Abstract Submitted
for the MAR16 Meeting of
The American Physical Society

Characterization of defect structures on triangular antiferromagnet $PdCrO_2$ using scanning tunneling microscopy and spectroscopy JINOH JUNG, KAIST , WON-JUN JANG, IBS CAPP, HYUN WOO CHOI, SEOKHWAN CHOI, KAIST, JONG MOK OK, POSTECH, DONG HYUN SON, KAIST, HWAN SOO SUH, SAIT, JUN SUNG KIM, POSTECH, JHINHWAN LEE, KAIST — Frustrated magnetic systems have received significant attentions due to the possibility as source of ferroelectricity. We studied atomic structures and electronic structures of defects in two dimensional triangular-lattice antiferromagnet $PdCrO_2$ using scanning tunneling microscopy and spectroscopy (STM / STS). In CrO_2 layers and Pd layers, atomic resolution STM images showed distinguishable defects and differential conductance images showed unusual standing wave patterns. We identified the origin of defect structures using STS measurements, atomic ball model analysis and Density Functional Theory (DFT) calculations. Atomic structure analysis of defects gives the opportunity to understand a ground state of frustrated magnetic materials.

Jinoh Jung
KAIST

Date submitted: 06 Nov 2015 Electronic form version 1.4