

Market Opportunities for Metal Meshes as Transparent Conductors, 2015-2022

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Abstracts

Metal mesh transparent conductors have come into their own in the past year, emerging as a serious alternative to widely used indium tin oxide (ITO), principally in the touch screen sensor space but also beyond that sector, where meshes are already superior in their ability to effectively spread voltage across a large panel. In fact they have been around for a long time in areas such as solar PV and digital signage, to further extending into more touch applications as well as other markets such as thin-film PV, antennas, EMI/RFI, transparent heating elements, and OLED lighting.

At the same time, metal mesh TCs still have to overcome some disadvantages. Visibility of grid lines is a no-go for most applications under consideration, as is the problem of 'moire' pattern effects—and newer iterations of metal mesh TCs seem to be solving both issues. Metal meshes also require significant and costly customization for displays. Efforts to replace silver with copper in metal meshes has proved quite challenging. These factors—plus our observation of some recent news and rumors—suggest metal meshes might not penetrate the TC market as fast as once hoped.

In this report, NanoMarkets analyzes the latest developments in metal mesh TC technology and what we see as the market opportunities, and thus revenue potential, across several key end application sectors. We also compare and contrast metal meshes against the other alternative TC technologies (silver nanowires, carbon nanotubes, conductive polymers, other metal oxides) as well as the incumbent and dominant ITO, to gauge how such market opportunities might be apportioned. The analysis in this report is based on NanoMarkets' extensive program covering the transparent conductor sector for the past decade.

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