Grain formation solved by using new nucleation rate in astorophysical environment.

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We investigated grain formation in astrophysical environment by using new nucleation rate suggested by Dillman and Meier (1991). We compared the numerical results with the previous study which was solved by using classical nucleation rate. The numerical results show that the new nucleation rate is much less than the classical one at the same temperature and pressure. However, the size of the grain which is formed through nucleation process and its growth is not different largely. We also foud that the condensation temperature is less than the previous one. From analytical estimation we found that the sticking probability has a less effect on the size of the grain.