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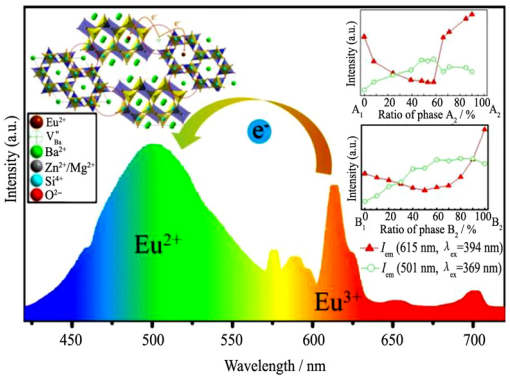
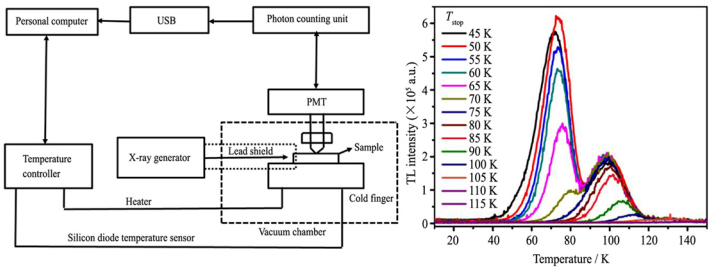
CONTENTS

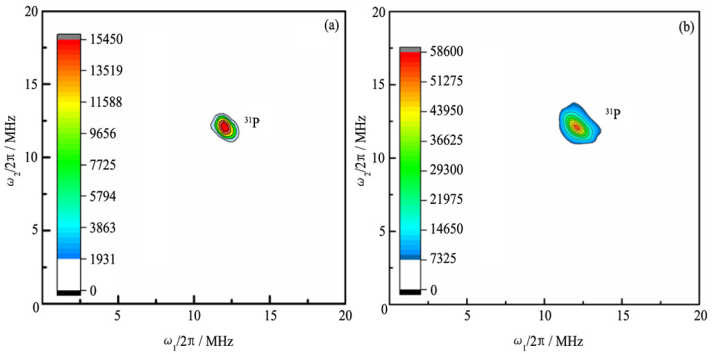
SPECTROSCOPY, LUMINESCENCE AND PHOSPHORS



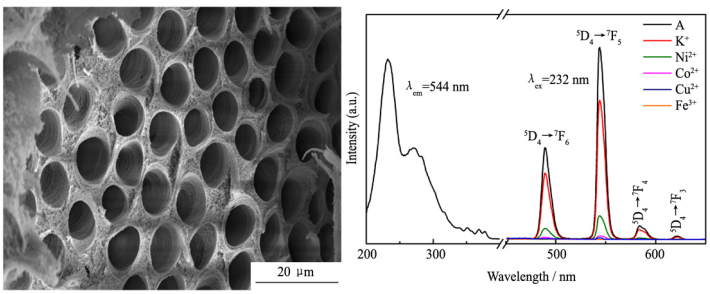
A series of diphase phosphors $(1–x)BaMSiO_4$·$xBa_2MSi_2O_7$:Eu ($M=Zn^{2+}$, Mg^{2+}) was designed and synthesized. The self-reduction ability of Eu^{3+} ions and the luminescent color of the phosphors can be tuned by the diphase composition, which provide a new idea to prepare tunable luminescent materials



Schematic diagram of the low temperature TL experimental setup and TL curves of LLGBO crystal with various T_{stop}



Local environment of Nd can be characterized by EPR. The larmor frequencies of ^{29}Si, ^{27}Al and ^{31}P are 5.9, 7.8 and 12.1 MHz in this experiment, respectively. Clearly to see, Nd ions are completely coordinated with P atoms. It is beneficial for Nd ions to obtain good dispersion and large emission cross section in glass



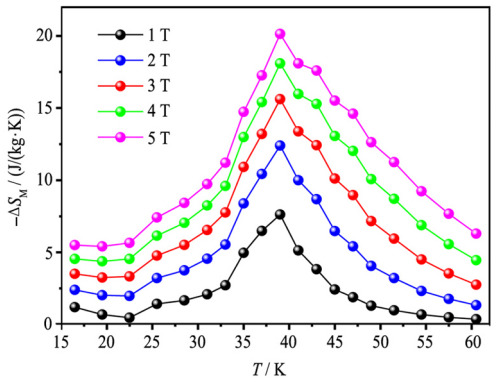
Hierarchical porous hybrid materials containing carboxymethyl cellulose and lanthanide ions were prepared by a facile method. These new photoluminescent materials can detect Fe^{3+} with relative selectivity and high sensitivity, which suggests that the hybrid materials could be a promising luminescent probe for selectively sensing Fe^{3+} ion

