

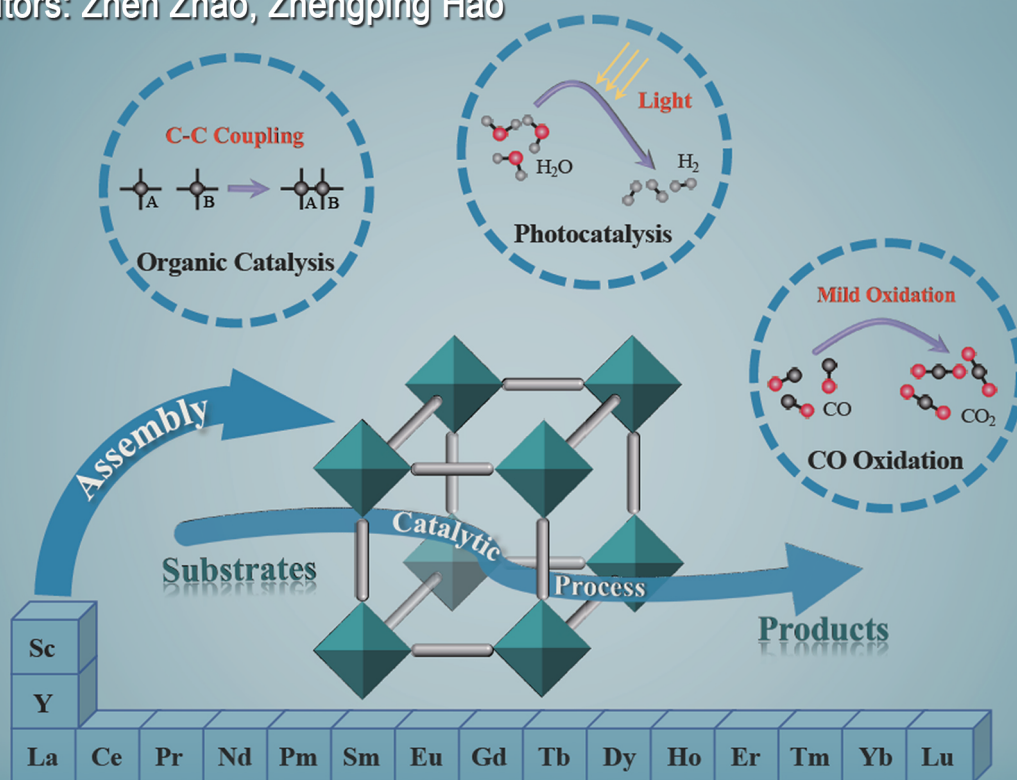
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# Journal of Rare Earths

Special Issue of Rare Earth Catalysis

Guest Editors: Zhen Zhao, Zhengping Hao



## Catalytic Application of RE-MOFs

Advances and Prospects of Rare Earth Metal-Organic  
Frameworks in Catalytic Applications



## Special Issue of Rare Earth Catalysis

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## Special Issue of Rare Earth Catalysis

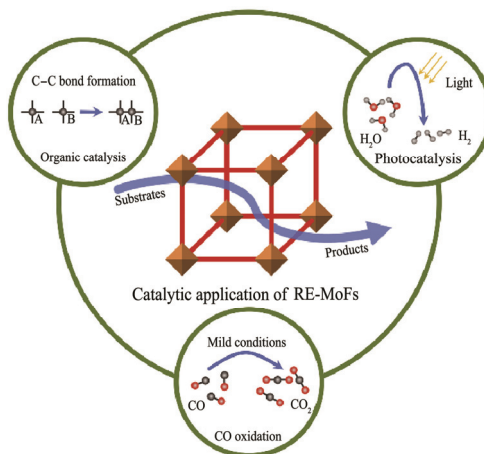
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## REVIEWS

- 801 Advances and prospects of rare earth metal-organic frameworks in catalytic applications

Xiaochen Sun, Kun Yuan, Yawen Zhang\*

*J. Rare Earths*, (38) 2020: 801-818

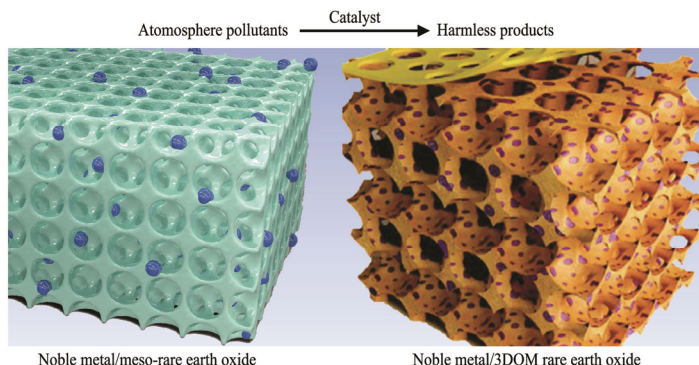


In recent years, rare earth metal-organic frameworks (RE-MOFs) have attracted great attention in heterogeneous catalysis because of their adjustable channel sizes, stable network structures and diversiform active sites. This review provides a systematic summary and prospect for catalytic applications of RE-MOFs from the following three aspects: organic catalysis, photocatalysis and CO oxidation catalysis

