

Application of Real-Time Fast Dynamic Light Scattering to The Nucleation of Fine particles in Gas Phases

Jun Nozawa[1], Katsuo Tsukamoto[2], Hidekazu Kobatake[3], Ken Nagashima[1]

[1] Geology, Sci., Tohoku Univ, [2] Faculty of Science, Tohoku University, [3] Inst. Min. Pet. Econ. Geol. Tohoku Univ.

Fast dynamic light scattering (DLS) has been applied to the measurement of the size distribution of fine particles near the silicate melt interface. The silicates were heated using PtRh30 heater in the form of a single loop, which directly contacts with the melt. The vapor from the melt was cooled down, as the gas went upward to form fine particles. The size of the particles from the silicate gas was successfully measured by this method, to reveal the particle size was from 43-518(nm). Time resolution of this system allows us to investigate condensation process in the early solar nebula ($1-10^2$ Pa).