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Evaluation of the thermal conductivity of polymethacrylic with additives of various metals

Abstract:

The effect of additives of gold, silver, aluminum and copper nanoparticles on the thermal conductivity of polymethacrylic (base) was studied. The concentration of added nanoparticles was 0.25% weight. The addition of silver significantly increased thermal conductivity, followed by copper, gold and finally aluminum. The thermal conductivity values of polymethacrylic are 0.28 W/μ. and 0.25 W/μ when adding gold and aluminum, respectively. The properties of polymethacrylic did not change significantly when adding the same amount of silver.