

# Perovskite Solar Cells Market Report (2022 to 2027) – Trends, Share, Size, Opportunity, and Forecast | Astute Analytica

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/EINPresswire.com/ -- Astute Analytica reports that the [global perovskite solar cells market](#) will grow at an astounding compounded annual growth rate (CAGR) of 28.7% during 2022-2027. The market is expected to grow to a size of US\$ 2,012.8 million by 2027.

The global perovskite solar cells market has significant potential in the coming years, owing to factors, like growing initiatives to increase the deployment of environmentally friendly energy, combined with the low production cost associated with perovskite solar cells and benefits like the excellent performance of the cells. Perovskite solar cells put excellent efficiency in their performance, as opposed to other copper indium gallium selenide solar cells.

Further, the rising trend of smart windows, smart transportation, power stations, etc., will significantly upscale the demand for the cells during the analysis period.



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## Perovskite Solar Cells Market: Factors Influencing the Market

The attractive technological advancements will shape the outlook of the perovskite solar cells market. For instance, in September 2022, Imec and TU Delft, TNO, and TU Eindhoven, partners in Solliance, joined hands to develop more efficient tandem solar cells that go beyond the limits of other commercial photovoltaic (PV) modules. The development of the four-terminal perovskite/silicon tandem devices reached robust 30% efficiency, which has been achieved by combining the perovskite solar cell with conventional silicon solar cell technologies.

Moreover, the low manufacturing cost of the device and its contribution to greenhouse reduction will further fuel the growth of the market, as government bodies are constantly making efforts in reducing carbon emissions.

The U.S. Department of Energy (DOE) made headlines in March 2021 for its Solar Energy Technologies Office (SETO) Fiscal Year 2021 Photovoltaics and Concentrating Solar-Thermal Power (FY21 PV and CSP), another program aimed at bringing advancements in perovskite solar cells. According to the information developed from the news resources, the department has set aside a budget of US\$ 39.5 million for advancing R&D capabilities aimed at bringing out advancements in solar PV and CSP. Additionally, SETO in the US has been working on the key challenges that need to be addressed for perovskite technologies. Apart from SETO 2021, the department has funded various other projects like SETO 2020 Photovoltaics, SETO FY20 Perovskite funding programs, and Perovskite Startup Prize.

On the flip side, the fact that perovskite solar cells emit lead during the manufacturing process will hamper the growth of the market. The emitted lead pollutes air, water, and soil. Moreover, the rising transformation to renewable energy sources is expected to hamper industry growth.

### Geographical Market Analysis

The Asia-Pacific perovskite solar cells market will maintain its lead by holding a share of 55% in 2021. Meanwhile, China and Japan have registered a major contribution in terms of manufacturing and distribution of perovskite solar cells in 2021. China accounts for 60% of the Asia-Pacific perovskite solar cells market, followed by Japan being the second leading country in the leading regional market. In April 2021, China set a world record by exceeding China's perovskite solar module efficiency by 20%. Additionally, renowned companies are making potential efforts to outperform in the race. For instance, Boamax Technologies Group, a renowned equipment maker based in China, joined forces with the researchers from Xidian University in September 2022 with the aim to develop and sell perovskite solar cells.

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Europe, on the other hand, is emerging as the second largest regional market for perovskite solar cells market with a share of 30% registered in 2021. The ongoing research projects in Japan, Europe, and the US are the main drivers driving the growth of the market. Europe is maintaining a strong foothold due to the directives like the Waste Electrical & Electronic Equipment Directive (WEED) and the Restriction of Hazardous Substances (RoHS) directive introduced by the European Union. These directives aim at decreasing and monitoring the potential impact of lead on the environment. The impact of the directives has resulted in a 94% reduction in lead content, which is emitted during the production of electronics, such as beverage dispensers, laptops, printers, watches, videogames, gardening equipment, etc.

Moreover, the US government is in constant efforts to reach the decarbonization goals of 100% carbon-free electricity development by 2035. The government is determined to reach net-zero economy-wide carbon emissions by 2050, which opens doors of opportunities for renewable technologies.

## Perovskite Solar Cells Market: COVID-19 Impact Analysis

The COVID-19 pandemic shifted the focus of government bodies and research organizations by highlighting the need to look over saving lives before anything else. This resulted in the dramatic fall of the perovskite solar cell markets as most of the industries needed to abide by the social distancing restriction. Additionally, supply chain and manufacturing disruptions associated with PV halted various PV installation projects, thereby leading to a loss in the market. Countries, which hold the largest shares in the perovskite solar cells market, including China, the United States, Japan, and India, were also worst affected by the pandemic. The revival of the market in the areas is expected to increase at its full potential as the demand is improving on a regular basis.

## Competitive Outlook

Some of the key market players profiled in the perovskite solar cells market include Solaronix SA, Dyenamo, GCL, Panasonic Corporation, Alfa Aesar, Saule Technologies, BASF SE, Hubei Wonder Solar, Swift Solar, Merck, Fujifilm Corporation, Energy Material Corporation, Oxford PV, Fujikara, InfinityPV, Frontier Energy Solutions, Sharp, Hunt Perovskite Technologies (HPT), Jinkosolar, etc. Firms including Alfa Aesar, Jinkosolar, Merck, and SwiftSolar hold a massive share of 29.70 % making them leaders in the perovskite solar cells market.

## Segmentation Analysis

The global perovskite solar cells market is segmented on the basis of product types, modules, structure, application, and region. Of all the key products, the flexible PSCs segment will record promising growth, owing to the technical specification of the technology. Meanwhile, in the key module segment, the flexible cable modules will grow at an exponential rate of 29.8%, owing to the factors like excellent long-term stability and promising applications of flexible modules such as electric chargers, industrial roofing, and others. Among the key application segment, the utility segment in the perovskite solar cells industries hold a tremendous opportunity of US\$ 68.8 Mn during the study period.

## Segment Overview of the Global Solar Perovskite Market

By Product Type:

Hybrid PSCs

Flexible PSCs

Multi-junction PSCs

By Module type:

Rigid Module

Flexible Module

By Structure:

Planar Perovskite solar cells

Mesoporous Perovskite solar cells

## By Application:

Smart glass

Solar panel

Perovskite in tandem solar cells

Portable devices

Utilities

BIPV (Building-integrated photovoltaics)

Defense and Aerospace

Power Station

Transportation

## By Region

North America

The U.S.

Canada

Mexico

South America

Brazil

Argentina

Rest of South America

Asia Pacific

China

India

Japan

Australia & New Zealand

ASEAN

Malaysia

Indonesia

Thailand

Philippines

Vietnam

Rest of ASEAN

Rest of Asia Pacific

Middle East and Africa

UAE

Saudi Arabia

Qatar

South Africa

Egypt

Rest of MEA

Europe

Eastern Europe

Russia

Poland

Rest of Eastern Europe

Western Europe

The UK

Germany

France

Italy

Spain

Rest of Western Europe

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