

## Characterization of a-C/B:H thin films for KSTAR boronization

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KSTAR vacuum vessel has been boronized by carborane ( $C_2B_{10}H_{12}$ ) to reduce various kinds of impurities including carbon and oxygen from the wall, since carborane is solid, non-toxic, non-explosive and is easily evaporated, while diborane ( $B_2D_6$ ) is toxic and explosive. To find the best wall condition for the removal of contaminants before application to KSTAR, various amounts (0.3g, 0.5g, 1g) of carborane are tested in a test chamber, where filament discharge was generated in the mixture of helium and carborane with the same KSTAR target pressure ( $\sim 5$  mTorr) from base pressure ( $\sim 10^{-7}$  Torr). Discharge is performed by a pulse sequence mode with 3 second power on and 5 second power off. Deposited films of a-C/B:H are characterized by ellipsometry, AES and XPS, and are compared with those of KSTAR.

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