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Vol. 36 No. 6 (June 2018)

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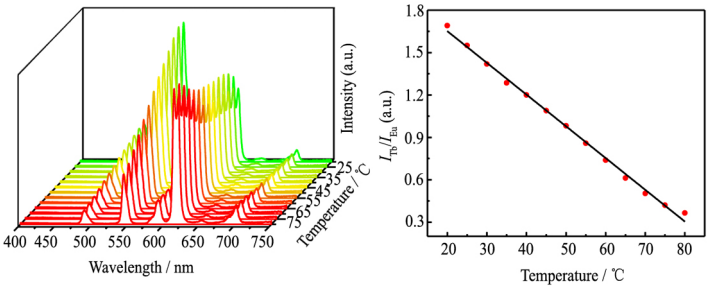
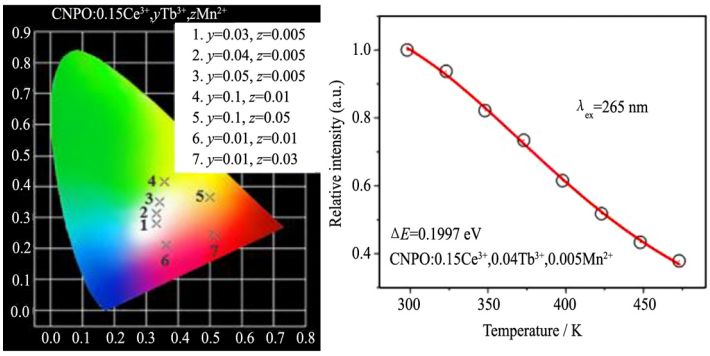
SPECTROSCOPY, LUMINESCENCE AND PHOSPHORS

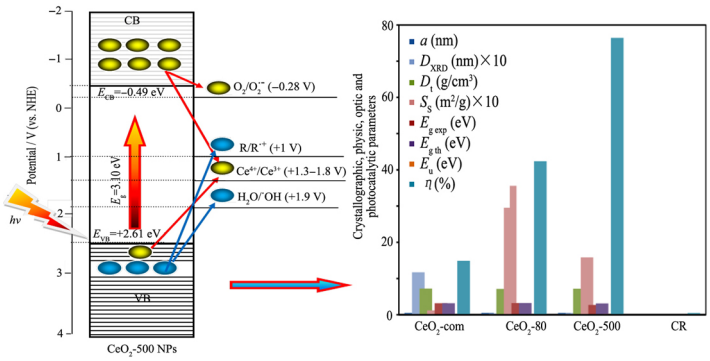


A highly sensitive mixed-lanthanide metal-organic framework has been explored for ratiometric and colorimetric luminescent temperature sensing in the physiological range

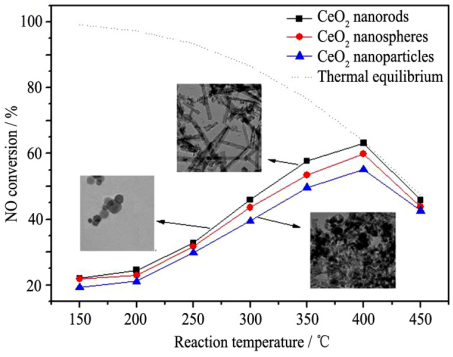


By modulating the relative content of Tb^{3+}/Mn^{2+}, white light-emitting CNPO:0.15Ce^{3+}, 0.04Tb^{3+},0.005Mn^{2+} phosphor with good thermal stability has been obtained

RARE EARTH CATALYSIS



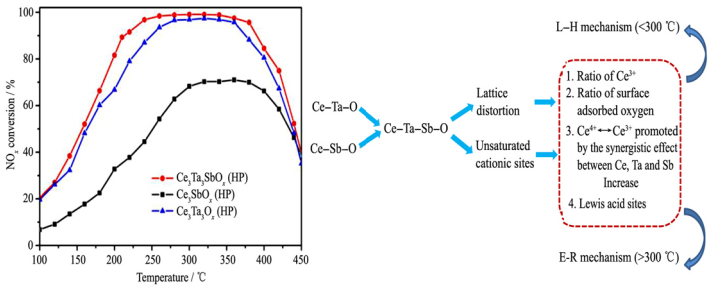
Photocatalytic performance of CeO_2-500 NPs in the course of Congo red azo-dye degradation



CeO_2 nanorods showed the best catalytic performance for NO oxidation, which could be ascribed to its low crystallinity, high reducibility, strong NO adsorption ability and the presence of more surface chemisorbed oxygen

