

## Supporting Information

### Fast near infrared sintering of silver nanoparticles ink and application for flexible hybrid circuit

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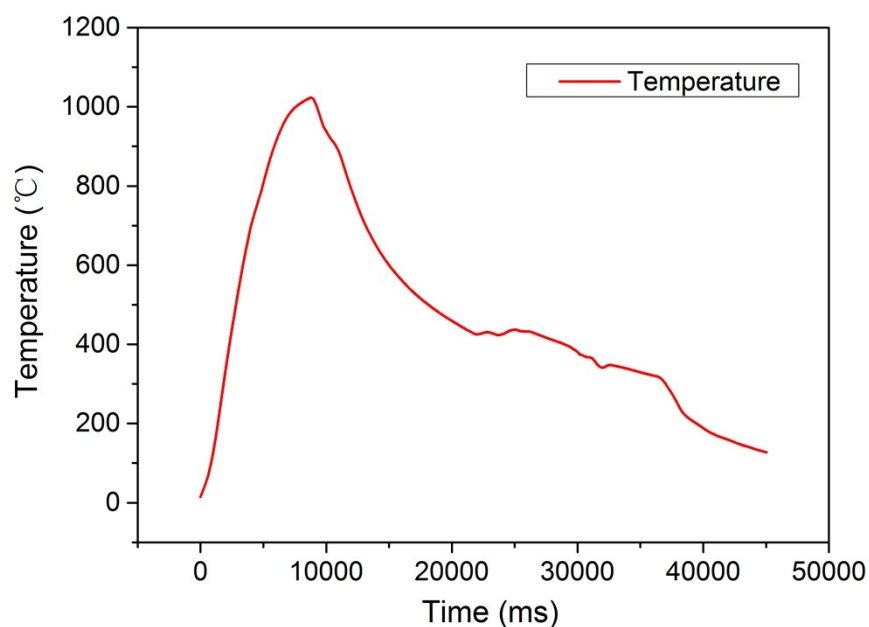


Figure. S1 The temperature profile of AgNP film sintered by NIR with power of 360KW/m<sup>2</sup> in 10 seconds

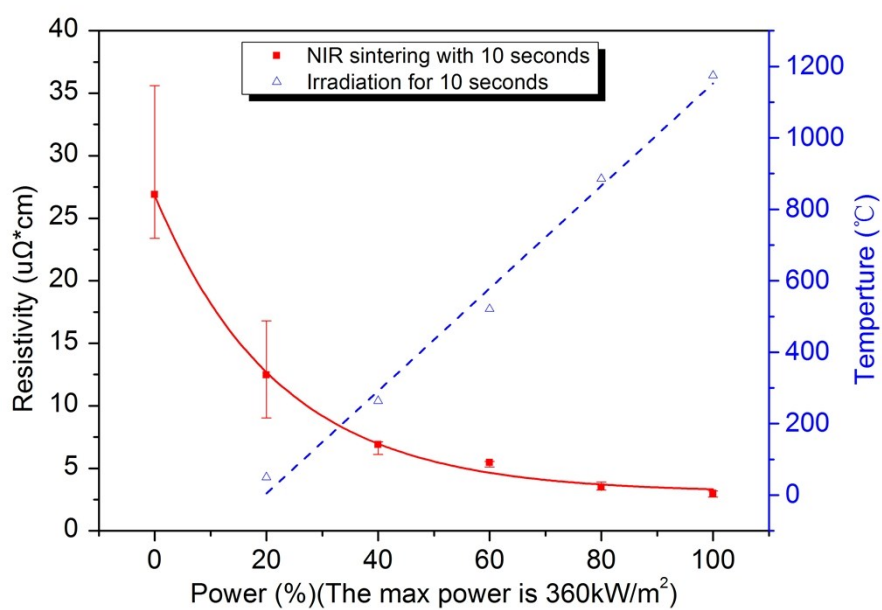


Fig. S2 The resistivity of NIR sintered AgNP film for 10 seconds with changing sintering power and the temperature caused by the corresponding power, the temperature is linear with the NIR output power.

