

# Transparent Conductive Films: Technologies and Global Markets

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## Abstracts

### REPORT SCOPE:

For the purpose of this report, transparent conductive films are defined as thin films of optically transparent and electrically conductive material. Transparent conductive films, or TCFs, are used as transparent electrodes in the manufacturing of touch screens, LCDs, cover electrodes for solar cells, organic light-emitting diodes, etc. TCFs consist of a transparent polymer-based substrate (50–150  $\mu$ m thick) on which a thin layer of conductive material is applied (less than 100 nm thick). Conductive layers usually employ metal oxides ( $\text{InO}_2:\text{Sn}$ ,  $\text{SnO}_2:\text{F}$ ), silver nanofibers, metal meshes (copper, silver, gold), graphene, conductive polymers (PEDOT: PSS) or carbon nanotubes. TCFs have become integral components of many devices, including electrochromic glass, solar panels, and LCD and OLED displays. This is a growing market.

Currently, transparent conductive films are mostly produced using indium tin oxide (ITO), a degenerately doped n-type semiconductor. However, due to advantages such as processability, stability and high conductivity, carbon nanotubes have received strong attention from electronics-industry researchers over the past several years as an alternative to ITO. Metal mesh is another material that is witnessing strong demand and growth due to several advantages, including high flexibility.

This report covers the global market for transparent conductive films and technologies for various end-user application industries. The market is broken down by application, type and material. Revenue forecasts from 2020 to 2025 are given for each segment, and regional markets with estimated values derived from manufacturers' total revenues.

The report also includes a discussion of the major players across each regional market. Further, it explains the major drivers and regional dynamics of the global TCF market and current trends within the industry.

The report concludes with a special focus on the vendor landscape and includes detailed profiles of the major vendors.

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The report covers following stakeholders in the market -

Chemicals and high-performance material manufacturers.

Electronics and electronic materials manufacturers.

Nanomaterial and nanotechnology companies.

Diversified industrial manufacturing companies.

The report excludes companies that are not manufacturers (distributors, suppliers, etc.). Some of these companies may brand the product as their own and resell it. However, the report excludes those companies as well to avoid double counting revenue. Post-sale service providers are excluded from the scope of the report as well.

For large diversified manufacturers, the report only considers (through derivation and assumption wherever required) transparent conductive film revenue.

The report begins by introducing the reader to how the global market for transparent conductive films and technologies is evolving and how various factors impact the market.

The report then proceeds to identify -

Primary forces with a direct impact on the market.

Secondary forces that have an indirect impact.

Key challenges that may hinder the growth of this market.

Key trends visible in the market.

Leading segments within the market.

## **REPORT INCLUDES:**

61 tables

An overview of the global markets for transparent conductive films (TCFs) and technologies

Analyses of the global market trends with data corresponding to market size for 2019, estimates for 2020, and projections of compound annual growth rates (CAGRs) through 2025

Latest information on major market drivers, opportunities and challenges, industry chain structure, regulatory and environmental updates, macroeconomic trends, and technological advancements that are affecting the overall marketplace

Emphasis on importance of scientific research, product innovation, indium tin oxide (ITO) in TCFs processing, applications of graphene-based TCFs, and feasibility study of carbon nanotubes

Identification of the companies that are best positioned to meet this demand because of their proprietary technologies, strategic alliances or other advantages

An exhaustive patent analysis covering significant allotments of the U.S. patents

Competitive landscape of the global market, market share analysis of leading companies encompassing their successful marketing strategies, key

contribution, and recent developments

Comprehensive company profiles of leading market participants, including C3Nano, Canatu Oy, GEOMATEC Co. Ltd., Kaneka Corp., TDK Corp., and Toray Advanced Film Co., Ltd.

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CHASM ADVANCED MATERIALS

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