

The current status of mica application in energy storage

Are mica films magnetron sputtered by different insulating layers good for energy storage?

However, conduction losses rise sharply at elevated temperature, limiting the application of energy storage capacitors. Here, the mica films magnetron sputtered by different insulating layers are specifically investigated, which exhibit the excellent high-temperature energy storage performance.

Can mica be used as energy storage dielectrics?

In recent years, mica has a tendency to be used as energy storage dielectrics. As shown in Figure S1, compared with other thicknesses, mica with a thickness of 10 μm has the most excellent energy storage performance at high temperature.

How is mica used in a composite PCM?

Mica was used as support to prepare form-stable phase change materials. KH-550 was used to modify the surface of mica and EG was added to further improve the thermal performance of the composite PCMs. The composite has remarkable latent heat and thermal conductivity for thermal energy storage.

Are Mica-based composite PCMs suitable for thermal storage materials?

The prepared mica-based composite PCMs have good thermal stability and thermal performance, and give full play to the application potential of mica in the use of thermal storage materials, showing a new direction for mica-based functional materials.

Is mica a flexible substrate?

Mica is a silicate mineral with a layered structure that offers several advantages as a flexible substrate. Mica has a high melting point (approximately 1200-1300 $^{\circ}\text{C}$), good stability and mechanical strength at high temperatures, and excellent insulating properties [19].

What are the characteristics of mica films?

The mica, PMP, PAMAP, and PAPMPAP films exhibit excellent frequency (10⁰ - 10⁷ Hz) and temperature (25 $^{\circ}\text{C}$ - 150 $^{\circ}\text{C}$) stability. The mica films exhibit the ultrahigh $\tan \delta$ (8-9), which is two to three times than common high-temperature energy storage polymer, such as PEI, PI, Polyethylene terephthalate (PET), Polyetheretherketone (PEEK), PC, etc.



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