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Synthesis and Mössbauer spectroscopic investigation of copper-manganese ferrite catalysts for water-gas shift reaction and methanol decomposition

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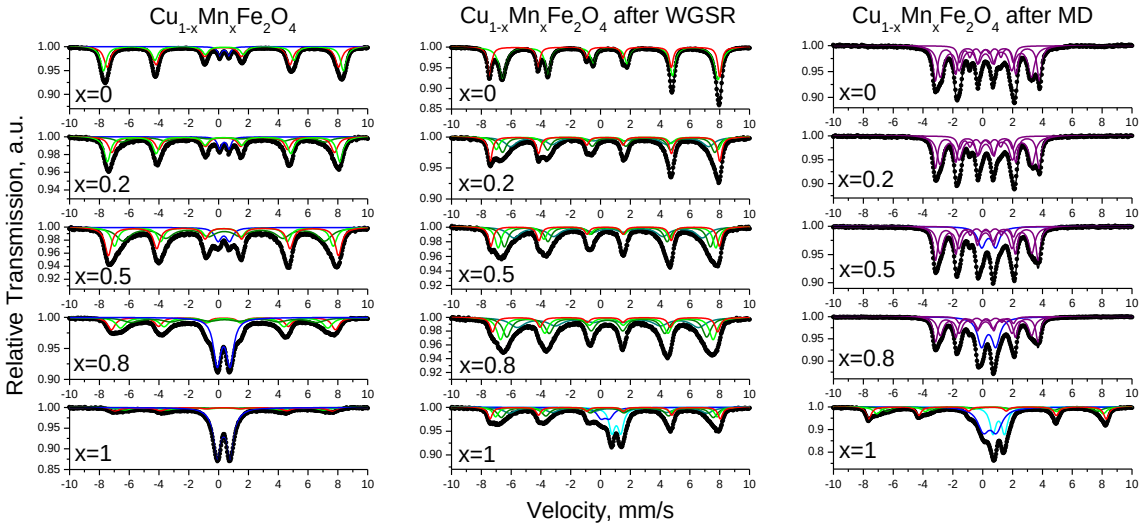
Graphical abstarct



Highlights

- Mössbauer spectroscopy reveals changes in cation distribution with Cu/Mn variation
- partial reduction of Fe^{3+} to Fe^{2+} of the ferrites and formation of magnetite or Mn-substituted magnetite is established after WGSR
- $Cu_{0.8}Mn_{0.2}Fe_2O_4$ exhibits highest activity and stability in WGSR