

Supplementary information

Formation of HCHO, CO and H₂ by methane oxidation with O₂ over Cu catalysts stabilized in silicoaluminophosphates

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Fig. S1. XRD patterns for different metal catalysts supported on SAPO.

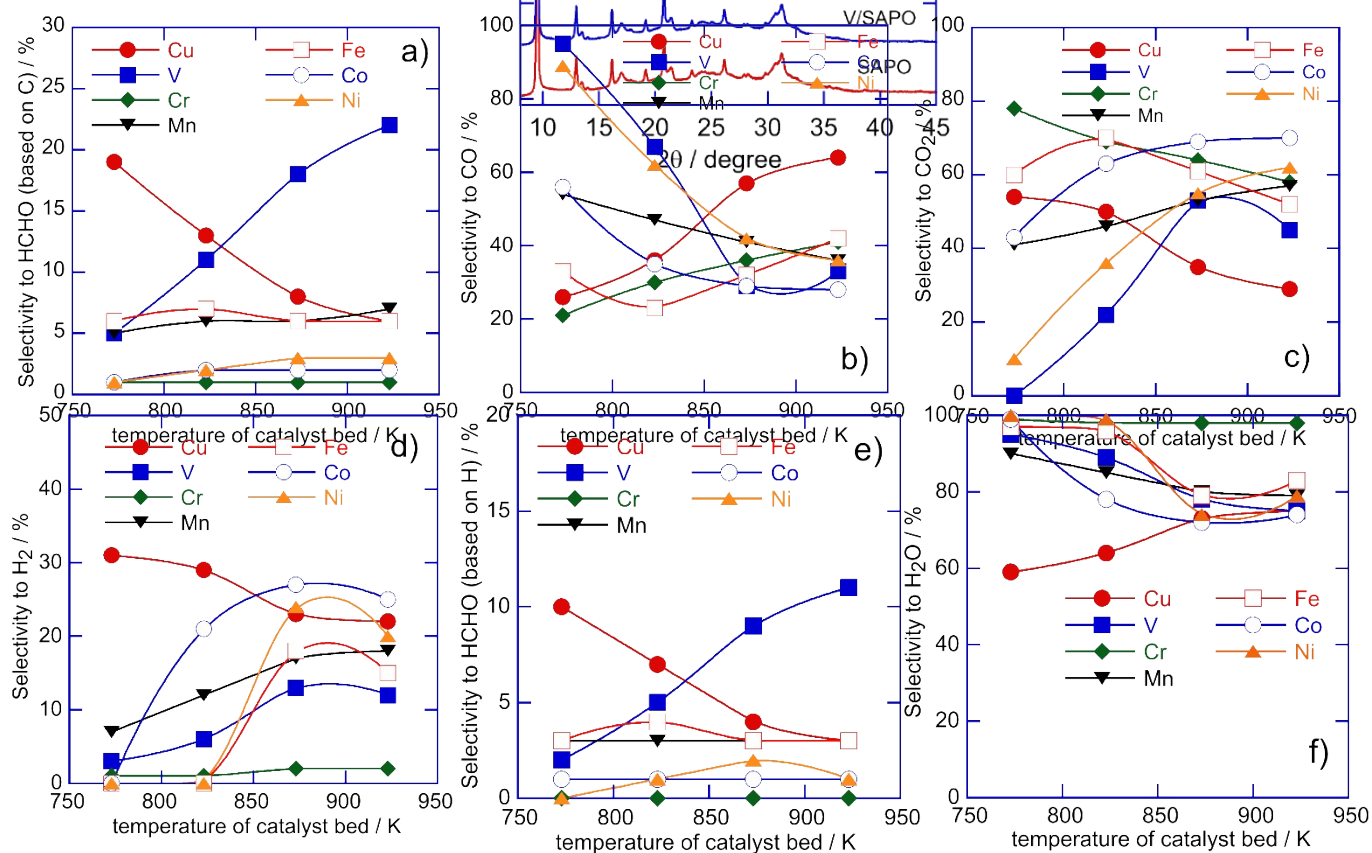
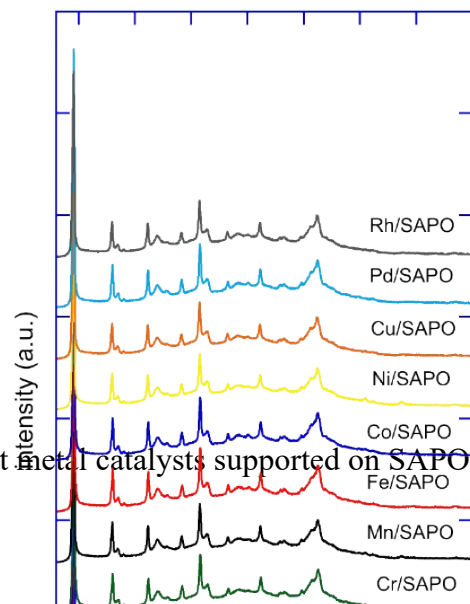


