Susceptibility magnetic and high magnetic field ESR measurment of SrCu2(PO4)2

Abstrak

The magnetic susceptibility and high magnetic ESR measurement of SrCu2(PO4)2 has been performed at temperatures
ranging from 4.2 K to 300 K and 4.2 K to 77 K, respectively. The magnetic susceptibility shows a broad maximum
around T = 40 K. The magnetic susceptibility has been interpreted in terms of one-dimensional magnetic systems. The
temperature dependence of the magnetic susceptibility indicated a good agreement with 4-spin alternating configuration
model. In the ESR measurement, clear electron spin resonance (ESR) was observed. The integrated intensity for 120 and
301 GHz has a broad maximum at around 40 K, which is consistent with the susceptibility result. A quantitative
description gives resonance is the first and second triplet excited states of the excitation spectrum of 4-spin alternating
chain configuration. The g1, g2 and g3 values are approximately 2.21 at temperature above 40 K. The g2 dan g3 values
have the dependence of temperature under 40 K.