

Supplementary Materials: Investigation of Silver Nanowire Transparent Heated Films Possessing the Application Scenarios for Electrothermal Ceramics

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Table S1. Substrates specification.

Substrate Name	Area	Specification
Ceramic	2.5 cm × 2.5 cm	<p>The ceramic substrate is lab-made, and the process is as follows: The main component of the body: Al₂O₃ about 20%, SiO₂ about 65%, K₂O + Na₂O about 5%. The main component of the glaze material: Al₂O₃ about 14%, SiO₂ about 70%, CaO+MgO about 5%, K₂O+Na₂O about 6%; Co₂O₃ of 1–2%. Sinter: The body is placed in a dryer and dried for 2 h at 100 °C; then glazing was performed on the surface of the dried body with thickness of glaze layer of 0.8 mm; then the body is placed in the dryer to dry for 1.5 h at a temperature of 100 °C. After drying, body was calcined for 3 hours in a sintering furnace at 1200 °C and allowed to stand for 0.5 h.</p>
Glass	2.5 cm × 2.5 cm	Silica-boron glass.
Ceramic-SiO ₂	2.5 cm × 2.5 cm	<p>The ceramic-SiO₂ substrate is lab-made, and the process is as follows: A layer of SiO₂ with a thickness about 680 nm was prepared on the glaze of ceramic substrate by magnetron sputtering with SiO₂ target (purity of 99.99%). The magnetron sputtering process was set as follows: working pressure of 1.2 Pa, power of 120 W, argon flow of 40 sccm, sputtering time of 90 min.</p>

Table S2. Surface roughness Ra of transparent heating film and substrates.

Samples	Ceramic/AgNW-TCF		Ceramic/AgNW@AZO-TCF			Ceramic Substrate	Ceramic-SiO ₂ Substrate	Glass Substrate
	1#	2#	3#	4#	5#			
surface roughness <i>Ra</i> (nm)	22.2	20.5	18.7	21.4	29.9	8.29	4.20	1.65