- 819 Rare earth oxides and their supported noble metals in application of environmental catalysis

Zhiquan Hou, Wenbo Pei, Xing Zhang, Kunfeng Zhang, Yuxi Liu, Jiguang Deng, Lin Jing, Hongxing Dai\*

*J. Rare Earths*, (38) 2020: 819-839

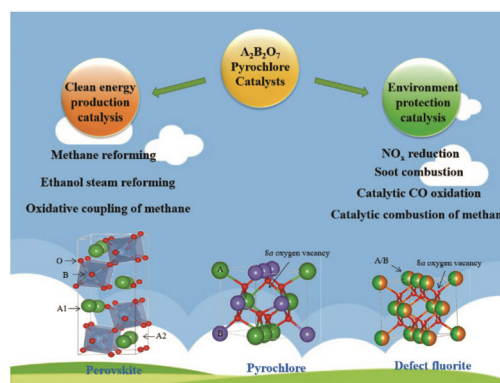


Heterogeneous catalysis is an effective pathway for the removal of atmosphere pollutants, in which rare earth-based oxides and their supported noble metals show good catalytic performance. Several factors, such as specific surface area, pore structure, particle size and dispersion, adsorbed oxygen species concentration, reducibility, reactant activation ability, and interaction between metal nanoparticles and support, can influence catalytic performance of these materials

- 840  $A_2B_2O_7$  pyrochlore compounds: A category of potential materials for clean energy and environment protection catalysis

Junwei Xu, Rong Xi, Xianglan Xu, Yan Zhang, Xiaohui Feng, Xiuzhong Fang, Xiang Wang\*

*J. Rare Earths*, (38) 2020: 840-849

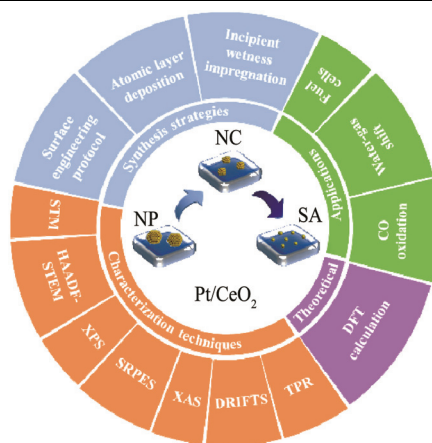


Pyrochlores are a type of potential and promising catalysts for clean energy production and environment protection catalysis. The structure and reactivity can be finely tuned by changing the A and B site cations. From the point of view of fundamental research and industrial application, it deserves further study on the preparation and properties of this type of interesting composite oxides

- 850 From nanoparticles to single atoms for Pt/CeO<sub>2</sub>: Synthetic strategies, characterizations and applications

Ying Xin, Nana Zhang, Yanan Lv, Jin Wang, Qian Li, Zhaoliang Zhang\*

*J. Rare Earths*, (38) 2020: 850-862



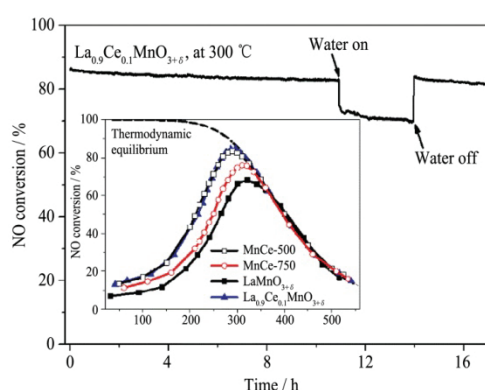
Pt<sub>1</sub>/CeO<sub>2</sub> realized maximum atom efficiency, does it mean maximized activity per atom? This review summarizes the state-of-the-art evolution of Pt metal from NPs to NCs and SAs. The real role of SAs playing in catalytic mechanism is still a pending issue for this hot topic

## PAPERS

- 863 Comparative study of La<sub>1-x</sub>Ce<sub>x</sub>MnO<sub>3+δ</sub> perovskites and Mn-Ce mixed oxides for NO catalytic oxidation

