Supporting Information

## Improved lateral heat spreading performance for polyvinylidene fluoride composite film comprising silver nanowire in light-emitting Diode

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## 1. Materials

Polyvinylidene fluoride particles (Mn= $3.0 \times 10^4$ , Mw/Mn=2.4) were purchased from Shanghai Shi Quan industrial Co., Ltd. Nano silica was supplied by Beijing Dk Nano technology Co., LTD. N,N-Dimethylformamide (DMF), polyvinyl pyrrolidone (PVP, Mw= $1.3 \times 106$ ), Sodium chloride and glycerol were purchased from Shanghai Aladdin biological technology co., LTD.

2. Fabrication of AgNW





Sliver Nanowires

Fig. S1. Schematic illustration of the fabrication procedure of the AgNW.

## 3. Fabrication of hybrid precursor solution

The PVDF particles were dissolved absolutely in the DMF at 70°C and formed the PVDF/DMF mixed solution. The AgNW and silica nanoparticles were subsequently added into hybrid solution and dispersed via ultrasonic treatment method and formed AgNW-PVDF/DMF precursor solution.

PVDF Particles



Fig. S2. Schematic illustration of the fabrication of AgNW-PVDF/DMF precursor

solution.



Fig. S3. Transient simulation contours in 60 seconds.