

Non-Glass Capacitive Sensors Market by Type (Plastic/Polymer -PMMA, PC, PET PETG and Others, ITO Film, Non-ITO Film and Sapphire), Application (Consumer and Commercial) and Geography - Global Trends and Forecast to 2014 - 2020

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Abstracts

In 2012, with the introduction of the first touch-enabled smartphones, iPhone by Apple (U.S.) has triggered the capacitive sensors market immensely. No sooner after this launch, Samsung (South Korea) also entered into this competition by launching the Samsung S5 with the capacitive sensor technology. Rapid technological developments, increasing demand for simple and secured access for users to their devices, and mobile commerce and high adoption rates of smartphones are the major drivers for such a high growth of the capacitive sensors market. The capacitive sensor for non-glass surface market is estimated to grow at a CAGR of 14.3% from 2014 to 2020. This escalation develops the need to analyze, review, and forecast the growth of the capacitive sensors market.

The research published on capacitive sensors for non-glass surfaces informs about the integration of non-glass surfaces (covers) on to the capacitive sensors, various methods used in fabrication, various technologies, and various advantages and disadvantages. The chapter majorly informs about the non-glass surfaces such as plastic, polymer, and sapphire.

Technological improvements have increased the robustness of touch screen covers but manufacturing as well as cost related challenges have restrained their mass manufacturing. As a result, the market price of these types of non-glass surfaces is five to seven times the market price of the regularly used glass screen covers in capacitive touch screens. There are several important trends which have been driving the

technological innovations in the industry since its early days, which, directly or indirectly, drive the capacitive sensors market currently. The major trend is the size reduction of capacitive sensors which enable their integration into smartphones, tablets, PCs, and many other small devices without sacrificing other functionalities.

The study elucidates the situation of capacitive sensors in non-glass surface types and shows the application market of capacitive sensors in consumer electronic applications, commercial electronic applications, and other applications with accurate market metrics. The study clarifies that currently, capacitive sensors for non-glass surface applications' market size is highest for smartphone and tablet and both the applications are expected to grow at a high CAGR during 2014 to 2020.

The “capacitive sensors for non-glass surface” market research study is segmented on the basis of geography into North America, Europe, Asia-Pacific (APAC), and Rest of the World (RoW). Among these, the U.S., Japan, China, the U.K., Taiwan, and South Korea are the highest market sharing countries in the capacitive sensors market.

The leading companies in the capacitive sensors for non-glass surface market covered in the report are Apple Inc. (U.S.), GT Advanced Technologies Inc. (U.S.), Rubicon Technologies (U.S.), Graphenea SA (Spain), TPK Holdings Co. Ltd. (Taiwan), Cambrios technologies (California), Iljin Display (South Korea), General Electric (U.S.), Canatu Ltd. (Finland), and Cima Nanotech (U.S.), among others.

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About

The capacitive sensors market for non-glass surfaces has a huge market potential in consumer and commercial applications. It offers attractive new business opportunities to the traditional electronics manufacturing industries as well as to various specialized startups. Moreover, this technology can offer innovative products to end-users. It is an emerging technology, moving from laboratories and research organizations to industrial players at a fast pace.

The market for capacitive sensors for non-glass surfaces is expected to reach \$XX million by 2020 from \$XX million in 2013 at a CAGR of XX% from 2014 to 2020. The growth of the market is primarily triggered by the consumer electronics industry. Additionally, the market is tending toward low cost, scratch resistant, flexible, and highly conductive electronics gadgets. All these factors influence the growth of the capacitive sensors market for non-glass surfaces.

In this report, the global capacitive sensors market for non-glass surfaces is broadly classified into plastic/polymer and sapphire. The plastic/polymer segment was valued at the largest market size of the global capacitive sensors market for non-glass surfaces at a value of \$XX million in 2014; whereas, the sapphire market is expected to grow at the highest CAGR of XX% from 2014 to 2020. The growth of this market is mainly driven by a wide range of applications such as smartphones, tablets, notebook PCs, office equipment, and many others. Moreover, plastic, polymer, and sapphire are more scratch resistant and flexible as compare to glass surfaces. Hence, these non-glass surfaces are gaining a huge demand in the market over glass surfaces. Currently, the market size is very low as various applications are in the R&D phase. However, it will grow at a faster pace in the future due to technological advancements and commercialization of products. The key players in the plastic/polymer and sapphire market are SABIC (Saudi Arabia), Cima Nanotech (U.S.), Apple Inc. (U.S.), and GT Advanced Technology (U.S.).

