

ADDITIONS AND CORRECTIONS

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Daphne E. Keller, Frank M. F. de Groot, Diederik C. Koningsberger, and Bert M. Weckhuysen*: ΛO_4 Upside Down: A New Molecular Structure for Supported VO_4 Catalysts

Reference 15 (Gao, X.; Wachs, I. E. *J. Phys. Chem. B* **2000**, *104*, 1261) was cited incorrectly. The edge energy value should be $\geq \sim 3.5$ eV for a monomeric species. This means that the observed edge energy value of 3.19 eV for the 1 wt % $\text{VO}_x/\text{Al}_2\text{O}_3$ (1V–Al) cannot exclude the presence of polymeric species of vanadium oxide on the catalyst surface.

Besides, dimeric or polymeric species, i.e., species containing a V–O–V bond, are expected to exhibit a V–O–V antisymmetric stretch vibration between ~ 830 cm^{-1} and ~ 630 cm^{-1} in the Raman spectrum. This is illustrated in Figure 1 with the spectra of (a) high-loaded (16 wt % V_2O_5) catalyst on silica, (b) V_2O_5 , and (c) NH_4VO_3 . All three substances show bands in the V–O–V antisymmetric stretch region.

In contrast, the Raman spectrum of the 1V–Al catalyst, discussed in the paper, does not exhibit bands in the V–O–V stretch region, as is shown in Figure 1d. Bands in the V–O–V symmetric stretch or the V–O–V bending vibration region, which are located at lower frequencies, are not observed. The conclusion that monomeric vanadium oxide species are predominantly present holds, despite the relatively low observed UV–vis edge energy for 1V–Al.

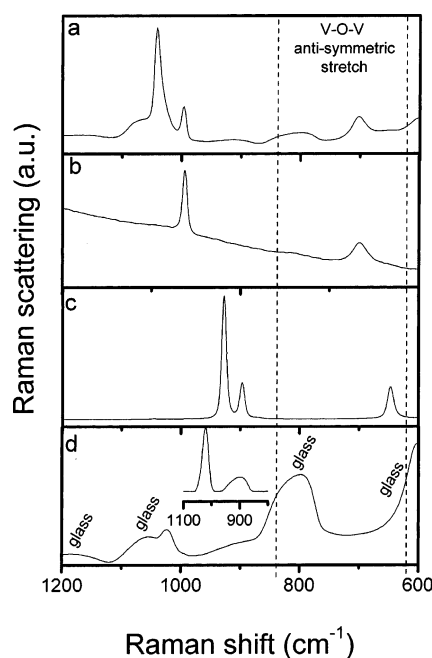


Figure 1. Raman spectra of species containing the V–O–V stretch vibration. (a) 16 wt % VO_x/SiO_2 under dehydrated conditions in glass sample holder. This catalyst contains crystalline V_2O_5 . (b) V_2O_5 . (c) NH_4VO_3 , which contains $(\text{VO}_3)_n^{n-}$ chains. (d) Raman spectrum of 1V–Al (1 wt % $\text{VO}_x/\text{Al}_2\text{O}_3$) after dehydration. In the insert, a background subtraction is performed, and the glass bands have been subtracted. The result is Figure 1a from the original paper.

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