MAGNETISM AND MAGNETIC MATERIALS

1044 Magnetic properties and large magnetocaloric effects of GdPd intermetallic compound

Jianjun Huo, Yusong Du, Gang Cheng, Xiaofei Wu, Lei Ma, Jiang Wang, Zhengcai Xia, Guanghui Rao

J. Rare Earths, (36) 2018: 1044-1049



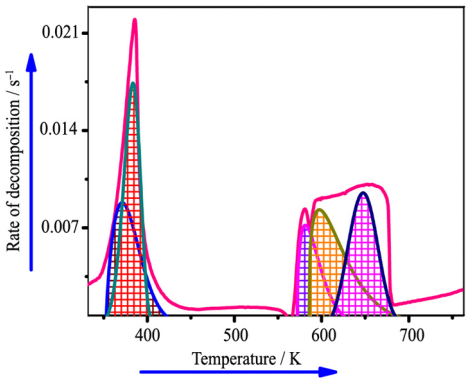
A large reversible MCE without thermal and magnetic hysteresis has been observed in GdPd. The maximum values of the magnetic entropy change ($|\Delta S_M^{Max}|$) amount to 12.40 and 20.14 J/(kg·K) for GdPd under magnetic field changes of 2 and 5 T, respectively

ADVANCED RARE EARTH MATERIALS

1050 Synthesis, evaluation of kinetic characteristics and investigation of apoptosis of Cu^{2+}-modified ceria nano discs

K. Nusrath, K. Muraleedharan

J. Rare Earths, (36) 2018: 1050-1059

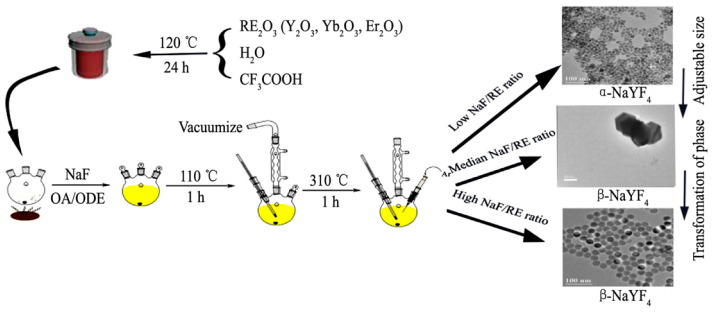


Synthesis of ceria 3D nano disc was performed. Effect of the ceria lattice doping with Cu^{2+} was studied. E_a values were estimated by Friedman plot. *In vitro* with cancer cells revealed improved cytotoxicity

1060 Size, phase-controlled synthesis, the nucleation and growth mechanisms of $NaYF_4$:Yb/Er nanocrystals

Songtao Liu, Gejihu De, Yueshan Xu, Xian Wang, Yuanyuan Liu, Chunyan Cheng, Jianxun Wang

J. Rare Earths, (36) 2018: 1060-1066

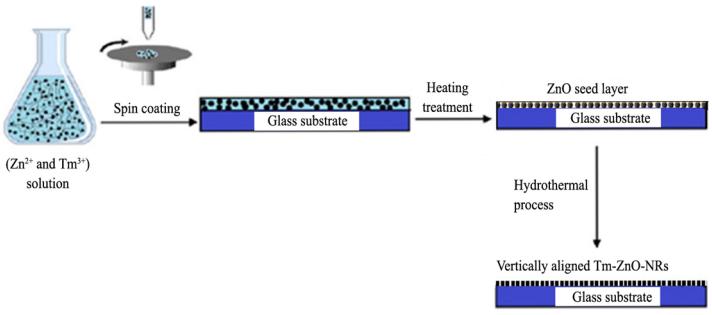


The high-quality upconversion nanoparticles were synthesized by thermal decomposition metal trifluoroacetate, and the precursors were prepared via hydrothermal route. The effect of the molar ratio of NaF to RE (RE=Y, Yb, Er) on phase transition and size-controll of the nanoparticles were studied

