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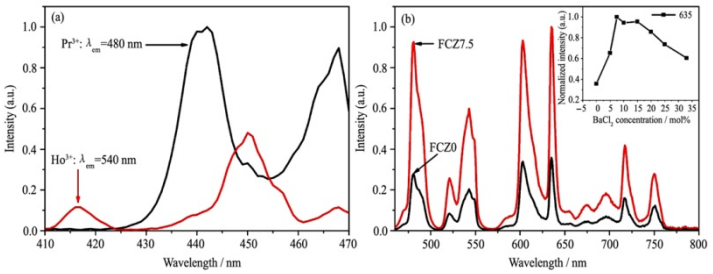
139 Effect of chloride on spectrum properties of Pr^{3+}/Ho^{3+} co-doped fluorozirconate glasses

Ya Zou, Yajie Wang, Shuai Han, Ying Du, Danping Chen, Qiuhong Yang

J. Rare Earths, (38) 2020: 139-142

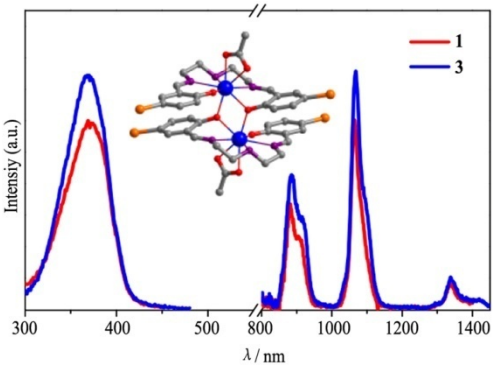


The luminescence intensity enhances with the increase of $BaCl_2$ concentration and then decreases gradually at higher $BaCl_2$ concentration. The luminescence intensity reaches the maximum and increases about three times when the $BaCl_2$ concentration is 7.5 mol%

143 Construction of NIR luminescent nanoscale lanthanide complexes with new flexible Schiff base ligands

Bichen Yuan, Junbin Tao, Fei Wang, Chaoqun Zhu, Min Li, Xiaoping Yang

J. Rare Earths, (38) 2020: 143-147



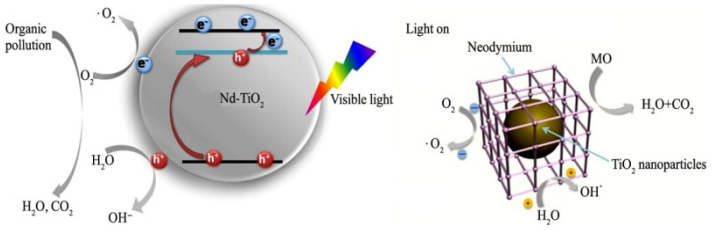
Four mono- and bi-nuclear lanthanide complexes were prepared using two new flexible long-chain Schiff base ligands and their NIR luminescence properties were investigated

