Yano Research Institute

August 29, 2016

RESEARCH SUMMARY

Yano Research Institute Ltd.
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Flexible Stretchable Device/Component Market in Japan: Key Research Findings 2016

◆ Research Outline

Yano Research Institute has conducted a study on the flexible stretchable device/component market with the following conditions:

1. Research period: From April to July, 2016
2. Research targets: Makers of conductive pastes, conductive fibers, circuit boards, functional materials/wear, etc.
3. Research methodologies: Face-to-face interviews by the expert researchers, surveys via telephone, and literature research

What are Flexible Stretchable Devices?

Flexible stretchable devices in this research indicate some sort of wearable devices in the forms of clothing, tape/patches, wrist-bands, breast bands and etc. They differ from the conventional wearable devices in that they achieve elasticity and flexibility by using fiber, resin, rubber or elastomers in the basic materials.

◆ Key Findings

■ Vigorous Development Seen for Flexible Stretchable Devices, or Stretchy Wearable Devices

In today's world, where IoT has been attracting attention for its availability to connect various things to the internet, one of the new trends is to commercialize various types of wearable devices. Progress of their evolvement into various shapes is categorized into such types as wrist-watches, wrist bands, eye-glasses, and others. They are still evolving, making themselves smaller, lighter in weight, and more flexible (bendable), in order to respond to various demands.

In recent years, flexible stretchable devices, i.e., the wearable devices with flexibility or elasticity in their basic materials have been vigorously developed. In 2014, a sports wear that can measure one's cardiac rate by just wearing it went into market. For electrodes of such clothing, functional materials highly impregnated with conductive polymers in the openings of nanofibers are used. As more progress is seen for flexible stretchable devices, such components of the devices like electrodes, wiring materials, and conductive materials are also enhanced to be used in such devices.

■ Domestic Flexible Stretchable Devices/Components Market Expected to Achieve 59.594 Billion Yen by 2025

Unlike conventional wearable devices, those flexible stretchable devices are able to acquire accurate bio information any time, regardless of whether during heavy physical activities or while sleeping, without interrupting comfort of the wearer. Not only the sports industry, where such devices have begun being put into practical use, but also the construction and transportation industries are likely to be proactively in demand for those devices, backed by the needs from some enterprises that have recognized the importance of managing and ensuring safety of their employees, and by the general needs to reduce the burden of medical expenses.

Furthermore, the demands of the devices are likely to expand in the sectors of medical, long-term care, healthcare, and entertainment. Therefore, the domestic flexible stretchable device market is expected to attain 21.1 billion yen by 2020, and 59.594 billion yen by 2025, based on the shipment value of manufacturers.

◆ Report Format:

Published report: "Stretchable Devices and Components Market in 2016"
Issued on: July 29, 2016
Language: Japanese
Format: 129 pages in A4 format
Price: 180,000 yen (The consumption tax shall additionally be charged for the sales in Japan.)

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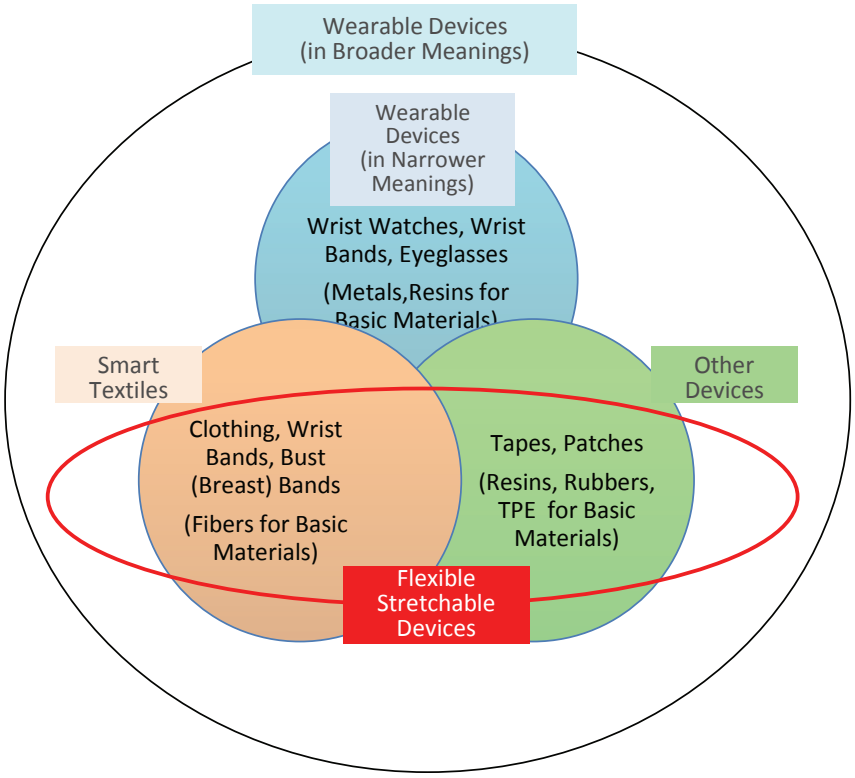
■ Figure 1: Positioning of Flexible Stretchable Devices