1067 Tm-doped ZnO nanorods as a TCO for PV applications

Hakan Çolak, Ercan Karaköse

J. Rare Earths, (36) 2018: 1067-1073

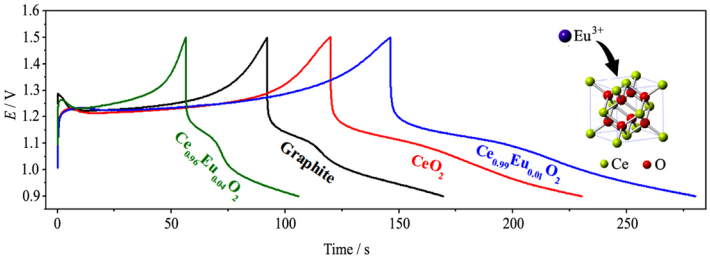


Tm-doped ZnO nanorods production steps

1074 Characterization and electrochemical performance of CeO_2 and Eu-doped CeO_2 films as a manganese redox flow battery component

Mônica A. Rodrigues, Ariadne C. Catto, Elson Longo, Edson Nossol, Renata C. Lima

J. Rare Earths, (36) 2018: 1074-1083



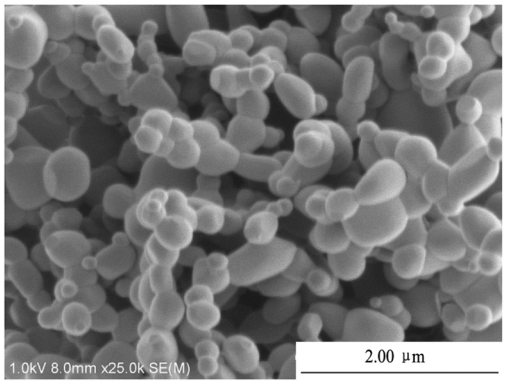
Galvanostatic charge-discharge results showed the influence of ions Eu^{3+} concentration on the electrochemical properties of CeO_2 films

CHEMISTRY AND HYDROMETALLURGY

1084 Green synthesis of ceria powders with special physical properties by carbon dioxide carbonization

Zongyu Feng, Xiaowei Huang, Meng Wang, Xu Sun, Yang Xu, Qiannan Xue, Shiliang Chen

J. Rare Earths, (36) 2018: 1084-1089

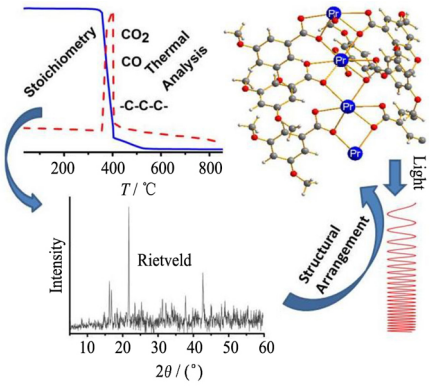


SEM image of ceria with special properties

1090 Synthesis and structure of a praseodymium (III) complex with carboxylate ligand: A thermal and spectroscopic study

Kátia Veronica Tenório, José Augusto Teixeira, Leandro Moreira de Campos Pinto, Flávio Júnior Caires, Oswaldo Treu-Filho, Fábio Alencar dos Santos, Tiago André Denck Colman, Alexandre Cuin, Cláudio Teodoro de Carvalho

J. Rare Earths, (36) 2018: 1090-1097

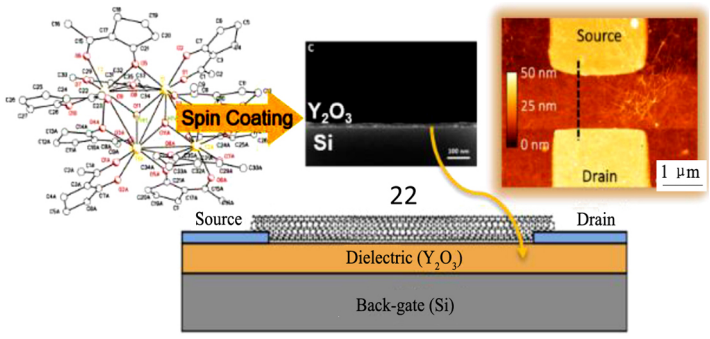


Rare earth complex: systems, structural elucidation and optical property

1098 Tetranuclear yttrium and gadolinium 2-acetylcyclopentanoate clusters: Synthesis and their use as spin-coating precursors for metal oxide film formation for field-effect transistor fabrication

Elaheh Pousaneh, Andrea Preuß, Khaybar Assim, Tobias Rüffer, Marcus Korb, Jana Tittmann-Otto, Sascha Hermann, Stefan E. Schulz, Heinrich Lang

