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Thermal Desorption Study of Benzyl alcohol on clean Si(100)-(2×1)

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The thermal behavior of benzyl alcohol on clean Si(100)-(2×1) surface has been investigated with thermal desorption spectroscopy(TDS) and low energy electron diffraction(LEED). Bitzer et. al. already show that all alcohols chemisorb on Si(100) with the formation of alkoxy and Si-H species.

We observe that the benzyl alkoxy species decomposes about 370K on clean Si(100) surface via hydrogen migration reaction to yield toluene in the gas phase, together with adsorbed hydrogen. Recombinative desorption of H₂ occurs at about 820K. The thermal behavior of other alcohols will be discussed briefly.