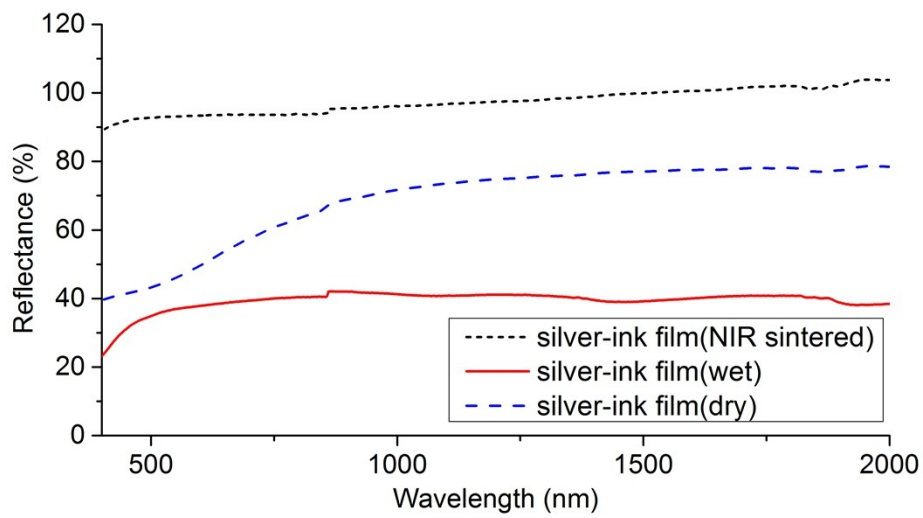


Fig. S3 The reflectance of AgNP film in wet state (red), dry state (blue) and sintered state (black).

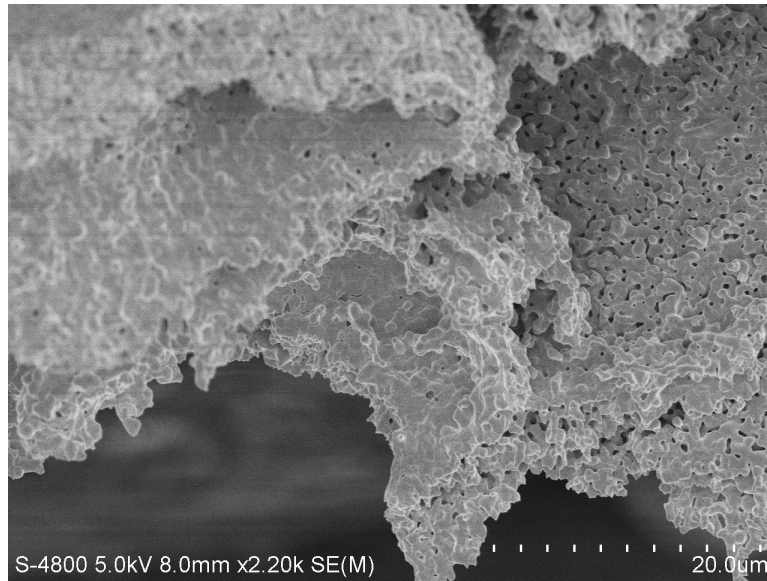


Fig. S4 SEM image of AgNP film sintered by NIR directly without drying processing, peeling appears due to much gas eliminated from the film which caused by solvent and polymer evaporation and decomposition.

