

Supporting information:

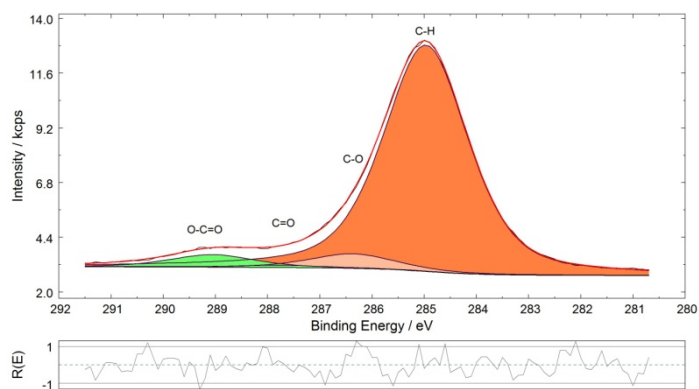


Fig. A: Highly resolved C 1s XP spectrum (non-monochromatized Al Kalpha radiation) of sol-gel prepared FeF_3 .

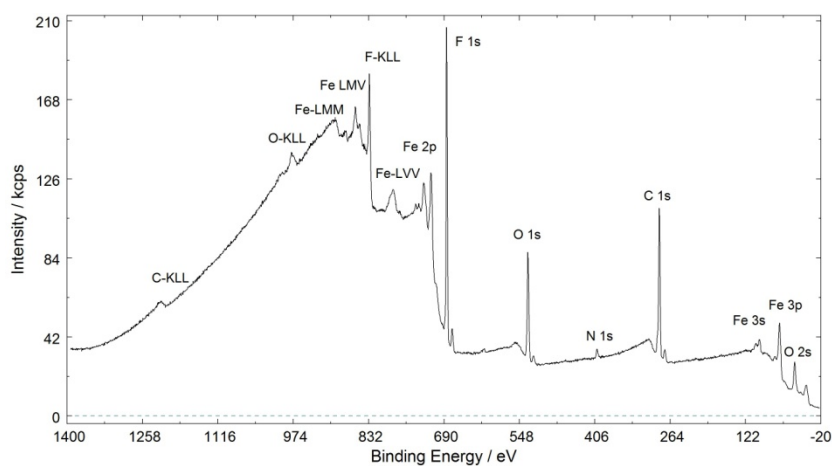


Fig. B: Survey XP spectrum (non-monochromatized Al Kalpha radiation) of sol-gel prepared FeF_3 .

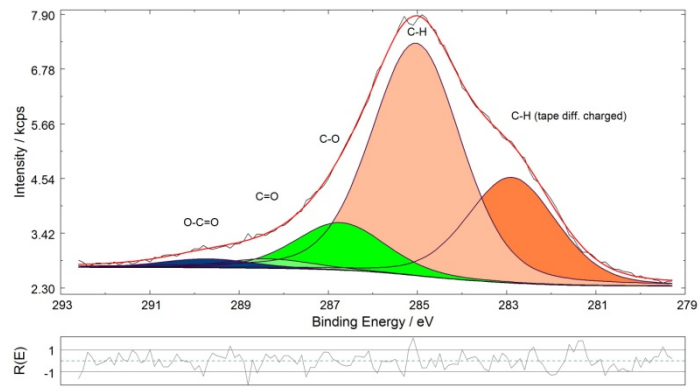


Fig. C: Highly resolved C 1s XP spectrum (non-monochromatized Al Kalpha radiation) of the ternary $\text{FeF}_3\text{-MgF}_2$ catalyst.

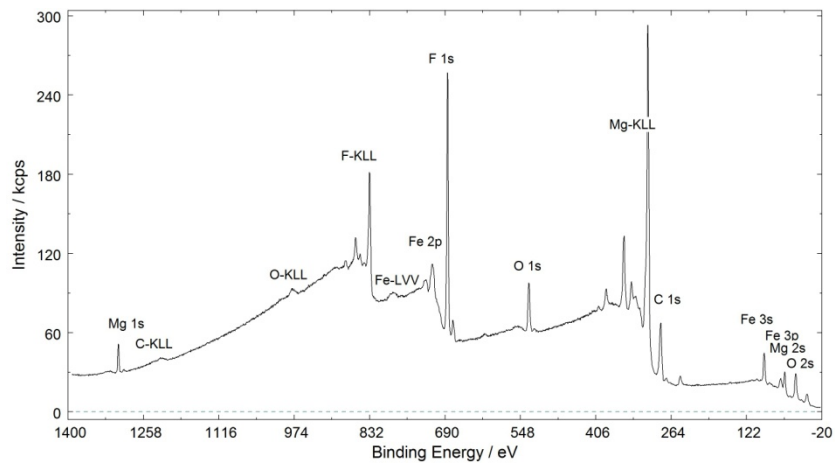


Fig. D: Survey XP spectrum (non-monochromatized Al Kalpha radiation) of the ternary $\text{FeF}_3\text{-MgF}_2$ catalyst.