P21: On the temperature programmed reduction characterization of the CoMo/γ-Al_2O_3+(*x*)CuY catalysts: the dynamic interconversion behavior

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Abstract:

Temperature programmed reduction is a powerful tool to study the reduction behavior of supported phases, in the some cases it is also possible from the reduction profiles of supported oxides to obtain useful information about the degree of interaction of the supported phase with the support [1]. It has been widely used to characterize supported metal catalysts and it reveals information about the temperature range where reduction occurs, oxidation state of the metals, the presence of various surface phases, possible interactions between species, interaction with support, and the factors that affect dispersion [2].Particularly, according toChuanzhi Sun and coll [3], the catalysts containing transition metals, especially copper, show a potential application for the abatement of exhaust gas from stationary and mobile emission sources, and completeoxidation of volatile organic compounds. Specialattention has been paid to this system as a substitute for noblemetal containing catalysts. On the one hand, the catalyticproperties of the active copper phase can be greatly influencedby the dispersion behavior. The aim of this study is to check the dynamic interconversion behavior into the copper zeolite during the temperature programmed reduction characterization.

Key words: CuY zeolite, temperature programmed reduction, dynamic interconversion behavior.

References:

[1] T.A.Zepeda, T.Halachev , B.Pawelec, R.Nava, T.Klimova, G.A. Fuentes and J.L.G. Fierro, Hydrodesulfurization of dibenzothiophene over CoMo/HMS and CoMo/Ti-HMS catalysts, Catalysis Communications 7, (2006), 33-41.

[2] Oguz Bayraktar, Edwin L. Kugler, Temperature-programmed reduction of metal-contaminated fluid catalytic cracking (FCC) catalysts, Applied Catalysis A: General 260, (2004), 125–132.

[3] Chuanzhi Sun, Jie Zhu, Yuanyuan Lv, Lei Qi, Bin Liu, Fei Gao, Keqin Sun, Lin Dong, Yi Chen, Dispersion, reduction and catalytic performance of CuO supported onZrO_2-doped TiO_2 for NO removal by CO, Applied Catalysis B: Environmental 103 (2011) 206–220.