

**INFLUENCE OF SEED-BUFFER LAYERS ON BIAS AND
TEMPERATURE DEPENDENCE OF DYNAMIC
CONDUCTANCE OF IrMn SPIN VALVE MTJ**

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The conductance and I-V characteristics two groups of spin valve magnetic tunnel junctions (SV-MTJs) are measured as a function of temperature and bias voltage. The junctions are characterized by low texture degree of group "a" and high texture degree of group "b". The strongly textured buffer layers grow in a columnar like fashion and induce interfacial roughness. The texture and roughness modified very strongly exchange bias and interlayer coupling effects in the SV-MTJs¹. It has been observed also substantial influence texture and roughness on the resistance area product ($R \times A$) of the junctions. The $R \times A$ of the group "a" junctions is almost two times higher than that of the group "b". While there is no significant difference between TMR at low and room temperature of the two groups. It has been observed, however, slightly decrease of TMR with increasing bias voltage for the "a" group. The thermal smearing of the electron energy distribution (via Fermi distribution function), proposed for the first time in² is used to evaluate zero bias anomaly of the junctions. These results imply that buffer layers composition and their sequence can be use to optimize tunneling properties of MTJs.

¹ T. Stobiecki, J.Kanak, J. Wrona, M. Czapkiewicz, C. G. Kim, C. O. Kim, M. Tsunoda, M. Takahashi, *phys. stat. sol. a* 201 (2004) 1621.

² J. J. Åkerman, I. V. Roshchin, J. M. Slaughter, R. W. Dave I. K. Schuller, *Europhys. Lett.* 63 (2003) 104.

←————— 13.4 cm —————→

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9.7 cm