Baohuai Zhao, Rui Ran\*, Liu Yang, Xiaodong Wu, Zhichun Si, Duan Weng

*J. Rare Earths*, (38) 2020: 863-872

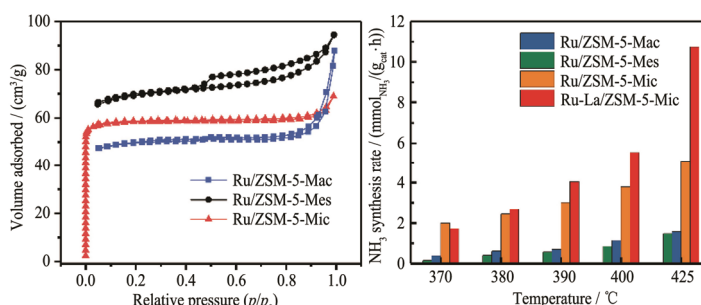


La<sub>0.9</sub>Ce<sub>0.1</sub>MnO<sub>3+δ</sub> exhibits the best NO catalytic oxidation performance among the perovskite and Mn-Ce mixed oxide catalysts. La<sub>0.9</sub>Ce<sub>0.1</sub>MnO<sub>3+δ</sub> shows stable activity and good H<sub>2</sub>O tolerance during the long term reaction. Mn-Ce mixed oxide calcined at 500 °C has comparable activity to La<sub>0.9</sub>Ce<sub>0.1</sub>MnO<sub>3+δ</sub>, but the activity decreases a lot when the calcination temperature is changed into 750 °C

- 873 Effect of pore-size distribution on Ru/ZSM-5 catalyst for enhanced N<sub>2</sub> activation to ammonia via dissociative mechanism

Jihui Cai, Congying Wang, Yi Liu, Jun Ni, Bingyu Lin, Xiuyun Wang\*\*, Jianxin Lin, Lilong Jiang\*

*J. Rare Earths*, (38) 2020: 873-882

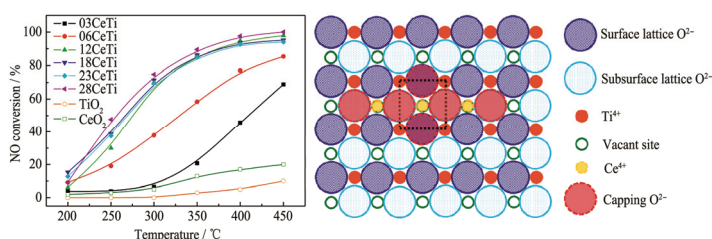


The pore-size distributions play an important role in NH<sub>3</sub> synthesis over Ru supported ZSM-5 catalyst. The effect of addition of La on Ru/ZSM-5-Mic for NH<sub>3</sub> synthesis was also investigated

- 883 Influence of CeO<sub>2</sub> loading on structure and catalytic activity for NH<sub>3</sub>-SCR over TiO<sub>2</sub>-supported CeO<sub>2</sub>

Hongliang Zhang, Long Ding, Hongming Long\*\*\*, Jiaxin Li, Wei Tan, Jiawei Ji, Jingfang Sun, Changjin Tang\*\*, Lin Dong\*

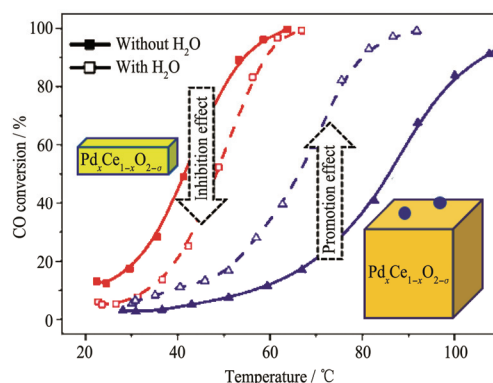
*J. Rare Earths*, (38) 2020: 883-890



The activity of CeO<sub>2</sub>/TiO<sub>2</sub> catalyst is closely related to the loading amount of CeO<sub>2</sub>. When the loading amount of CeO<sub>2</sub> is near the dispersion capacity, the catalytic activity is better

- 891 Effects of water on CO catalytic oxidation over Pd/CeO<sub>2</sub>

Shaofei Song, Cheng Zhang, Yake Lou,  
Yujin Wu, Li Wang\*\*, Yanglong Guo,  
Wangcheng Zhan, Yun Guo\*

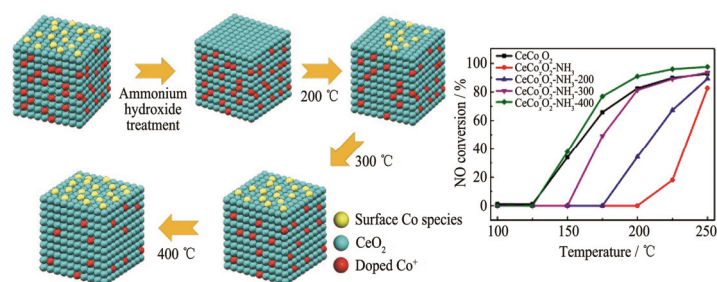


The presence of water promotes CO adsorption on metal Pd species and explores a new reaction pathway boosting CO oxidation

