

**THE EFFECTS OF SILVER OXIDE ADDITIONS ON THE ELECTRICAL
PROPERTIES AND MICROSTRUCTURE OF LOW-CURING-TEMPERATURE
SILVER PASTE WITH MOD ADDED**

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Abstract

In this paper, the effects of the silver(I) oxide (Ag₂O) and silver(II) oxide (AgO) additions on the thermal decomposition behaviors of the MOD silver 2-ethylhexanoate addition silver paste were investigated. In this study, low-curing-temperature silver pastes from Ag flake, α -terpineol, silver 2-ethylhexanoate and various amounts of silver(I) oxide and silver(II) oxide were prepared and characterized. The silver oxides usually are applied in optical and magneto-optical data storage. And for high rate battery applications, the silver oxides catalysts are used in cathodes application. Furthermore, the silver oxides have specially heat reduction property[1] at 150 .

Thermal decomposition effects of silver 2-ethylhexanoate for silver oxide catalytic reaction are evidenced by TGA and the decomposition activation energy E_a calculated analysis. The microstructures and resistivities of screen-printed films on alumina substrate after thermally treated were characterized and discussed. The electrical properties of the films were measured using four-point probe method at the curing temperature of 200°C. The results indicate that electrical resistivities of $< 20\Omega \cdot \text{cm}$ were obtained.

References:

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Figure:

- [1] Derivative thermogravimetric analysis of silver 2-ethylhexanoate mixing with (a)no addition, (b)10wt% Ag_2O , (c)10wt% AgO , (d)20wt% Ag_2O , and (e)20wt% AgO .
- [2] Resistivities of silver films with additions of no addition, 10wt% Ag_2O , 10wt% AgO , 20wt% Ag_2O , and 20wt% AgO and cured at 200 °C with different dwell time.

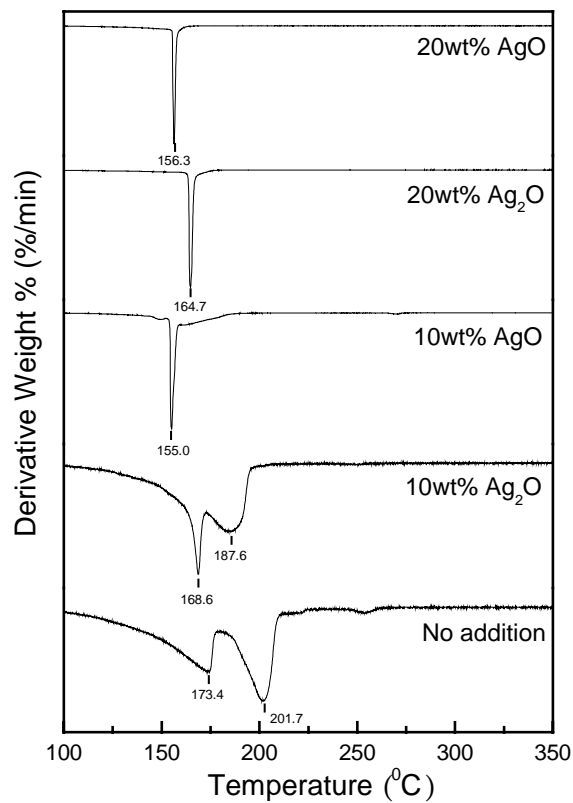


Figure 1

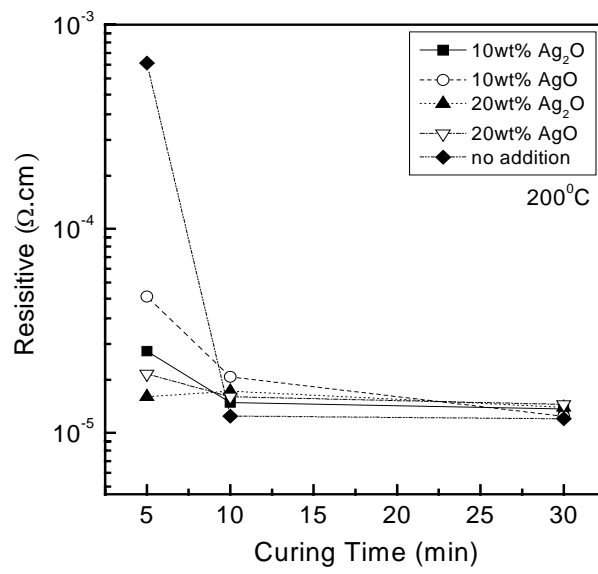


Figure 2