

Naive synthesis of nether temperature sintering silver organic precursor ink for the fabrication of highly conductive flexible electronics by spin coating and nozzlejet technique

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In this report, we have designed a naive synthesis procedure to develop a stable and low temperature sintering silver organic precursor (SOP) ink using low boiling point mild organic complexing agents. Also, we used a polymeric stabilizing agent to maintain viscosity and surface tension for proper ink wettability, spreading and to prevent coffee ring effects, which are otherwise difficult to control in the absence of a stabilizer. The synthesized ink was spin coated on glass and flexible (PET and PI) substrates and also nozzle jet printed on PET. After printing process, the deposited films were sintered at room conditions and at low temperatures consequently, yielded smooth films of silver ink with marvelous adhesion and superb conductivity (~ 106 S/m). Furthermore, four point probe technique was employed to measure the sheet resistance for all conductivity measurements.