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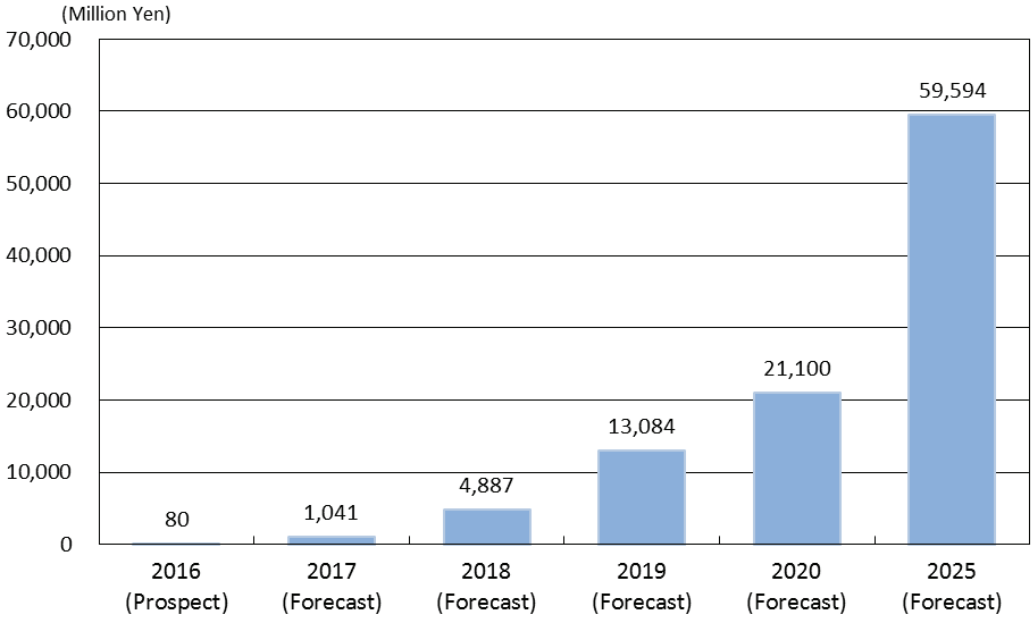
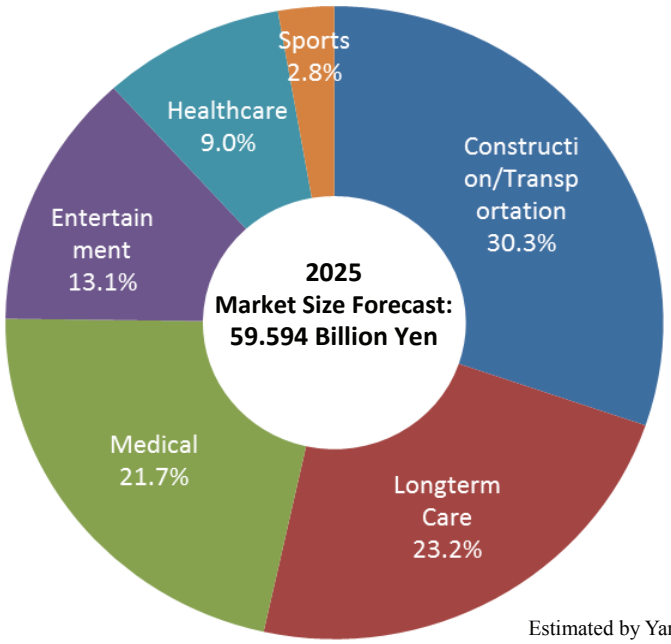
■ **Figure 2: Forecast of Size of Domestic Flexible Stretchable Device Market**



Estimated by Yano Research Institute

Notes:
1. The market size is calculated based on the shipment value of manufacturers.
2. The figures in 2016 are prospect, and the figures in 2017 and beyond are forecast.

■ **Figure 3: Forecast of 2025 Domestic Flexible Stretchable Device Market Share by Sector**



Estimated by Yano Research Institute

Notes:
3. The market size is calculated based on the shipment value of manufacturers.
4. Since some values have been rounded, they may not coincide with the ratio values.