

Development of Novel Polyimide-Ceramic Nanocomposite Dielectric Films

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Technology Summary

Polymer nanocomposite materials are a growing interest due to their enhanced properties over base polymers. By incorporating certain filler materials into a polymer matrix, the resulting material benefits from the polymer characteristics (flexibility, processability) as well as the characteristics of the filler material (thermal and mechanical stability, dielectric properties, radiation resistance). Of a variety of polymer systems, polyimide presents a particularly interesting system for its renowned mechanical and thermal properties. Using polyimide, filler materials were incorporated into the polyimide matrix to produce polymer-nanocomposite films.

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