On the basis of different types of plastic/polymer, the global capacitive sensors market for non-glass surfaces has been segmented into PMMA, PET, Polycarbonate (Lexan), PETG, and others. This was valued at \$XX million in 2013 and is expected to reach \$XX by 2020 at a CAGR of XX% from 2014 to 2020. The PET market accounted for the largest share —XX%— of the capacitive sensors market for non-glass surfaces in 2013; whereas the market of PMMA accounted for XX% in 2013. The PMMA market is growing at the highest CAGR of XX% from 2014 to 2020. The increasing number of

applications with PMMA for new innovations of transparent displays and devices is driving the growth of the PMMA market. The availability of latest technologies and the cheaper manufacturing costs also play major roles for the market's growth.

North America dominated the global capacitive sensors market for non-glass surfaces at a value of \$XX million in 2013 and is expected to reach \$XX million by 2020, growing at a CAGR of XX% from 2014 to 2020. North America has a strong value chain of materials, advanced technologies, government funding, and presence of research institutes, which helps the country to hold a major market share. The major players in North America are Cima Nanotech (U.S.), Apple Inc. (U.S.), GT Advanced Technology (U.S.), Rubicon Technology Inc. (U.S.), and Cambrios Technology Corp. (U.S.).

APAC is growing at the highest CAGR of XX% from 2014 to 2020. Factors such as availability of low cost labor, raw materials, R&D units, and low cost manufacturing technologies drive the growth of the APAC capacitive sensors market for non-glass surfaces. Non-glass displays are manufactured mainly in the Asia-Pacific region. APAC comprises majority of plastic/polymer and sapphire material suppliers and key consumers of touch panel displays such as TPK Holdings Co. Ltd. (Taiwan), Iljin Display Co. Ltd. (South Korea), and Samsung Electronics Co. Ltd. (South Korea). These players will drive the growth of the APAC capacitive sensors market for non-glass surfaces in future.

The global capacitive sensors market for non-glass surfaces is segmented into five major technologies, namely ITO, Silver Nano-Wires (SNWs), metal mesh, Carbon NanoTubes (CNTs), and Graphene. Majority of the market share, that is XX%, was held by the ITO technology in 2013. The steady growth of transparent and flexible electronics is the major factor which propels the growth of the global ITO market. Asia is the leading producer and consumer of ITO due to huge electronics' markets in China, Japan, and Korea. Companies such as Keeling & Walker Ltd. (U.S.) and Kurt J. Lesker Co. Ltd. are the major companies operating in the global ITO market.

The other alternatives of ITO, such as silver non-wires, metal mesh, carbon nanotubes, and Graphene, are gaining demand in the market. Metal mesh accounted for a share of XX% in 2013 and is expected to reach up to XX% by 2020. The silver nanowires accounted for a share of XX% in 2013 and are expected to reach up to XX% by 2020. CNTs held a share of XX% in 2013 and are projected to grow up to XX% by 2020. The global market for CNTs has grown in the past few years, driven by superior properties and the adaptability of CNTs in major end-user industry applications. Graphene held a share of XX% in 2013 and it is expected to reach up to XX% share by 2020. The

growing R&D activity in developing alternatives for ITO is a major driving factor for the growth of SNWs, metal mesh, CNTs, and Graphene. Companies operating in this market are Graphenea SA (Spain), Cambrios Technology Corp. (U.S.), Arkema S.A. (France), CNano Technology Ltd. (U.S.), 3M (U.S.), and ATMEL Corp. (U.S.).

Alternatives of ITO can be used to lay down conductive polymers to form touch panels and capacitive touch sensors. Different manufacturers in this research have used the technique to create thin layers of its conductive polymers with a resistance of less than 100 ohms per square meter. ITO for touchscreens is laid down using industrial sputtering techniques; these are more expensive than the inkjet printing, spin coating, and slit coating mechanisms. Moreover, Indium is also an expensive metal with a limited global supply and ITO is inflexible. Hence, substituting it will allow increased flexibility for plastic screens as well as cutting costs. Nanowires and nanoparticles have become nearly a decade head start in becoming the much-needed ITO replacement among these are silver nanowires, metal mesh, Graphene, carbon nanotubes, and PEDOT.

With the emergence of new, superior transparent conductive materials, the projected capacitive touch devices market is on the verge of a transformation. ITO will be replaced by lighter, bendable films that deliver enhanced optical quality at lower production cost.

Smartphones, tablets, ultra-books, and other existing devices will be thinner, lighter, and more responsive. Moreover, better, cheaper transparent conductive materials will drive technological experimentation and progress, opening the door for cutting-edge designs and enabling a bright future for touchscreens.

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Product name: Non-Glass Capacitive Sensors Market by Type (Plastic/Polymer -PMMA, PC, PET PETG and Others, ITO Film, Non-ITO Film and Sapphire), Application (Consumer and Commercial) and Geography - Global Trends and Forecast to 2014 - 2020

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