get enhanced hydrogen from Fe_2O_3 and TiO_2 based photocatalytic water splitting. Firstly, TiO_2 layer were deposited on fluorine tin oxide (FTO) glass by layer by layer method. Furthermore, hematite (α-Fe_2O_3) thin film electrodes were synthesized by hydrothermal method deposited on TiO_2/FTO glass. According to this method, the prepared new designed photoanode Fe_2O_3/TiO_2/FTO illustrated significantly high photocatalytic activity. Thus, it is believed that, by mingling hydrothermal and LBL methods disclose, excellent performance of hydrogen production in photocatalytic water splitting, with good chemical stability, and capable of realizing low cost and large scale application can be provided.

II. Image:



III. Reference:

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IV. Biography:

Aryan has completed her PhD in 2016 in Nanotechnology and Advanced Materials Engineering from Sejong University (Seoul, South Korea) and Postdoctoral Studies from School of Bio Nano engineering, Chung Ang University, Seoul (South Korea). She had an excellent opportunity to work in ITECO-Korea as an R&D researcher developing 2D material based on conductive fibers. She has published several international journals and conference proceedings in her field of expertise.

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