This thesis is focused on adsorption of phthalocyanines on tin and indium passivated silicon Si(111) surfaces with the $\sqrt{3} \times \sqrt{3}$ reconstruction at room temperature. Scanning tunneling microscopy was used for obtaining atomically resolved surface images. Molecules on these surfaces predominantly adsorb on Si-substitutional defects. Local density of states (LDOS) of strongly adsorbed molecules was obtained by scanning tunneling spectroscopy. The origin of fuzzy imaging of molecules sitting on Si-substitutional double defects was probed. Voltage dependence of mean lifetime of two observed states, between which the "fuzzy" molecule is switching, was measured by analysis of tunneling current fluctuations. We discussed the influence of external parameters on the switching between the two states. We attribute the fuzzy behaviour of the molecule and resulting tunneling current fluctuations to the motion of the molecule in a double-well potential and propose two most likely kinds of the motion which most closely agree with the obtained data.