

Abstract Submitted
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Enhanced Magnetoresistance in Alq3-based spin valve using buffer-layer assisted growth¹ DALI SUN, Oak Ridge National Laboratory / Institute of Physics, Chinese Academy of Sciences, CHENGJUN SUN, LIFENG YIN, HANGWEN GUO, ZHENG GAI, XIAOGUANG ZHANG, Oak Ridge National Laboratory, ZHAO-HUA CHENG, Institute of Physics, Chinese Academy of Sciences, JIAN SHEN, Oak Ridge National Laboratory / The Univ. Tennessee — In the field of organic spintronics, interfacial diffusion between magnetic electrodes and organic spacer layers is a serious problem for both understanding the underlying mechanism and achieving high magnetoresistance. Using buffer layer assist growth, we have successfully fabricated vertical organic spin valves with much sharper interface. Spin valves prepared by this method exhibit considerably larger magnetoresistance. The spacer layer thickness-dependent magnetoresistance suggests that field-dependent interfacial barrier plays the crucial role for the observed magnetoresistance.

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