Fig. S2 Selectivity to each product in the methane oxidation with O₂ over different metal catalysts supported on SAPO.

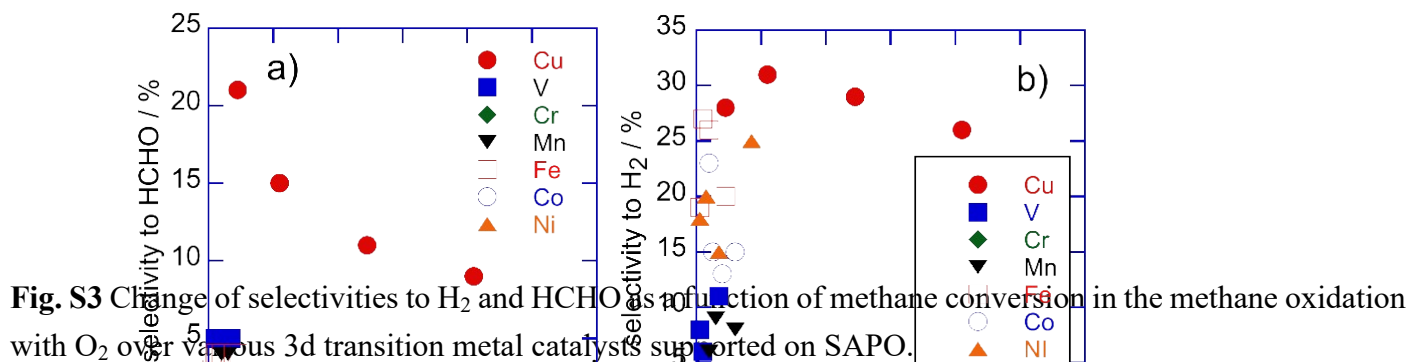


Fig. S3 Change of selectivities to H₂ and HCHO as a function of methane conversion in the methane oxidation with O₂ over various 3d transition metal catalysts supported on SAPO.

