
S-S02

Hydrogen Absorption by Si(100): H-Storing Silicon?

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Evidence for ample hydrogen absorption by Si(100) will be presented. The hydrogen absorption is controlled by the atomic-scale surface morphology, which is in turn controlled by the sample temperature and the nature of the surface reactions, etching versus amorphization. TEM, Raman spectroscopy, and thermal desorption mass spectroscopy were employed together with H/D isotope exchange experiments in order to obtain better insights into the hydrogen storage by Si(100). The data will be discussed in light of how and when this unusual phenomenon occurs.