

Title: Fourier Transform Infrared Spectroscopy Studies (FTIR) and Temperature Programmed Desorption (TPD) of Amorphous Solid Water (ASW)

Type: Student & Faculty

Awardee: Jason Donev & Sam Fain

Mentors: Sam Fain – UW; Bruce Kay – PNNL

Description: Atomic Force Microscopy (AFM) studies of amorphous solid water (ASW) have shown interesting morphological changes during annealing. ASW deposited at 100K on Au makes a flat overlayer that forms 3D clusters upon annealing. The temperature at which the clustering occurs depends strongly on the deposition temperature. Fourier Transform Infrared Spectroscopy Studies (FTIR) and Temperature Programmed Desorption (TPD) measurements are needed to determine the relationship between deposition temperature and formation of clusters. FTIR and TPD can also be used to determine whether or not the clusters formed near 120K are crystalline.