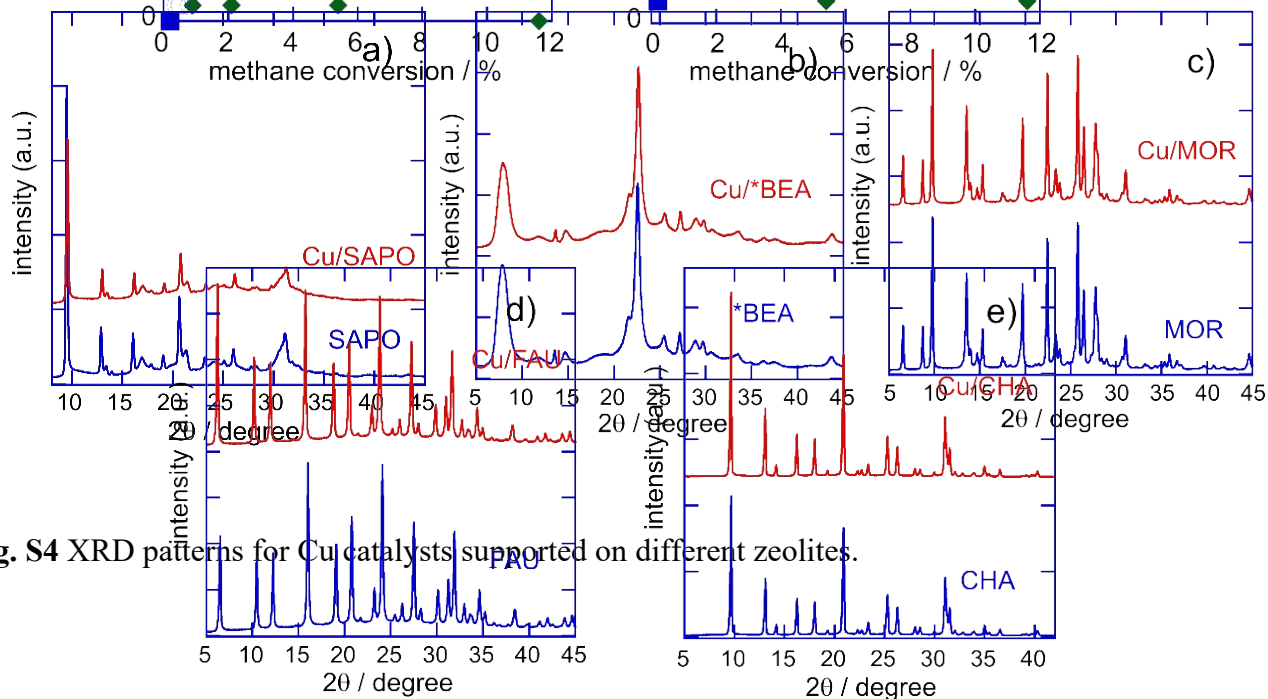


Fig. S4 XRD patterns for Cu catalysts supported on different zeolites.

