

Abstract Submitted
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Giant Spin Hall Effect of the Thick β -W: Temperature Study and Interface Property¹ WENZHE CHEN, GANG XIAO, Brown Univ — The high quality (thick t) β -W/(1)CoFeB/(1.6)MgO/(1)Ta (in nanometer) with the robust perpendicular magnetic anisotropy is obtained using the sputtering system. The XRD pattern and HRTEM has clearly shown the existence of the β -phase. The Electrical and magnetic properties are studied in the temperature range from 10K to 300K. By employing the spin Hall measurement with the aid of ferromagnetic layer, we can calculate the spin Hall angle through the spin transfer torque. We report the largest “internal” spin Hall angle up to 50% in our multilayer sample of 18nm-W, after the correction from the spin transmission probability. Our comprehensive study could promote the future development of the Spintronics device based on the β -W.

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