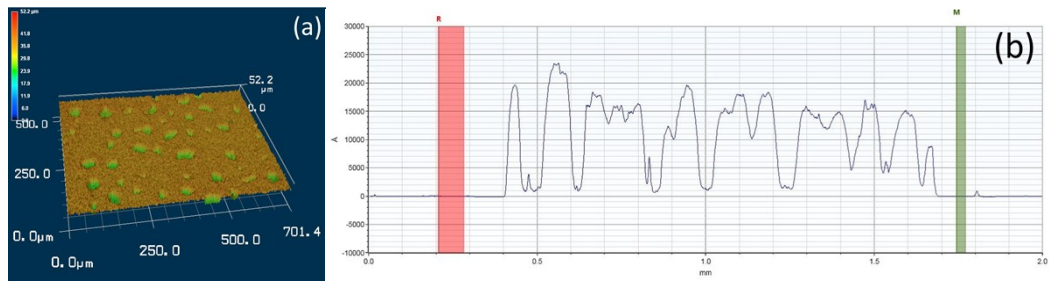


Fig. S5 Height profile of the AgNP film sintered by NIR directly, which measured by (a) optical profilometer and (b) mechanical profilometer.

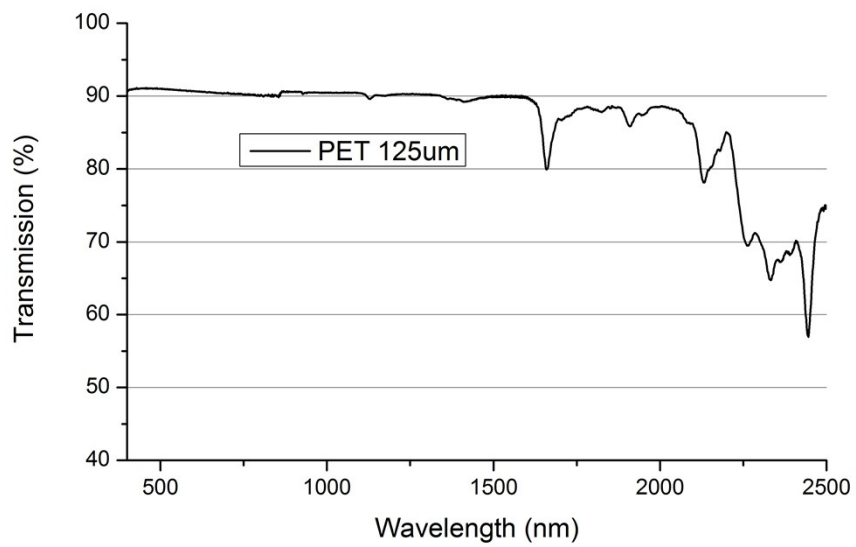


Fig. S6 Transmission spectra of PET polymer substrate

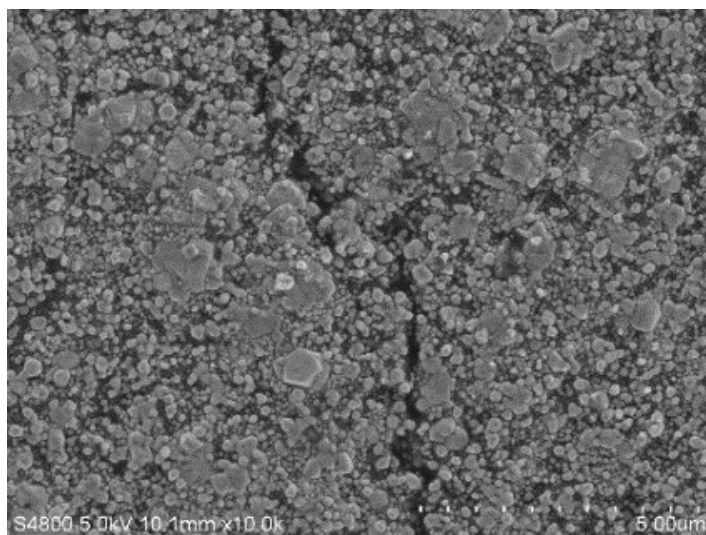


Fig. S7 The SEM image of AgNP pattern sintered by hotplate after rolling test, and some micro cracks appeared in the film which lead to resistance increase.