## **Supporting Information**

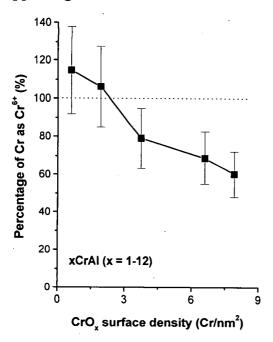


Figure 1S Percentage of Cr as  $Cr^{6+}$  in xCrAl catalysts as calculated from TPR data (dividing real consumed  $H_2$  by theoretical value). It is assumed that all  $Cr^{6+}$  were reduced to  $Cr^{3+}$ .

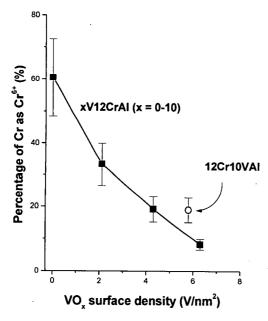


Figure 2S Percentage of Cr as  $Cr^{6+}$  in 12CrAl, xV12CrAl and 12Cr10VAl catalysts as calculated from TPR data (dividing real consumed  $H_2$  by theoretical value). It is assumed that all  $Cr^{6+}$  were reduced to  $Cr^{3+}$ .