

Next-Generation Solar Cell Development

(Amount covered by the government: Up to 49.8 billion yen)

- Overcoming location constraints is the key to expanding solar power. Next-generation solar cells (perovskite solar cells) that can be installed on the walls of houses and buildings need to be developed.
- Japan is currently among the top developers of perovskite solar cells (achieving the world's highest conversion efficiency). Meanwhile, development in Europe, the United States and China is also progressing rapidly.
- Work on every stage from R&D, through developing the underlying technology related to commercialization and the production system, and all the way to demonstration and practical use, with the aim of forming a market by FY 2030.

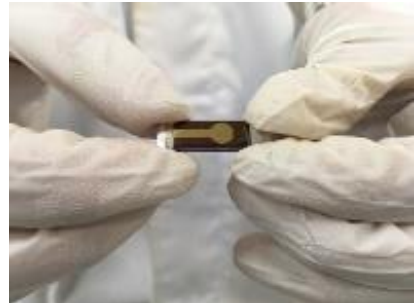
<Flow and challenges toward practical use>

(1) Developing technology at the laboratory level

Example challenge:

- Searching for combinations of raw materials that will achieve high performance (conversion efficiency and durability)

Ultra-small-area size in the laboratory



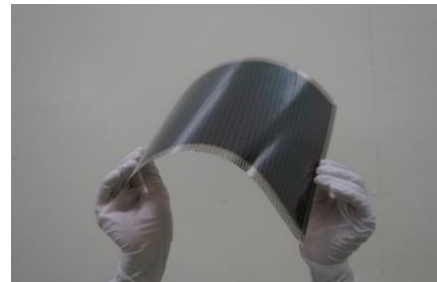
Source: The University of Tokyo

(2) Scaling up for commercialization

Example challenge:

- Developing manufacturing technology for scaling up and mass-production

Example of next-generation solar cells of practical-use size



Source: Toshiba

(3) Demonstrating in cooperation with users

Example challenge:

- Actually installing them on the walls of buildings to test their performance, and identify and improve any issues

Example of solar panels installed on the walls of buildings



Source: Taisei Corporation

R&D goal: Achieve a power generation cost of 14 yen/kWh or less under certain conditions (access to direct sunlight, etc.) by FY 2030