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**A model of self-oscillatory growth of ice crystals in antifreeze glycoprotein solutions** ETSURO YOKOYAMA, Gakushuin University, YOSHINORI FURUKAWA, ILTS, Hokkaido University — We discuss that an oscillatory crystal growth is observed not only in the growth of an ice crystal from AFGP solution but also in the motion of steps on the surface of ice crystals in the presence of AFGP molecules. Our model of the oscillatory growth of crystals accounts for two elementary processes relevant to the growth: 1) an interface kinetic processes for transformation into a crystalline phase at the interface, and 2) a diffusion process for the transport of latent heat liberated at the growing interface. In this talk, we propose the hypothesis of a hysteresis behavior of growth rate to explain the formation of periodic structures of a growing crystal without a change of external conditions. The self-oscillatory growth in the presence of AFGP adsorbed molecules can occur because of the coupling of interface kinetics to the transport of latent heat under constant growth conditions.

Etsuro Yokoyama  
Gakushuin University

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