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Atomic structure of Ba layer on Si(001)-(2×1)

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Alkali and alkali-earth metal on Si(001) surface has been investigated widely for both scientific and technological aspects. In particular, the Ba/Si(001) system has been studied by several groups and they reported many phases such as (2×3), (2×4) and c(6×2) by LEED and AES for various temperature and coverages. But there has not been the result of the atomic structure for these phases. Recently some works about the atomic structure of Ba/Si(001) at only room temperature were presented.

In this study, we investigated 3-dimensional atomic structure and growth mode of Ba layer on Si(001) by coaxial impact collision ion scattering spectroscopy (CAICISS) at room temperature and high temperature.