

### Effect of Rare-Earth Elements on Ceria Catalyst for CO Oxidation

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Ceria has received many research interests due to their extensive use in several environmental and energy related, and catalytic applications. The importance of ceria had primarily emerged from its oxygen storage capacity and redox catalytic property. Rare-earth metals have been used to modify the properties of ceria for technologically important catalysis, electrolyte, and various applications. In this study, two different compositions of rare-earth (RE=Pr, La, Nd, and Sm) doped ceria were synthesized by EDTA-citrate complexing method, which is capable of producing highly pure and homogeneous nano-powders. Then, the doped ceria nanoparticles were characterized by XRD and SEM, and the surface area was quantified by BET measurement. The CO oxidation catalytic performance was measured by GC (CO and O<sub>2</sub> in Ar gas condition). Our results will be useful to identify how the various RE dopants can effectively change the catalyst activity of CO oxidation on ceria.