

The disproportion reaction of solid silicon monoxide

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This work is a kinetic analysis on the disproportion reaction of solid silicon monoxide : $2\text{SiO} \rightarrow \text{Si} + \text{SiO}_2$. The starting material of SiO grains was pulverized and was pressed in a form of rod before heating. The rod samples were heated under Ar gas flowing and the products were analyzed by XRD and FT-IR. In case of heating at 1100 C, the reaction proceeded very slowly; when the sample was kept for several ten hours at this temperature, the product was not changed. On the other hand, the reaction proceeded rapidly in case of heating at 1400 C, the reaction was completely finished when the sample was held for few hours at this temperature. We are determining the reaction constant as well as the activation energy of the disproportion using a time-resolving high temperature XRD.