

Abstract Submitted
for the MAR17 Meeting of
The American Physical Society

Probing helical edge states in InAs/GaSb superlattices by low-temperature scanning tunneling spectroscopy XIAOHU ZHENG, BINGBING TONG, ZHONGDONG HAN, PO ZHANG, XINGJUN WU, XIAOXUE LIU, JIANMIN ZHENG, CHI ZHANG, ICQM Peking Univ, RUI-RUI DU, ICQM Peking Univ and Rice University, ICQM PEKING UNIV TEAM, RICE UNIVERSITY TEAM — We report work in progress for measurements of edge states in an InAs/GaSb superlattice using a low temperature (400 mK) scanning tunneling microscopy/spectroscopy equipped with vector magnets. The superlattices samples are consisting of 60 or 100 units of InAs/GaSb bilayer, with wide or narrow barriers separating the units. The sample surface that is being studied is prepared by UHV in situ cleavage. The atomic images were taken at the cross-section; the local density of states where the helical edge states are proposed to exist are analyzed by recording the differential conductance as a function of sample bias, temperature, and vector magnetic fields. The results should help us to understand the topological edge states in InAs/GaSb quantum wells in a clean environment.

Xiaohu Zheng
ICQM Peking Univ

Date submitted: 08 Nov 2016

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