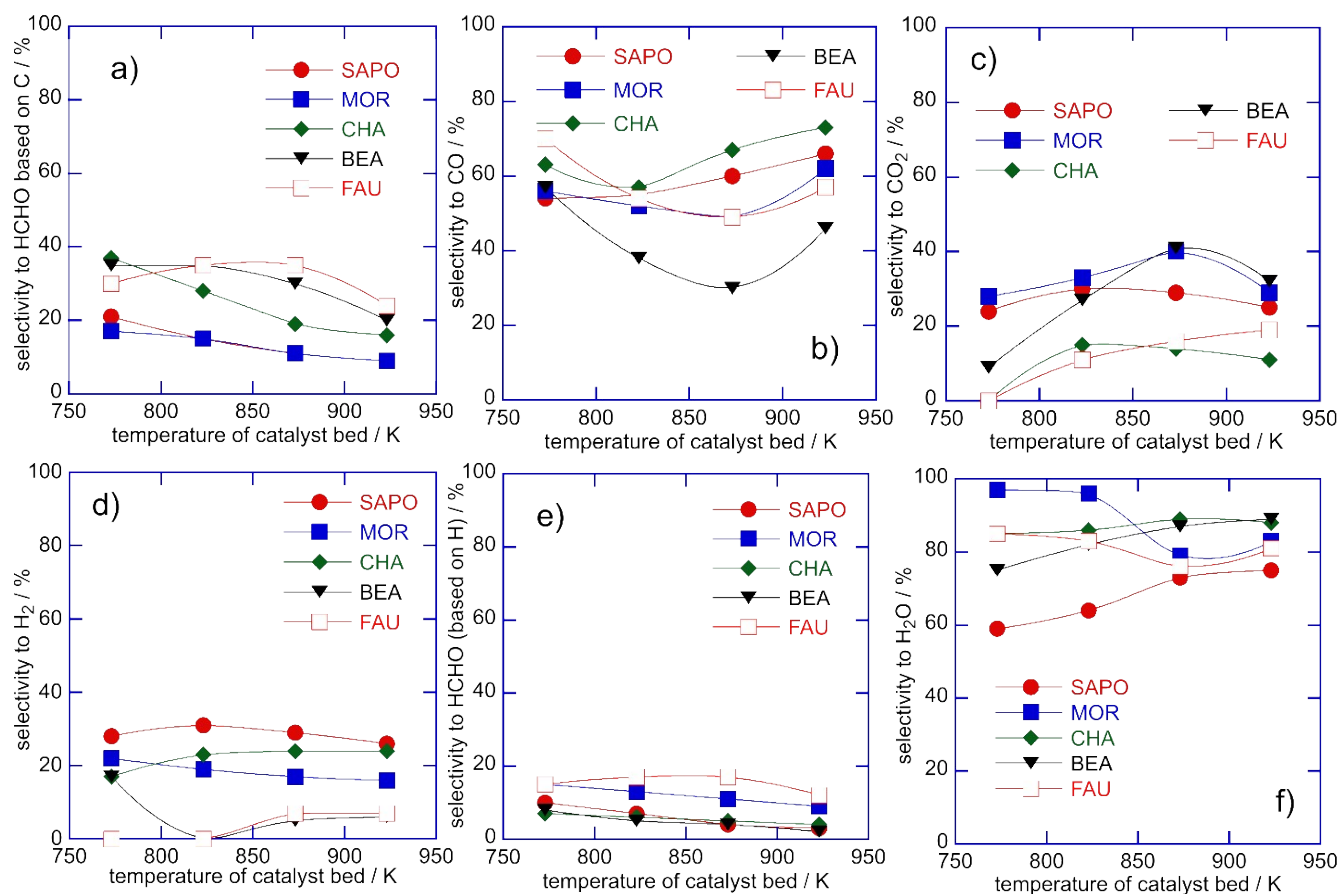


Fig.S5 Methane oxidation with O₂ over Cu (0.5wt%) catalysts supported on different zeolites.

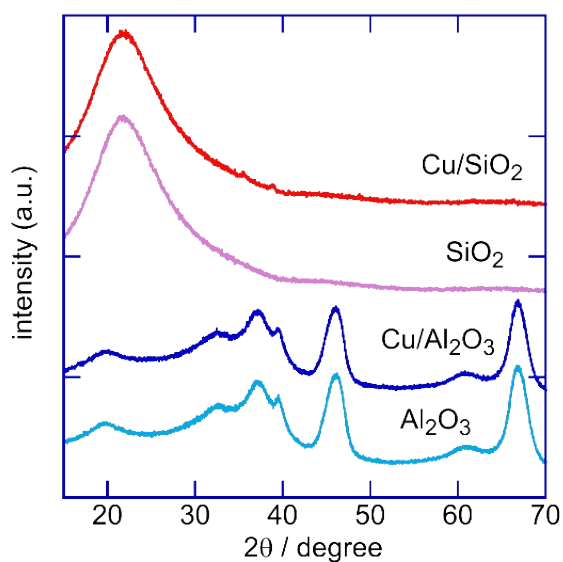


Fig. S6 XRD patterns for Cu(0.5wt%)/Al₂O₃ and Cu(0.5wt%)/SiO₂ catalysts.

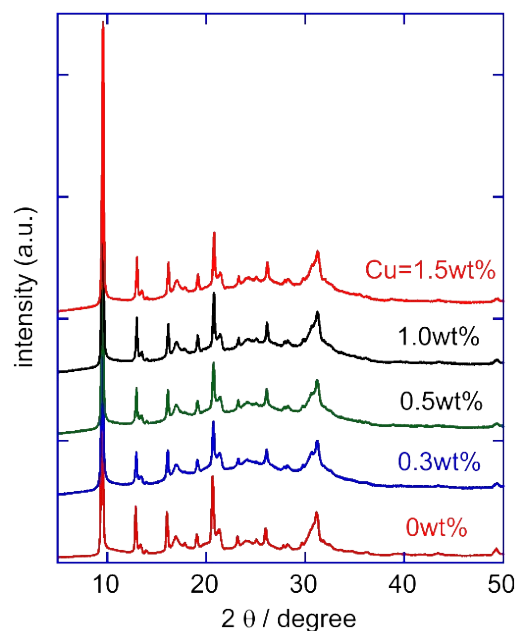


Fig. S7 XRD patterns of Cu/SAPO catalysts with different Cu loadings.

