Research Interests
1. Process development for synthesis of high thermal conductivity $\text{Si}_3\text{N}_4$, AlN and BN powders.
2. Process development for high thermal conductivity AlN or BN/polymer composites, grease, adhesives and pastes.

Representative Publications

Patents Granted
A. Synthesis of aluminum nitride (AlN) and boron nitride (BN) and their applications

Raw Materials
Al or B\textsubscript{2}O\textsubscript{3}+N\textsubscript{2}  

synthesis reaction (developed by LAMSA,NCKU)

AlN or BN powders

sintering, surface treatment, compounding (developed by LAMSA,NCKU)

Electronic substrates, LED chip carriers and housing, crystal grow crucibles, and heat dissipation devices

high thermal conductivity grease, paste, pads and tapes, LED housing and other high thermal conductivity composite materials

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Figure 8. Effect of the reheating time on the thermal conductivity of the sintered AlN specimen reheated at 1800 °C with a carbon addition of 0.5 wt%.

Figure 10. The emission ((a); (b); (c); (d); (e); and (f), excited by $\lambda = 460$ nm) and excitation ((g); (h); (i); (j); (k); and (l)) spectra of the phosphors synthesized with various Ca contents.

B. Synthesis of high-performance phosphor materials for LED solid state lighting

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Figure 8. Effect of filler content on thermal conductivity of the EMC specimens filled with either powder C or H of the AlN.