

Long Range Ordering of a Linear-Chain Heisenberg Antiferromagnet, TANOL, below 1K(Physics)

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Anomalous Decrease in the Kapitza Resistance between Liquid ^3He and $\text{Cu}(\text{NH}_3)_4\text{SO}_4 \cdot \text{H}_2\text{O}$ at the Magnetic Phase Transition

Shinhachiro SAITO

Phys. Rev. Lett., **39** (1977), 34.

An anomalous steep decrease in the Kapitza resistance between liquid ^3He and a single crystal of $\text{Cu}(\text{NH}_3)_4\text{SO}_4 \cdot \text{H}_2\text{O}$ has been observed for the first time just below its magnetic-phase-transition temperature, $T_N=0.43$ K. The decrease can be enhanced by the application of a magnetic field. These phenomena occur because of the strong coupling between ^3He spins and electron spins of the magnetic salt, as detected in the previous NMR measurement.

Long Range Ordering of a Linear-Chain Heisenberg Antiferromagnet, TANOL, below 1K

Masafumi KUMANO, Yusaku Ikegami, Takashi SATO and Shinhachiro SAITO

Chem. Phys. Lett., **52** (1977), 497.

Magnetization of TANOL (4-hydroxy-2,2,6,6-tetramethylpiperidinoxy) has been measured with the proton NMR method below 1 K. The antiferromagnetic transition temperature T_N is determined to be 0.49 ± 0.01 K under an external magnetic field of 1.6 kOe, which is in good agreement with the value obtained by Boucher et al. from a heat capacity measurement. The reason of the discrepancy between this value and the previously reported one is discussed. The sublattice magnetization as a function of temperature, $M(T)$, is represented by $(1-0.729T^2)$ in the region below 0.35 K. Critical index of the magnetization, β , is estimated to be 0.335 ± 0.02 .

The Crystallization of Vitreous Selenium

Motonobu KAWARADA and Yuichiro NISHINA

Jap. J. Appl. Phys., **16** (1977), 1525.

Crystallization of vitreous selenium has been investigated under an optical microscope with particular attention to the density of the nucleus for crystallization as a function of the quenching temperature. Nucleation of crystallization is found to be heterogeneous on account of the fact that the distribution of crystallization nuclei hardly changes with the heating time at a given temperature above $\sim 60^\circ\text{C}$. The curve of nucleus density vs. quenching temperature shows a minimum near the quenching temperature of 500°C . The activation energy for the crystallization has been found in good agreement with that deduced from differential scanning calorimetry.

The Structure and Crystallization of Amorphous Selenium Film

Motonobu KAWARADA and Yuichiro NISHINA

Jap. J. Appl. Phys., **16** (1977), 1531.

The far-infrared transmission spectrum of vacuum evaporated amorphous film of selenium has been measured with samples made at different deposition rates.