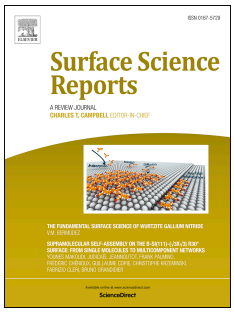
Accepted Manuscript



Regulating the surface of nanoceria and its applications in heterogeneous catalysis

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PII: S0167-5729(18)30010-4

DOI: 10.1016/j.surfrep.2018.02.001

Reference: SUSREP 457

To appear in: *Surface Science Reports*

Accepted Date: 2 February 2018

Please cite this article as: Y. Ma, W. Gao, Z. Zhang, S. Zhang, Z. Tian, Y. Liu, J.C. Ho, Y. Qu, Regulating the surface of nanoceria and its applications in heterogeneous catalysis, *Surface Science Reports* (2018), doi: 10.1016/j.surfrep.2018.02.001.

Regulating the Surface of Nanoceria and its Applications in Heterogeneous Catalysis

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Abstract

Ceria (CeO_2) as a support, additive, and active component for heterogeneous catalysis has been demonstrated to have great catalytic performance, which includes excellent thermal structural stability, catalytic efficiency, and chemoselectivity. Understanding the surface properties of CeO_2 and the chemical reactions occurred on the corresponding interfaces is of great importance in the rational design of heterogeneous catalysts for various reactions. In general, the reversible Ce^{3+}/Ce^{4+} redox pair and the surface acid-base properties contribute to the superior intrinsic