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Determination of Spin Order in Magnetic Organic Semiconductor V[TCNE]∼2 HAILEMARIAM AMBAYE, VALERIA LAUTER, STEPHEN NAGLER, CHRISTINA HOFFMANN, Ornl, HAL LEE, ANDREW PAYZANT, Ornl, ARTHUR EPSTEIN, CHEN CHI-YI, Ohio state university, RICHARD GOYETTE, Ornl — These Organic-based magnets are new area of materials research. The discovery of V[TCNE]∼2 with its high Tc ∼ 400 K and semiconducting behavior similar to silicon, as well as its photonic response unique for magnetic materials, opens up many issues of fundamental physics and chemistry as well as the potential opportunities for use of these and related materials in technologies ranging from spintronics to sensing. To understand the magnetic state and the evolution of the magnetic at and near interfaces with other magnetic and non magnetic materials we have performed a polarized neutron measurement at the SNS magnetism reflectometer instrument. The measurements show the presence of magnetic response at 5K temperature. The room temperature measurements show no magnetic responses. The systems considered are V[TCNE]∼2(1500A) and 6000A on Si substrate. Work supported by DOE.

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