

Phase Formation, Activation Energy and Superconductivity of MgO Nanoparticles Added $(\text{Cu}_{0.5}\text{Ti}_{0.5})\text{Ba}_2\text{Ca}_2\text{Cu}_3\text{O}_{10-\delta}$ Phase

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Highlights

- $(\text{MgO})_x/\text{CuTl-1223}$ nanoparticles-superconductor composites were synthesized and characterized.
- Crystal structure of host CuTl-1223 phase was not changed with the addition of MgO nanoparticles.
- Superconductivity was suppressed with addition of MgO nanoparticles.
- Lower value of U (eV) predicted the weak flux pinning promoted by addition of MgO nanoparticles.

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