

## MOCVD of Ferrite Thin Films

Thin films of  $(\text{Ni,Zn})\text{Fe}_2\text{O}_4$  have recently been deposited by liquid injection MOCVD using a combination of the SAFC Hitech precursors  $\text{Ni}(\text{thd})_2$ ,  $\text{Zn}(\text{thd})_2$  and  $\text{Fe}(\text{thd})_3$ . The films were grown at a substrate temperature of  $500^\circ\text{C}$  and were polycrystalline demonstrating a well defined spinel structure.

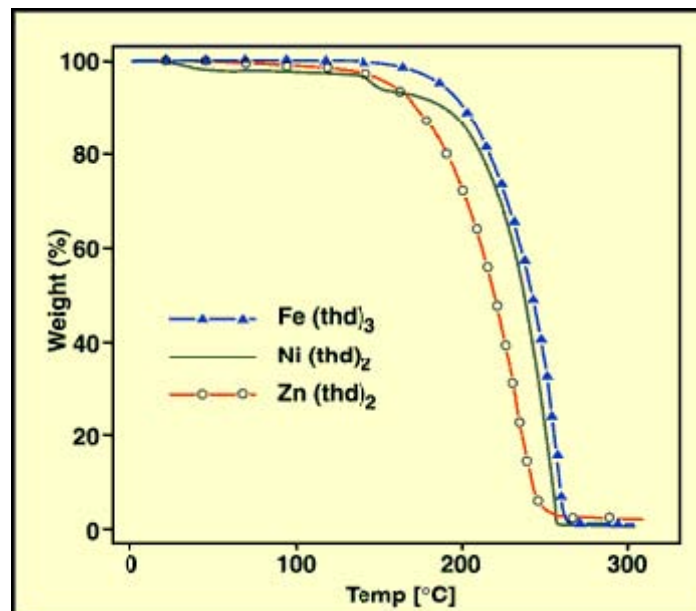


Figure 1: TGA data of thin film ferrite precursors

There have been very few reports on the MOCVD of thin film ferrites, and there has undoubtedly been a problem in identifying suitable precursors. TGA studies at SAFC Hitech (see figure 1) have shown that  $\text{Ni}(\text{thd})_2$ ,  $\text{Zn}(\text{thd})_2$  and  $\text{Fe}(\text{thd})_3$  evaporate at similar temperatures, whilst studies into the MOCVD of the single oxides at the Defence Research Agency have shown  $500^\circ\text{C}$  to be the optimum deposition temperature for the ternary oxide.