594 Promoting effect of tantalum and antimony additives on deNO$_x$ performance of $Ce_3Ta_3SbO_x$ for NH_3-SCR reaction and DRIFT studies

Ning Liu, Jingyu Wang, Fengying Wang, Jun Liu

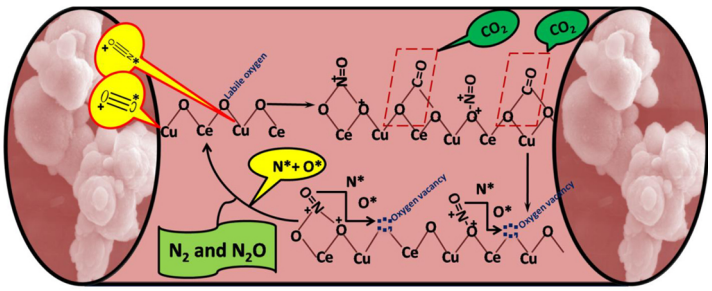


A superior Ce-Ta-Sb composite oxide catalyst exhibited excellent deNO$_x$ efficiency with broad operation temperature window and better resistance to higher space velocity, which is attributed to the elevated Ce^{3+} concentrations, abundant active surface oxygen species, as well as surface acidity and reducibility

J. Rare Earths, (36) 2018: 594-602

603 Effective removal of automobile exhausts over flower-like $Ce_{1-x}Cu_xO_2$ nanocatalysts exposed active {100} plane

A. Selvamani, K. Shanthi, D. Santhanaraj, C.M. Babu, V.V. Srinivasan, P. Thirukumaran, V. Ramkumar, A. Shakilaparveen, R. Balasubramanian



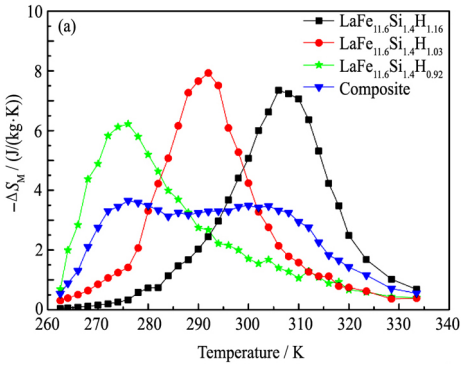
Study on low temperature oxidation of automobile exhausts on flower-like $Ce_{1-x}Cu_xO_2$ catalysts

J. Rare Earths, (36) 2018: 603-612

MAGNETISM AND MAGNETIC MATERIALS

613 Table-like magnetocaloric effect and large refrigerant capacity of composite magnetic refrigerants based on $LaFe_{11.6}Si_{1.4}H_y$ alloys

Lingtong Zhou, Yongbai Tang, Yungui Chen, Huaqiang Guo, Wenkai Pang, Xi Zhao

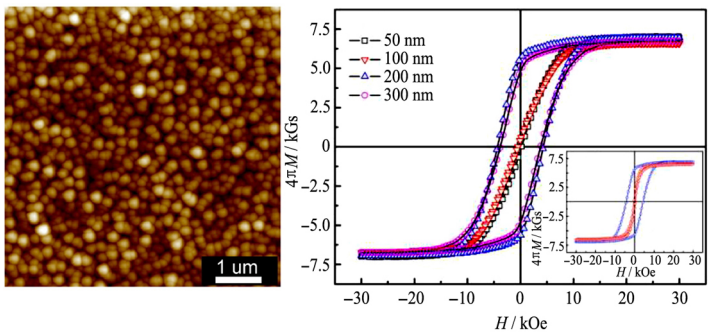


Composite magnetic refrigerant possessed wide operating temperature range, large RC value and a table-like ($-\Delta S_M$)-T curve for Ericsson-cycle

J. Rare Earths, (36) 2018: 613-618

619 Effect of magnetic layer thickness on magnetic properties of Ce-Fe-B thin films

Yachao Sun, Minggang Zhu, Wei Liu, Rui Han, Wei Li



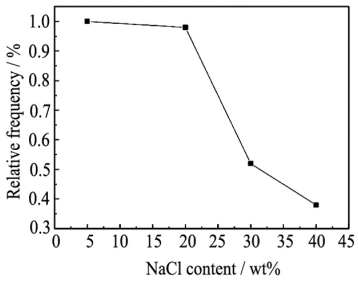
The AFM image for the Si/Ta(50 nm)/Ce-Fe-B(200 nm)/Ta(40 nm) thin film (left) and perpendicular hysteresis loops for Ce-Fe-B films with the various magnetic layer thicknesses of d_m = 50, 100, 200 and 300 nm at room temperature (right)

