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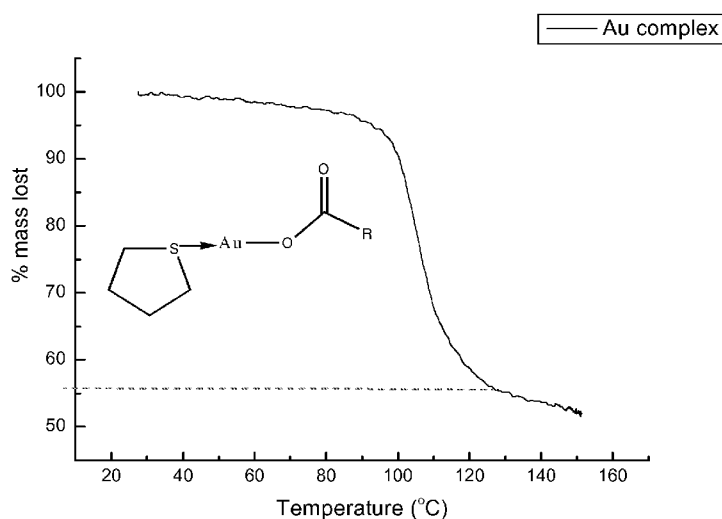
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[Continued on next page]

(54) Title: METAL INK COMPOSITIONS, CONDUCTIVE PATTERNS, METHODS, AND DEVICES

FIGURE 3



(57) Abstract: Metal complexes adapted to form conductive metal films and lines upon deposition and treatment. The metal complex can be a covalent complex and can comprise a first and second ligand. Low temperature treatment can be used to convert the complex to a metal. The metal films and lines can have low resistivity and work function similar to pure metal. Coinage metals can be used (e.g., Ag, Au, Cu). The ligands can be dative bonding ligands including amines, unsymmetrical amines, and carboxylate ligands. Sulfur complexes can be used. Carboxylate ligands can be used. The complexes can have a high concentration of metal and can be soluble in aromatic hydrocarbon solvent. The ligands can be adapted to volatilize well. Inkjet printing can be carried out. High yields of metal can be achieved with high conductivity.

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