

INSIGHTS INTO REACTIVE FLASH SINTERING OF $\text{MgO-Al}_2\text{O}_3\text{-(8YSZ)}$ BY IN-SITU SYNCHROTRON X-RAY DIFFRACTION

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Recently, flash sintering has been expanded to synthesize complex oxides in a few seconds at low furnace temperatures. It is called 'Reactive Flash Sintering (RFS)'. Here, we study reactive flash sintering of $\text{MgO-Al}_2\text{O}_3$ to MgAl_2O_4 . 8YSZ was added as a flash catalyst, since MgO and Al_2O_3 could not be flashed by itself within our experimental condition. We show that one-step flash experiment produces polycrystals of high density, also the transformation of magnesia and alumina into single-phase spinel.

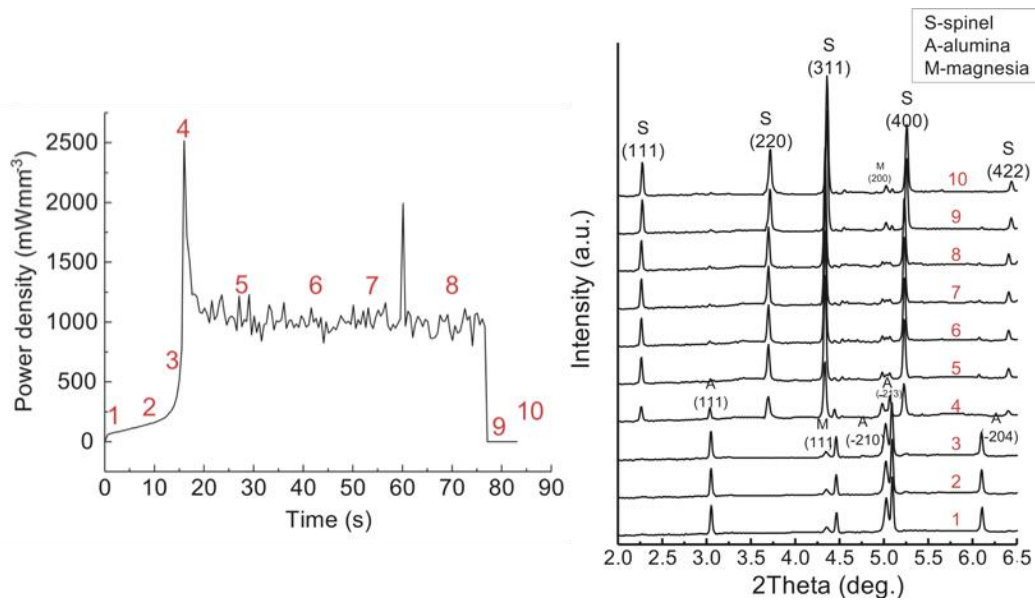


Figure 1. Power density curve for flash sintering and in-situ XRD analysis of the composite.