

(54) Title of the invention : SYNTHESIS OF N-DOPED CARBON ANCHORED CoFe ELECTROCATALYST FOR WATER OXIDATION

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(57) Abstract :

ABSTRACT Synthesis of N-doped carbon anchored CoFe electrocatalyst for water oxidation. The present invention provides low-cost, simple synthetic route namely, flame synthetic method to prepare nitrogen doped carbon nanoparticles (NDCN NPs) with high surface area and high porosity which is used to prepare electrocatalyst CoFe@NDC NPs. The present invention has two steps of synthesis such as synthesis of N-doped turbostratic carbon nanoparticle soot (NDCN) occurred in well-ventilated fume hood chamber and synthesis of N-doped carbon anchored CoFe electrocatalyst. The obtained product is characterized by XRD, SEM with EDX, TEM, XPS and DRS for water splitting and potential required for water splitting is determined. The said electrocatalyst requires low over potential to split water and exhibit rapid kinetics.

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