



## Advances in Organic, Inorganic, and Organic/Inorganic Hybrid Composite Functional Materials Which Are High-Frequency and Low-Dielectric

Guest Editor:

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### Message from the Guest Editor

Dear Colleagues,

With the rapid development of electronic information technologies, such as high-frequency communication, artificial intelligence, and cloud computing, various types of low-*k* materials have been adopted to avoid the signal capacitance delay, crosstalk, and increased power consumption caused by metal resistance and parasitic capacitance between lines and layers. For example, organosilicates (fluorinated silicon glass (FSG or SiOF) and organosilicate glass (SiCOH), etc.) have been widely used for low-*k* interlayer dielectrics in integrated circuits (IC) packaging. Additionally, certain kinds of polymers (such as poly(arylene ether), polyimide, parylene-N/F, polytetrafluoroethylene, benzocyclobutene-based polymer, etc.) are commercially available for spin-on dielectric applications.

Aside from material innovations, advanced chemical and physical structures of organic, inorganic, and hybrid low-*k* materials should be proposed to meet operation requirements, including outstanding mechanical property, good thermal stability, low shrinkage rate, low expansion coefficient, low water absorption, and good processability and surface smoothness.





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## Message from the Editor-in-Chief

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