

Growing Wearable Technology is Driving the Growth of the Global Flexible Battery Market; states TNR

The global flexible battery market is expected to reach USD 881.7 Billion by 2031, growing at a compound yearly growth rate of 24.1%

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/EINPresswire.com/ -- The market for flexible batteries is predicted to grow considerably in the future years. The global flexible battery market is

expected to reach USD 881.7 Billion by 2031, growing at a compound yearly growth rate of 24.1% throughout this time period. The increasing demand for wearable gadgets, as well as the growing trend towards miniaturization and flexibility of electronics, are projected to be the key drivers of development.

Flexible batteries are a type of battery technology designed to be flexible and conformable to various shapes and forms. They are particularly useful in applications where traditional rigid batteries are impractical due to space constraints, design requirements, or the need to integrate batteries into unconventional objects. Flexible batteries can be bent, twisted, and molded without affecting their performance, making them versatile for a range of applications.

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Global Flexible Battery Market Snapshot

Market Value in 2022 : USD 158.4 Billion

Market Value Forecast 2031: USD 881.7 Billion

Growth Rate: 24.1%

Historical Data : 2015-2021

Base Year: 2022

Forecast Data: 2023-2031

Global Flexible Battery Market Trends



Along with the fast development of flexible and wearable electronic devices, there has been a tremendous need for flexible power sources, which resulted in significant research and development efforts into flexible batteries. Recently in 2023, a team of University of Houston researchers designed and built a prototype of a completely flexible fabric-based lithium-ion battery. The woven silver cloth was great for this since it mechanically deforms or stretches while still providing the essential electrical conduction routes for the battery electrode to work properly. Stretchable technology expands the potential for wearable devices and implanted biosensors by providing reliable performance and safer features.

Numerous companies, including LG Chem, Samsung SDI, Apple and Blue Spark Technologies, are actively researching and commercializing flexible battery technology. However, there is still opportunity for innovation in this field, and as technology improves, new competitors are expected to enter the market. The future of flexible battery market holds significant promise as technological advancements continue to drive innovation and open up new possibilities.

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Global Flexible Battery Market Future

Flexible batteries are gaining prominence as critical energy storage technologies for the future of flexible applications. In a variety of sectors, these batteries fulfil the demand for high energy density as well as safety criteria. They are especially important for flexible and wearable electronics, which have found widespread application in applications such as flexible displays, healthcare devices, portable communications, and e-textiles. Revolutionary advances in flexible-battery technology, as well as the firms that support them, will drive the global flexible battery industry forward.

Key Highlights from the Global Flexible Battery Market

- Several types of flexible battery technologies are being developed and utilized for various applications. Among these, lithium-ion polymer batteries (LiPo) and thin-film batteries were among the most common types of flexible batteries due to their well-established performance and versatility.
- On the other hand, zinc based flexible batteries are anticipated to be the fastest growing segment in the upcoming years. Due to their great capacity, cheap cost, and inherent safety, zinc-based batteries are promising options for flexible energy storage. Flexible zinc-air batteries based on hydrogel can have a cycle life of more than 300 hours, making them ideal in the wearable electronics category. Ongoing research and advances in zinc-based flexible batteries are assisting the market's overall expansion. Recently the rechargeable silver oxide-zinc battery was created by a team of researchers from the University of California (UC) San Diego and the California firm ZPower. It is said to be easier to manufacture than other flexible batteries and to perform better against high current discharge.
- Asia Pacific region is anticipated to be the fastest growing region in the flexible battery market during the forecast period 2023-2031. Asia has a large consumer electronics market, with high demand for smartphones, wearables, and other portable devices which is creating a significant demand for flexible batteries that can power these devices comfortably and efficiently. Moreover

Companies like Samsung SDI and LG Chem, based in South Korea, have been actively involved in developing flexible battery technologies. South Korea is a significant player in the electronics and battery industries, contributing to the growth of the overall flexible battery market. In addition in the last few years new emerging players are entering the market in China and Japan due to their extensive manufacturing capabilities and research.

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Competitive Landscape of Global Flexible Battery Market

The global flexible battery market is competitive, with intense competition among leading competitors striving for market dominance. These companies compete on characteristics such as technology innovation, industry experience, scalability, cost-effectiveness, and the capacity to supply customised solutions. Emerging trends, changing customer requirements, strategic alliances, and acquisitions all have an impact on the competitive environment, making it a dynamic and developing market.

Key Developments in the Global Flexible Battery Market

- In August 2023, Nanyang Technological University in Singapore (NTU Singapore) researchers have developed a flexible battery as thin as a human cornea. When immersed in a saline solution, this unique energy storage device charges itself and has the potential to power smart contact lenses in the future. Human tears, which contain sodium and potassium ions in lesser concentrations, might potentially be used to power the battery.
- In Dec 2021, Scientists at the University of British Columbia (UBC) have created the world's first flexible and washable battery. When twisted or stretched to double its normal length, or when put in the laundry, the battery activates.

Major players operating in the global flexible battery market are

- o Apple Inc
- o Enfucell
- o Imprint Energy
- o Jenax Inc.
- o LG Chem
- o LiBEST
- o Molex
- o Panasonic
- o ROCKET Poland Sp. z o.o.
- o SAMSUNG SDI CO.,LTD.
- o Shenzhen Grepow Battery Co., Ltd
- o Other Industry Participants

Global Flexible Battery Market

By Type

- o Lithium-Polymer batteries

- o Thin Film batteries
- o Printed batteries
- o Solid State batteries
- o Zinc Based batteries
- o Others

By Chargeability

- o Single Use
- o Rechargeable

By Application

- o Wearable Medical Devices
- o Consumer Electronics
- o Smart Packaging
- o Smart Labels and Tags
- o Smart Apparels
- o Others

By Region

- o North America (U.S., Canada, Mexico, Rest of North America)
- o Europe (France, The UK, Spain, Germany, Italy, Nordic Countries (Denmark, Finland, Iceland, Sweden, Norway), Benelux Union (Belgium, The Netherlands, Luxembourg), Rest of Europe)
- o Asia Pacific (China, Japan, India, New Zealand, Australia, South Korea, Southeast Asia (Indonesia, Thailand, Malaysia, Singapore, Rest of Southeast Asia), Rest of Asia Pacific)
- o Middle East & Africa (Saudi Arabia, UAE, Egypt, Kuwait, South Africa, Rest of Middle East & Africa)
- o Latin America (Brazil, Argentina, Rest of Latin America)

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