*J. Rare Earths*, (38) 2020: 891-898

- 899 Regeneration of deactivated CeCo<sub>x</sub>O<sub>2</sub> catalyst by simple thermal treatment

Yandi Cai, Lihua Wang, Shuohan Yu,  
Jingfang Sun, Baochun Liu\*\*, Lin Dong\*

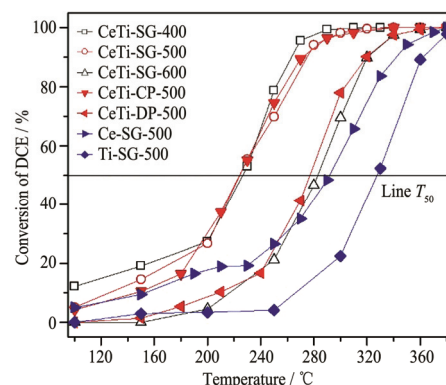


Deactivated catalysts prepared by co-precipitation method could be regenerated by a simple thermal treatment, because Co species in its bulk phase can migrate to catalyst surface during the thermal treatment. Increasing regeneration temperature can accelerate the migration of Co species, which leads to the enhancement of NO+CO performances

*J. Rare Earths*, (38) 2020: 899-905

- 906 High activity of CeO<sub>2</sub>-TiO<sub>2</sub> composites for deep oxidation of 1,2-dichloroethane

Jialu Wang, Zhinan Shi, Renxian Zhou\*

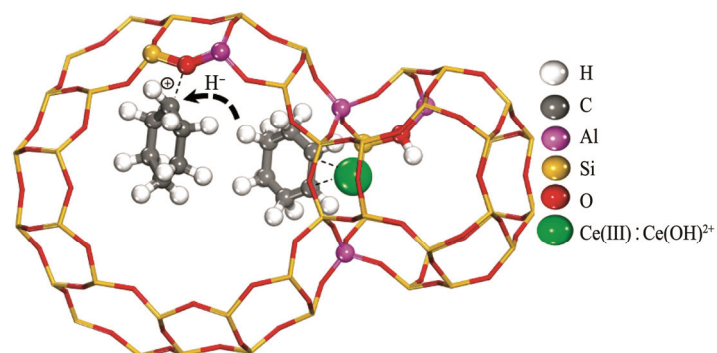


The CeTi-SG-500 and CeTi-CP-500 catalysts prepared by sol-gel and coprecipitation methods exhibit much higher catalytic activity. The promoting reducibility and mobility of active oxygen species caused by the strong interaction between CeO<sub>2</sub> and TiO<sub>2</sub> are crucial for the deep oxidation of DCE at low temperature

*J. Rare Earths*, (38) 2020: 906-911

- 912 Synergistic mechanism between Brøsted acid site and active cerium species in hydride transfer reaction over CeY zeolites

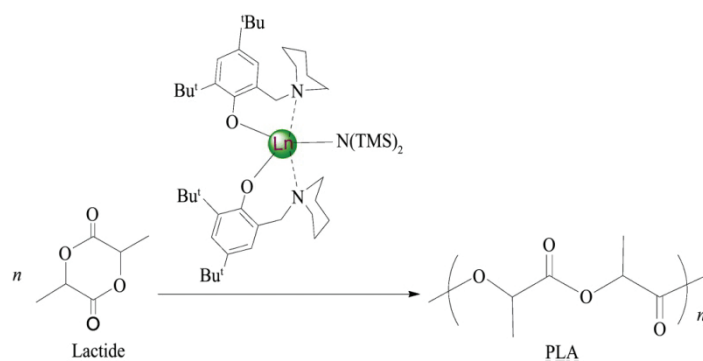
Jianhao Jiao, Yucai Qin\*\*, Jian Zheng,  
Yu Hui, Li Zhang, Xionghou Gao,  
Lijuan Song\*



Mechanism diagram of the synergistic mechanism of hydride transfer reaction of cyclohexene over CeY zeolites

*J. Rare Earths*, (38) 2020: 912-920

Min Li, Wenyi Li, Yingming Yao\*,  
Yunjie Luo\*\*



Aminophenolate-ligated lanthanide mono(amide) complexes  $[ON]_2LnN(TMS)_2$  ( $Ln =$  Yb, Y, Gd, Sm, Nd) were prepared via amine elimination, and serve as highly active initiators for the ring-opening polymerization of *L*-lactide and *rac*-lactide polymerization

*J. Rare Earths*, (38) 2020: 921-926