## Synthesis of stable Cu<sub>core</sub>Ag<sub>shell</sub>&Ag particles for direct

## writing flexible paper-based electronics

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Figure S1 TEM micrographs of Cu<sub>core</sub>Ag<sub>shell</sub>&Ag, which shows the thicknees of silver shell about 0.1-0.15  $\mu$ m.



Figure S2 (a) and (b) the resistance of the single Ag and Cu patterns was 114  $\Omega$  and 292  $\Omega$ , respectively, 64 and 162 times higher than the Cu<sub>core</sub>Ag<sub>shell</sub>&Ag pattern, (c) and (d) When the pattern with a bending angle kept at 330° connected to a closed electric circuit, the resistance of the single Ag and Cu patterns was greatly increased to 336  $\Omega$  and 686  $\Omega$ , respectively, 50 and 104 times higher than the Cu<sub>core</sub>Ag<sub>shell</sub>&Ag patterns, (e) and (f) their correspording ordinary small bulbs were not turned on  $\circ$ 



Figure S3 After sintering at 250 °C for 2 h, the pattern with the Kapton substrate possessed (a) good flexibility and (b) high conductivity, which can be used as microelectrode in many fileds, such as triboelectronic nanogenerator and the solar cell, etc.