J. Rare Earths, (36) 2018: 1098-1105



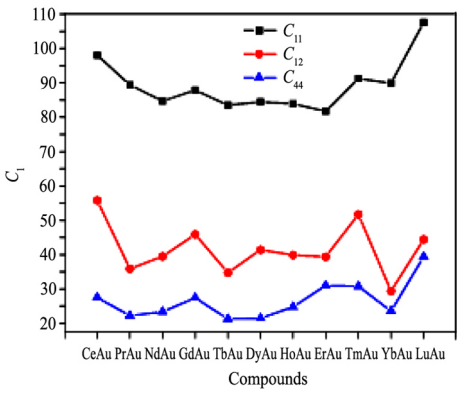
Spin-coating precursors for metal oxide film formation for field-effect transistor fabrication

METALLOGRAPHY AND PYROMETALLURGY

1106 Strongly correlated intermetallic rare-earth monoaurides (Ln-Au): *Ab-initio* study

Sardar Ahmad, M. Shafi, Rashid Ahmad, S. Jalali-Asadabadi, Iftikhar Ahmad

J. Rare Earths, (36) 2018: 1106-1111



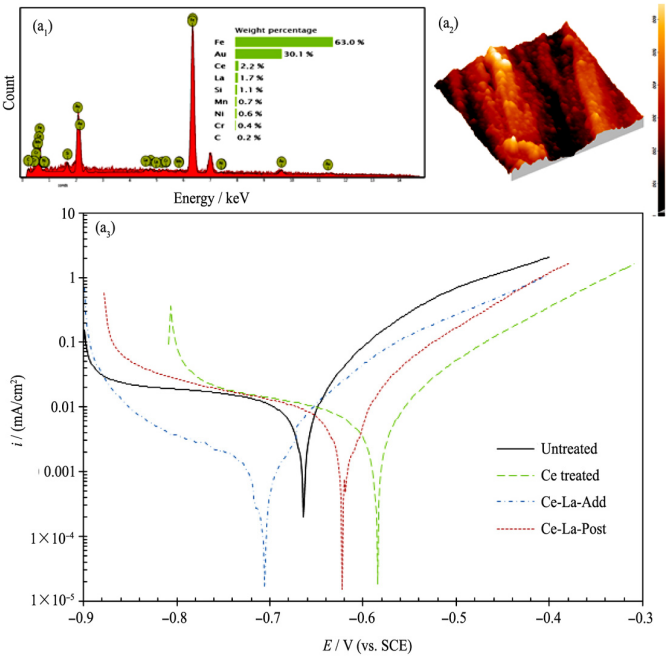
Comparison of elastic constants, C_{ij} of rare earth monoaurides

RARE EARTH APPLICATIONS

1112 Influence of lanthanum as additive and post-treatment on the corrosion protection properties and surface morphology of mild steel chemically treated by a cerium conversion coating

Z. Mahidashti, B. Ramezanzadeh

J. Rare Earths, (36) 2018: 1112-1120



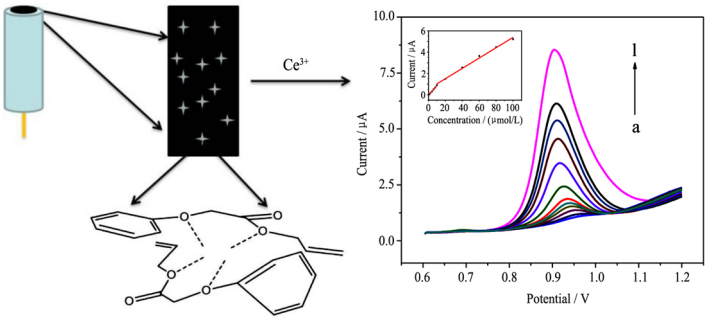
EDS spectrum (a_1), AFM micrograph (a_2) and polarization plots (a_3) of the steel substrate chemically treated by Ce conversion coating

ANALYSIS AND TESTING

1121 Trace detection of Ce^{3+} by adsorption strip voltammetry at a carbon paste electrode modified with ion imprinted polymers

Jin Chen, Huiping Bai, Jieren Xia, Xiaolan Liu, Yanxiong Liu, Qiu'e Cao

J. Rare Earths, (36) 2018: 1121-1126



A new carbon paste electrode modified with Ce-IIPs was fabricated for determination of Ce^{3+}. The IIPs in the paste can improve the selectivity and sensitivity. Ce^{3+} was detected based on its own oxidation peak which is more simple and convenient compare with other undirected method. The novel electrode has been used to detect cerium in catalyst sample solution and get satisfactory results