RARE EARTH CATALYSIS

148 Enhanced photocatalytic activities of Nd-doped TiO_2 under visible light using a facile sol-gel method

Jicai Liang, Jingya Wang, Kexian Song, Xiaofeng Wang, Kaifeng Yu, Ce Liang

J. Rare Earths, (38) 2020: 148-156

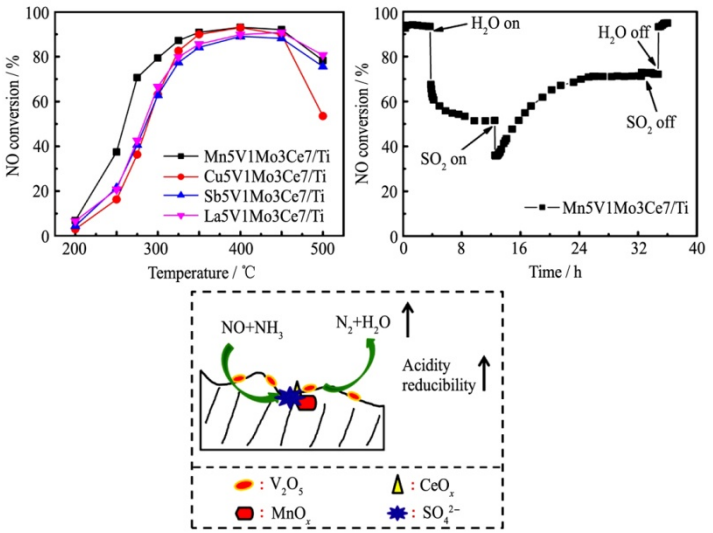


Titanium dioxide nanoparticles modified with neodymium were prepared with template-free sol-gel method. The photocatalytic activity of the obtained samples was evaluated by photodegradation of methyl orange in aqueous solution under ultraviolet-visible and visible irradiation. The experimental results show that the 1 mol% Nd-doped TiO_2 exhibits the highest degradation of 96.5% under visible irradiation. The modification has made an obvious promotion of photocatalyst activity

157 Effects of MO_x (M=Mn, Cu, Sb, La) on V–Mo–Ce/Ti selective catalytic reduction catalysts

Daojun Zhang, Ziran Ma, Baodong Wang, Qi Sun, Wenqiang Xu, Tao Zhu

J. Rare Earths, (38) 2020: 157-166

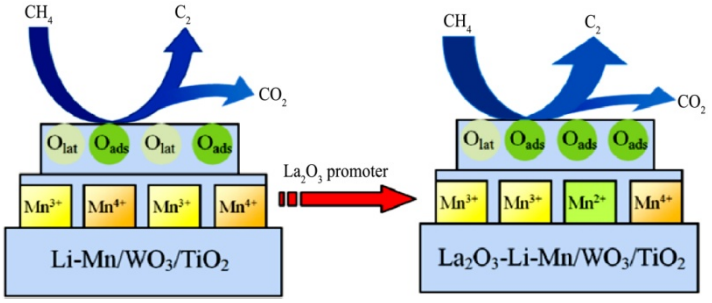


Mn5V1Mo3Ce7/Ti exhibits the best SCR performance. The acidity and reducibility of V1Mo3Ce7/Ti are enhanced by the addition of Mn. The sulphate species formed in the presence of SO_2 significantly enhance the H_2O and SO_2tolerance of Mn5V1Mo3Ce7/Ti

167 Enhancement of La_2O_3 to Li-Mn/WO_3/TiO_2 for oxidative coupling of methane

Fei Cheng, Jian Yang, Liang Yan, Jun Zhao, Huahua Zhao, Huanling Song, Ling Jun Chou

J. Rare Earths, (38) 2020: 167-174

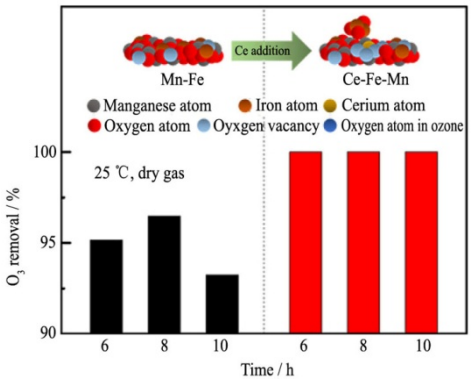


The incorporation of La_2O_3 alters the Mn valence state and oxygen property of the catalysts, which control the reaction performance

175 Ce–Fe–Mn ternary mixed-oxide catalysts for catalytic decomposition of ozone at ambient temperatures

Xiao Chen, Zhenglong Zhao, Shuo Liu, Jinxing Huang, Jing Xie, Ying Zhou, Zhiyan Pan, Hanfeng Lu

