

Abstract Submitted
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Magnetic properties of $FeCl_3$ investigated by ^{57}Fe NMR
BYEONGKI KANG, SOONCHIL LEE, KAIST — $FeCl_3$ crystallizes in a hexagonal layered structure and has a spiral antiferromagnetic phase below $T_N = 8.8K$, where the spins are spirally ordered with $2\pi/15$ period along [140] direction. It is reported that the magnetic phase changes to an order with two sublattices above $1.5T$ and there is a spin- flop transition above $4.0T$. We observed ^{57}Fe ferromagnetic nuclear magnetic resonance(NMR) signal for $FeCl_3$ for the first time at low temperature. The sublattice magnetization $M(T)$ obtained from the temperature dependence of the NMR frequency is well fit by the Bloch's T^2 law for antiferromagnets. The spectral change with external field provided a microscopic evidence for the spin-flop transition. The transition was not abrupt but progressive with increasing field.

Byeongki Kang
KAIST

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