

## Experiment of the silicate dust formation through chemically heterogeneous nucleation in vapor phase by using microwave heating

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Recent studies of astronomical observation revealed that the dust particles consist of silicate minerals called "Astronomical silicate". To clarify the heterogeneous nucleation process of the astronomical silicate, we conducted condensation experiment of MgO-SiO<sub>2</sub>-O<sub>2</sub> system by microwave heating, and characterized the condensation product by using SEM, EDX and TEM. The product grain shows spherical shape with the diameter of around 4.6 micron. Moreover, its elemental composition is similar to Enstatite. Compared with the result of condensation experiment of MgO-SiO<sub>2</sub> system (Heike and Hirahara, 1999 Fall Meeting of the Japanese Society for Planetary Sciences), the result of this study indicates that oxygen plays an important role in chemically heterogeneous nucleation process in vapor phase.