

【T-21】

Characteristic of FM/I/FM magnetic tunnel junctions using the remote RF plasma oxidation method

J.Y.Yang, K.S. Yoon, J.H.Park, W.J.Choi, C.O.Kim, J.P.Hong,
Department of Physics, Hanyang University, Seoul 133-791 Korea

A remote RF plasma oxidation method of an insulating layer has been performed to enhance electrical and structural properties of magnetic tunnel junctions(MTJ) devices. All MTJ were formed using the shadow mask. Basic structure of the MTJ was Si/SiO₂/Bottom /FM/ Al₂O₃/FM/Top with cross stripe line shape. In addition, the magnetoresistance of the each MTJ were measured at room temperature using a conventional probe station. Comparison was made by analyzing properties of the MTJ oxidized by conventional and remote RF plasma oxidation method. Experimentally observed results were improved the surface imaging and the electrical breakdown voltage. The magnetoresistance of the MTJ was increased from 5% to 10%.