Abstract Submitted
for the MAR10 Meeting of
The American Physical Society

Giant tunneling magnetoresistance in organic spin valves DALI SUN, LIFENG YIN, CHENGJUN SUN, HANGWEN GUO, ZHENG GAI, X.-G ZHANG, THOMAS WARD, ZHAOHUA CHENG, JIAN SHEN, MATERIALS SCIENCE AND TECHNOLOGY DIVISION, OAK RIDGE NATIONAL LABORATORY, OAK RIDGE TEAM, INSTITUTE OF PHYSICS, CHINESE ACADEMY OF SCIENCES, BEIJING 100190, CHINA COLLABORATION, DEPARTMENT OF PHYSICS AND ASTRONOMY, THE UNIVERSITY OF TENNESSEE, KNOXVILLE, TENNESSEE COLLABORATION, CENTER FOR NANOPHASE MATERIALS SCIENCES, OAK RIDGE NATIONAL LABORATORY, OAK RIDGE COLLABORATION, COMPUTER SCIENCE AND MATHEMATICS DIVISION, OAK RIDGE NATIONAL LABORATORY, OAK RIDGE COLLABORATION — Using buffer layer assist growth, we have successfully fabricated vertical organic spin valves with much sharper interface between top electrode and organic material. Organic spin valves prepared by this method maintain a simple and clean trilayer structure, allowing us to study the mechanism of the MR. Analysis of the current-voltage characteristics at different spacer layer thicknesses indicates that the spin-dependent carrier injection correlates strongly with the observed MR.

Dali Sun

Date submitted: 20 Nov 2009 Electronic form version 1.4