

Ice Surface Chemistry: Implication for Molecule Formation on Interstellar Dust Particles

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Icy surfaces of interstellar dust particles are considered to play important roles in molecule formation in space. This presentation will describe our recent investigations of chemistry of ice surfaces with the emphases on the mechanistic features of elementary reactions and the implication for molecular evolution on interstellar grains. The types of reactions include the diffusion of molecules, proton transfer through the hydrogen-bonded network of ice, and simple acid-base reactions. Photoreaction of amine and carbon dioxide on ice surfaces leading to the formation of glycine and its isomers as identified by *in situ* mass spectrometric detection is also presented.

References

- [1] H. Kang, 2005, *Acc. Chem. Res.* 38, 893.
- [2] Eui-Seong Moon, Chang-Woo Lee, Joon-Ki Kim, Seong-Chan Park, and H. Kang, 2008, *J. Chem. Phys.*, 128, 191101.