Laboratory analogy of amorphous enstatite fine grain formation and crystallization

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Amorphous enstatite ($MgSiO_3$) grains were produced by the simultaneous evaporation of Mg and SiO vapor by up and down double heaters method in Ar gas pressure of 10 Torr. Produced particles were mixture of MgO crystallites and amorphous $MgSiO_3$ structure. High resolution electron microscopy showed the crystallites of MgO and $MgSiO_3$ crystallites less than 10 nm. Crystallization of $MgSiO_3$ amorphous structure has been determined by heating in vacuum.