J. Rare Earths, (38) 2020: 175-181



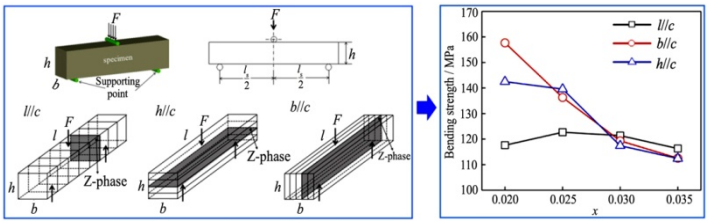
The Ce-Fe-Mn ternary mixed oxide catalyst displays better catalytic activity for O_3 decomposition than Mn-Fe binary mixed oxide catalyst. This superior activity that can be ascribed to the addition of a small amount of Ce into Mn-Fe mixed oxides causes lattice distortion. Fe separated out to form Fe_2O_3, and the defects increased, forming more oxygen vacancies

MAGNETISM AND MAGNETIC MATERIALS

182 Zirconium content induced mitigation of mechanical anisotropy in 2:17 type SmCo magnets

Guanghui Yan, Zhuang Liu, Yanping Feng, Weixing Xia, Chaoyue Zhang, Guangqing Wang, Aru Yan

J. Rare Earths, (38) 2020: 182-187

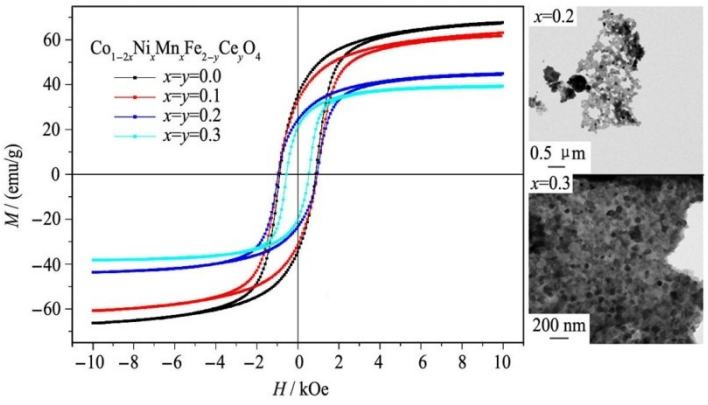


With increasing content of Zr in $Sm(Co_{bal}Fe_{0.09}Cu_{0.09}Zr_x)_{7.68}$ magnets, the mechanical anisotropy is reduced. The increasing density of Z-phase induced by Zr content could make the decrease of bending strength in the case of loading *F* parallel to the *c*-axis of the magnets. The bending strength of the magnets with high Zr content under loading *F* perpendicular to the *c*-axis seems to be slightly higher than other two cases, which might be related to atom substitutions and crystal lattice distortion

188 Synthesis and characterization of $Co_{1-2x}Ni_xMn_xCe_yFe_{2-y}O_4$ nanoparticles

Munirah Abdullah Almessiere, Yassine Slimani, Abdulhadi Baykal

J. Rare Earths, (38) 2020: 188-194



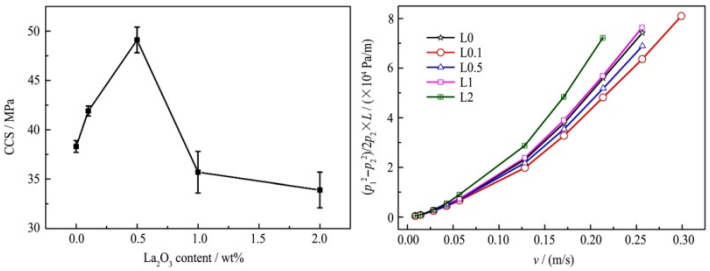
$Co_{1-2x}Ni_xMn_xFe_{2-y}Ce_yO_4$ ($0.0 \le x=y \le 0.3$) nanoparticles were successfully prepared by sol-gel auto-combustion method. All prepared samples exhibit soft ferromagnetic behavior

ADVANCED RARE EARTH MATERIALS

195 Enhancing mechanical properties and air permeability of corundum porous materials by *in situ* formation of $LaAl_{11}O_{18}$ in bonding phase

