

ABSTRACT

The invention relates to a nanocage-confined catalyst, a preparation process and use thereof, wherein the catalyst has the formula:
5 NC-m[M(Salen1)X]-n[M'(Salen2)], wherein: NC is a material having a nanocage structure, and M(Salen1)X and M' (Salen2) are active centers, respectively; each occurrence of M is independently selected from the group consisting of Co ion, Fe ion, Ga ion, Al ion, Cr ion, and a mixture thereof; each occurrence of M' is independently selected from Cu ion, Ni
10 ion and a mixture thereof; m is 0 to 100; n is 0 to 100, with the proviso that at least one of m and n is not 0; each occurrence of Salen1 and Salen2 is independently a derivative of Schiff bases; X is an axial anion selected from the group consisting of substituted or unsubstituted acetate, substituted or unsubstituted benzene sulfonate, substituted or unsubstituted benzoate, F⁻,
15 Cl⁻, Br⁻, I⁻, SbF₆⁻, PF₆⁻, BF₄⁻, and a mixture thereof.

Fig. 1