

Fig. 1 Growth rate of PI on Cu and Si versus deposition temperature.

## a) PI growth on Si at 170°C and 200°C Di growth on Cu at 170°C and 200°C Cu ions catalyze and/or stabilize the inter-chain PI maybe as Cu (I)/Cu (II) complexes 200°C 200°C 170°C 170°C

Fig. 2 Schematic diagram of surface reaction between PMDA and DAH to form a) cyclic PI on Si and b) both cyclic and inter-chain PI on Cu at 170 and 200 °C.