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Directionality of O-Phthaladehyde adsorbed on H-Si(100) Surface Using NEXAFS and HRPES

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The electronic and adsorption structure of O-Phthaladehyde (OPA) on the H-Si(100) surface was investigated by using Near Edge X-ray Fine Structure (NEXAFS) and high resolution photoemission spectroscopy (HRPES). We confirmed that the OPA grown on the H-Si(100) surface showed good dependency with about 60 degree tilting angle using NEXAFS and a single O 1s peak by using HRPES. Hydrogen atom passivated on the Si(100) surface was found to be a seed for making one dimensional organic line that uses a chain reaction as the H-Si(100) surface was compared with the hydrogen free Si(100) surface. Through the spectral analysis, we will demonstrate 1-D directional formation of OPA on H-Si(100) surface using NEXAFS and HRPES.