

Question and discussion 9/10/24

What is the effect of doping? *Alexis*

Reduce the grain size *Emilie*

Products segregates at grain boundaries and stop grain growth *Mery*

Why do grain grow? To decrease the surface energy, decrease the surface to volume ratio. *Patrick and Remy*

Why surface has higher energy the bulk? Surface atoms are less bonded therefore not stabilized and have higher energy. *Mery*

Doping changes the surface energy by segregating at the grain boundary for example or by changing the growth's driving forces.

Does the removal of polymer binder by burning them affects the final ceramics? *Mery*

The removal needs to be done very carefully in a way that the burning products such as CO_2 or H_2O can get of the green body. So, the temperature and the heating rate must be controlled, otherwise if the gases cannot escape it can lead to cracks or even the explosion of the ceramics. The appropriate temperature can be determined by weighing the sample while the temperature increases, when the weight start to decrease it means that the polymer is burning.