

### Etch Characteristics of Magnetic Tunnel Junction Stacks in a O<sub>2</sub>/Ar Plasma

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The etch characteristics of magnetic tunnel junction (MTJ) stacks patterned with W/TiN hardmask were examined using an inductively coupled plasma reactive ion etching (ICPRIE) in O<sub>2</sub>/Ar plasma. The etch profiles were investigated by varying the O<sub>2</sub> concentration in O<sub>2</sub>/Ar gas mix. Scanning electron microscopy (SEM) was employed to observe the etch profiles of etched MTJ stacks. Transmission electron microscopy (TEM) was also employed for the closer observation of the MTJ stacks and the identification of the redeposited materials on the etched sidewall.