

**SPIN HAMILTONIAN OF THE TRIANGULAR LAYERED
 α -NaMnO₂ SYSTEM**

**S. El Shawish^a, A. Zorko^a, D. Arčon^a, Z. Jagličič^b, A. Lappas^c, H. van Tol^d,
L. C. Brunel^d**

^aJ. Stefan Institute, 1000 Ljubljana, Slovenia

^bInstitute of Mathematics, Physics and Mechanics, 1000 Ljubljana, Slovenia

^cInstitute of Electronic Structure and Laser, Foundation for Research and
Technology – Hellas, 71110 Heraklion, Greece

^dNational High Magnetic Field Laboratory, Florida State University, Tallahassee,
32310 Florida

9.7 cm

Magnetization and electron spin resonance (ESR) measurements have been performed on α -NaMnO₂ polycrystalline sample, a quantum spin-2 system on a frustrated triangular lattice with spatially anisotropic Heisenberg exchange. From the susceptibility curve, we have determined the antiferromagnetic exchange couplings by employing the finite-temperature Lanczos (FTL) method: in the preferably coupled spin chains, $J_1 = 65$ K, and perpendicular to them, $J_2/J_1 = 0.44$. The FTL calculations on finite $m \times n$ clusters show rapid convergence already for $n = 2$ unit cells in J_2 bond direction, indicating that the behaviour of α -NaMnO₂ system may be described within a quasi-1D model. This is furthermore supported by FTL calculations of 2D static spin correlations at finite temperatures. From the ESR linewidth we also evaluate the dominant magnetic anisotropy term of the single-ion type, $D = -4.1$ K, which establishes an easy-axis direction.

13.4 cm

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Corresponding author :

Samir El Shawish

Address for correspondence :

Jožef Stefan Institute, Jamova cesta 39, 1000 Ljubljana, Slovenia

Email address :

samir.elshawish@ijs.si