Oxygen-deficient high-performance solar power station

Do Sno 2 NPS with no oxygen deficiency improve photovoltaic performance?
The SnO 2 NPs with no oxygen deficiency make large-area flexible PSCs possess photovoltaic performances significantly superiorto the counterpart of the conventionally used spin-coated SnO 2 films that contain oxygen vacancies,and the enhancement mechanisms are systematically investigated.

Is nbcfm a high-performance oxygen electrocatalyst based on a triple perovskite?
We report a high-performance oxygen electrocatalystbased on a triple perovskite,Nd 1.5 Ba 1.5 CoFeMnO 9-d (NBCFM),which shows superior activity and durability for oxygen electrode reactions to single and double perovskites.

Are perovskite solar cells a good candidate for next-generation photovoltaic devices?
(American Chemical Society) With a rapid progress in photovoltaic performance over the past several years,org.-inorg. perovskite solar cells (PSCs) have been regarded as a promising candidatefor next-generation photovoltaic devices such as lightwt. and flexible photovoltaic equipment and portable systems.

What is a bifunctional oxygen electrocatalyst?
Highly active and durablebifunctional oxygen electrocatalysts have been of pivotal importance for renewable energy conversion and storage devices,such as unitized regenerative fuel cells and metal-air batteries.

How does oxygen affect the chemical stability of HHPs?
However,oxygen can seriously underminethe chemical stability of HHPs due to the reaction of superoxide with protonated organic cations such as CH 3 NH 3+and [(NH 2) 2 CH]+,thus hindering the deep understanding of how oxygen affects their defect properties.

Does 40bl + 125np XY Sno 2 improve photovoltaic performance?
Statistical measurements also verified that the (40BL +125NP)-Oxy SnO 2 could significantly enhance photovoltaic performancesof the large-area flexible PSCs,compared to the conventional spin-coated SnO 2 (Figures 4 b and S5 and Table S2).

We report a high-performance oxygen electrocatalyst based on a triple perovskite, Nd 1.5 Ba 1.5 CoFeMnO 9-d (NBCFM), which shows superior activity and durability for oxygen electrode reactions to single and double perovskites. ...

As a promising anode material for supercapacitors, Fe 2 O 3 has been widely studied but still face the problem of low conductivity. Inducing oxygen vacancy (Vo) into Fe 2 ...

CeO 2 thin films-based devices are attracting interests of scientists due to ceria"s memory storage materials,

chemical and thermal stability, visible transparency, high oxygen ...

The as-obtained WO 3-x electrode reaches a high areal capacitance of 1.83 F cm -2 at 1 mA cm -2, and an outstanding electrochemical durability with high capacity retention of 74.8% after ...

made to improve their high-rate capability for applications where high power is a strict demand;11-14 but, the corrosive nature of alkaline electrolyte primarily limits the choice of the ...

Solar-microbial hybrid device based on oxygen-deficient niobium pentoxide anodes for sustainable hydrogen production+. Mingyang Li a, Xinjun He a, Yinxiang Zeng a, Meiqiong Chen ab, Ziyang Zhang a, Hao Yang a, Pingping ...

In this work, oxygen vacancies were created to activate tungsten trioxide (WO 3) as a highly efficient counter electrode (CE) in dye-sensitized solar cells (DSSCs). The levels of oxygen vacancies (OVs) in WO 3 were finely formed and tuned ...

Using density functional theory (DFT), the density of states of NH4V3O8 (NVO) was analyzed pre- and post-oxygen defect (Od) formation. The findings revealed a reduced bandgap in NVO after Od introduction, ...

O-passivated IHP solar cells exhibit enhanced power conversion efficiency (PCE) and better air stability than O 2-passivated cells. These results not only provide deep insights into the passivation effect of oxygen on perovskites but also ...

The preparation of metal oxide semiconductors in non-stoichiometric (oxygen-deficient) form can lead to significant change in their optical and electronic properties, and ...

The observed higher oxygen content in the synthesized oxygen deficient TiO 2 (T D) was a resultant effect of the oxidized nZVI on the TiO 2 nanoparticle. The oxygen deficiency was created when iron shared its excess ...

The photocatalytic activities of TiO2 have been limited mainly to absorbing in the ultraviolet spectrum which accounts for only 5% of solar radiation. High energy band gap and ...

The SnO 2 NPs with no oxygen deficiency make large-area flexible PSCs possess photovoltaic performances significantly superior to the counterpart of the conventionally used spin-coated SnO 2 films that contain oxygen vacancies, ...

The introduction of oxygen vacancies into MOs can effectively enhance their electrochemical properties without altering the inherent characteristics of MOs. This review discusses the ...

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Oxygen-deficient Li2MnO3-x (0 < x < 0.19) have been directly synthesized from lithium-rich manganese oxide, Li2MnO3, using metal hydrides (CaH2 and LiH) as reducing ...

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