Xin Xiong, Zhoufu Wang, Xitang Wang, Hao Liu, Yan Ma

J. Rare Earths, (38) 2020: 195-202



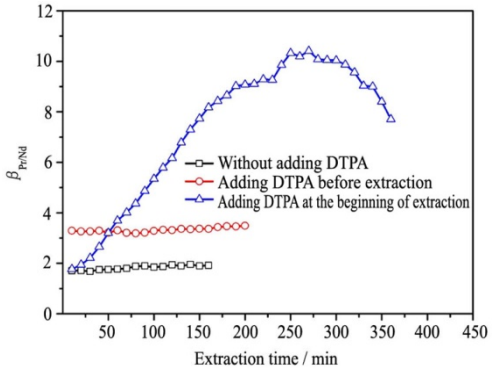
In this work, effects of *in situ* formed $LaAl_{11}O_{18}$ on the mechanical property and air permeability of corundum porous materials of particle-packing type were investigated. With a certain amount of La_2O_3 added,CCS and air permeability of the porous materials can be enhanced

CHEMISTRY AND HYDROMETALLURGY

203 Enhanced separation of praseodymium and neodymium by kinetic "push and pull" system of [A336][NO_3]-DTPA in a column extractor

Xiaoqin Wang, Kun Huang, Wenjuan Cao, Pan Sun, Na Sui, Weiyuan Song, Huizhou Liu

J. Rare Earths, (38) 2020: 203-212



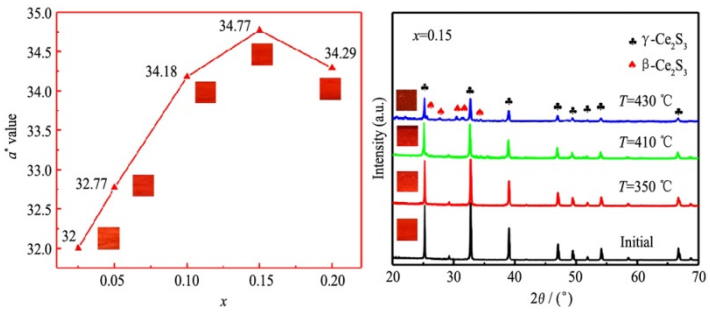
The separation between praseodymium and neodymium can be improved due to the kinetic "push and pull" effect from the rate order of Pr(III) and Nd(III) ions forming water-soluble complexes with DTPA in aqueous solutions being opposite to that of their extraction by [A336][NO_3] oil droplets in column extractor

RARE EARTH APPLICATIONS

213 Effect of Sr^{2+} and Dy^{3+} co-doping on coloration and temperature stabilization of a γ-Ce_2S_3 red pigment

Yueming Li, Qi Liu, Fusheng Song, Zhumei Wang, Zongyang Shen, Yan Hong

J. Rare Earths, (38) 2020: 213-218



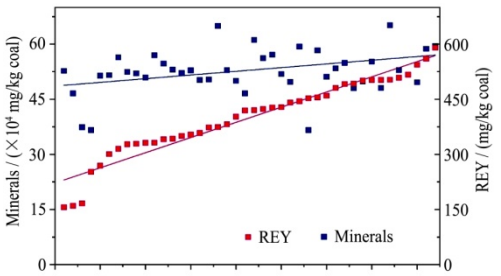
A series of environment-friendly red pigments Sr^{2+} and Dy^{3+} co-doped γ-Ce_2S_3 were synthesized at 730 °C. The best red-color quality (L^*=37.13, a^*=34.77, b^*=29.44) is achieved when the pigment has a Dy^{3+}/Ce^{3+} molar ratio of 0.15, and the material maintains its excellent red color (L^*=31.49, a^*=30.94, b^*=25.33) after being heated at 410 °C for 30 min

GEOLOGY AND ORE DRESSING

219 Rare earth elements of fly ash from Wyoming's Powder River Basin coal

Zaixing Huang, Maohong Fan, Hanjing Tian

J. Rare Earths, (38) 2020: 219-226



The concentrations of rare earth elements derived from Powder River Basin coal are found to be scattered. However, the analysis shows that the rare earth element concentration is positively correlated to the mineral concentration, suggesting that the form of minerals might have impacts on the enrichment/detainment of rare earth elements which implies an alternative way of rare earth element beneficiation from coal fly ash