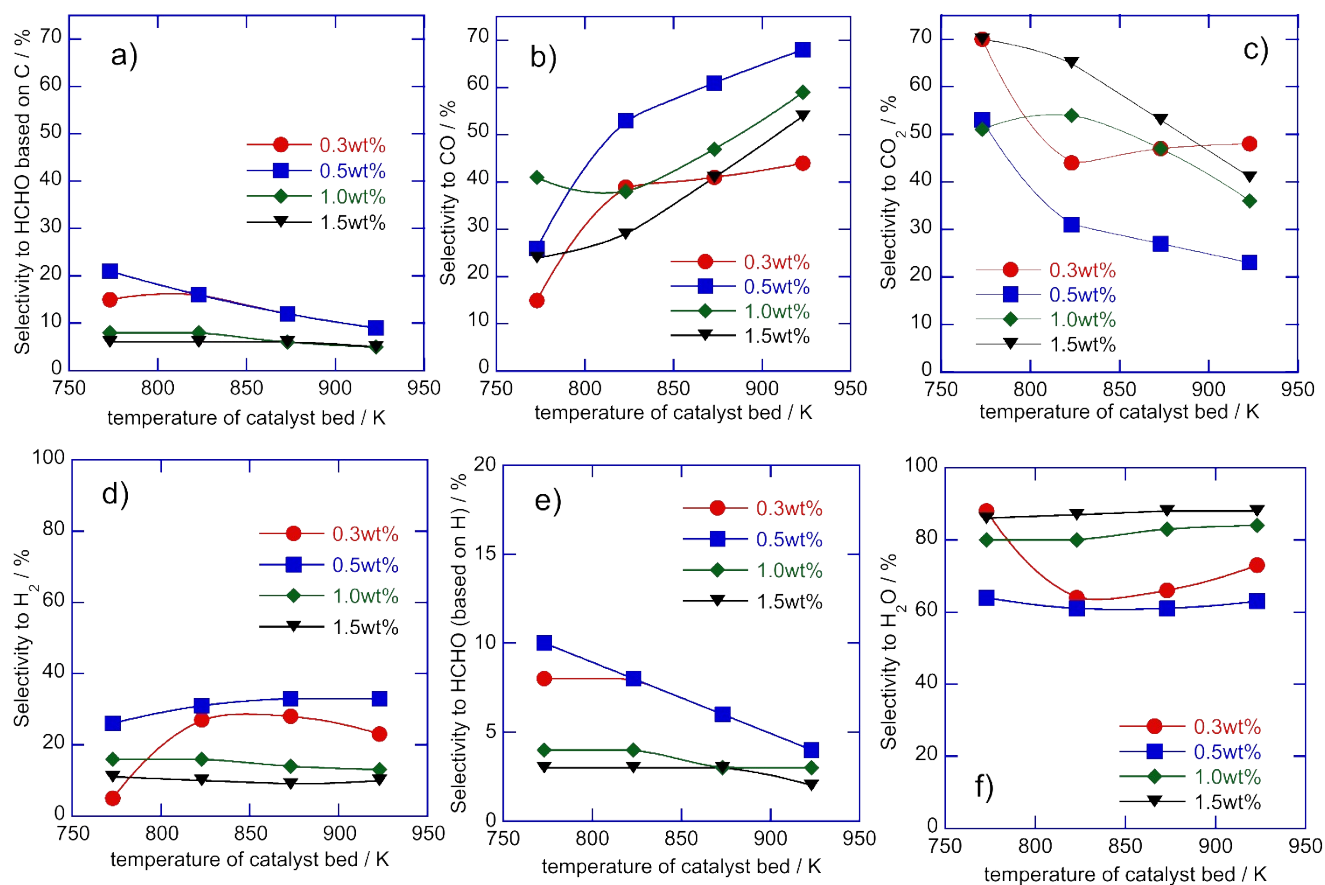


Fig. S8 Methane oxidation with O₂ over Cu/SAPO catalysts with different Cu loadings.

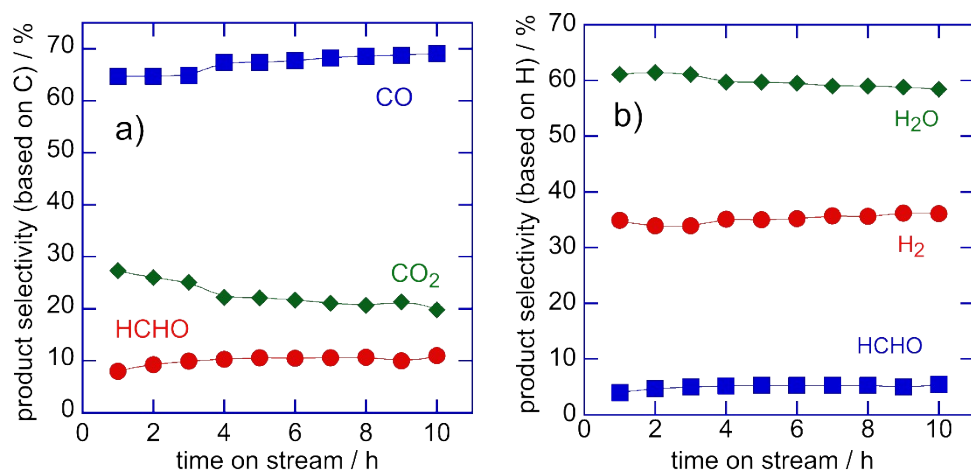


Fig. S9 Change of selectivity to each product as a function of time on stream during the methane oxidation with O₂ over Cu(0.5 wt%)/SAPO catalysts at 923 K.