J. Rare Earths, (36) 2018: 619-622

ADVANCED RARE EARTH MATERIALS

623 Submicron LaB_6 powders with high purity prepared in large scale by salt-assisted combustion synthesis

Zhengning Li, Yujing Ou, Peiqing La, Yu Shi

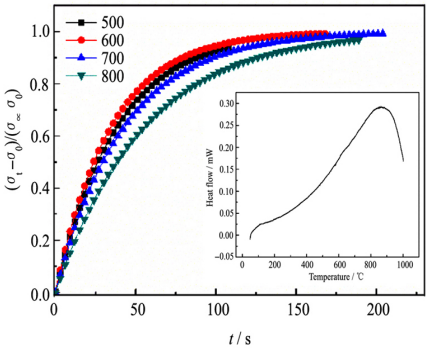


The superfine and high-purity powders of LaB_6 were synthesized in large scale by salt-assisted combustion synthesis (CS) with different NaCl diluent contents. With the increase of NaCl content, the adiabatic combustion temperature of the reaction system linearly declined, the average particle size of leached products decreased, and the product purity enhanced obviously. When NaCl content is 40 wt%, the purity is more than 98 wt%, and the average particle size is 380 nm

J. Rare Earths, (36) 2018: 623-629

630 Absorption behavior of lattice oxygen in $Ce_{0.8}Y_{0.2}O_{2-\delta}$ at intermediate temperature

Chencen Sun, Guanzhong He, Liangchao Gao, Shaolei Song, Rong Li, Qiang Zhen

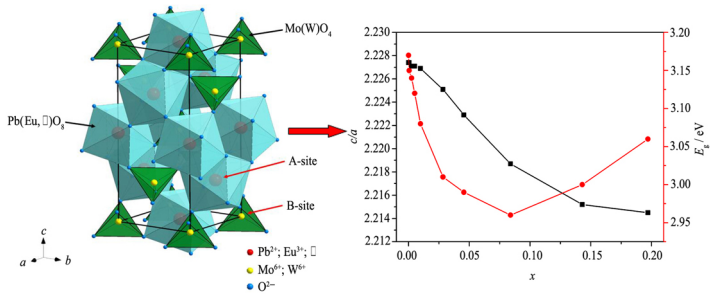


ECR data at different temperatures describe migration process of oxygen vacancies at different temperatures, suggesting that the oxygen diffusion process may be prolonged with the temperature evaluation. The illustration is the TG curve of YDC nanopowders, the increasing weight at the intermediate temperature range is related to the lattice oxygen absorption and oxygen vacancies consumption in YDC samples

J. Rare Earths, (36) 2018: 630-634

635 Structural, morphological and optical properties of new Eu-doped and vacancied lead molybdato-tungstates

M. Piątkowska, E. Tomaszewicz



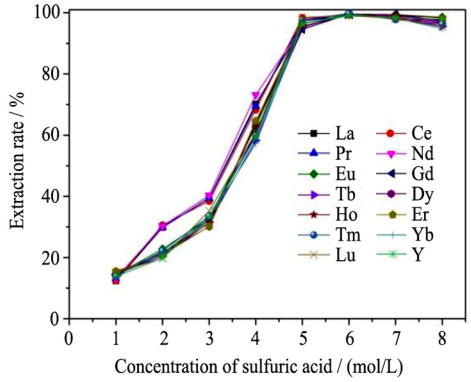
Structure of $Pb_{1-3x}\square_xEu_{2x}(MoO_4)_{1-3x}(WO_4)_{3x}$ solid solution and the variation in lattice parameter ratio c/a as well as E_g with x parameters

J. Rare Earths, (36) 2018: 635-641

CHEMISTRY AND HYDROMETALLURGY

642 Extraction and back-extraction behaviors of 14 rare earth elements from sulfuric acid medium by TODGA

Huiting Yuan, Weixiang Hong, Yushan Zhou, Baisong Pu, Aijun Gong, Tao Xu, Qishan Yang, Fukai Li, Lina Qiu, Weiwei Zhang, Yuning Liu



The extraction efficiency of the solution is distinctly influenced by the acidity of the system, and the optimum extraction acidity can be explored by changing the gradient experiment of sulfuric acid concentration. The optimum concentration of sulfuric acid is 6 mol/L. Meanwhile, the extraction rates of rare earth metal ions by TODGA were 99.00%–99.73%

J. Rare Earths, (36) 2018: 642-647

METALLOGRAPHY AND PYROMETALLURGY

RARE EARTH APPLICATIONS