Chinese Firm Develops 'Nuclear Battery'

Why In News

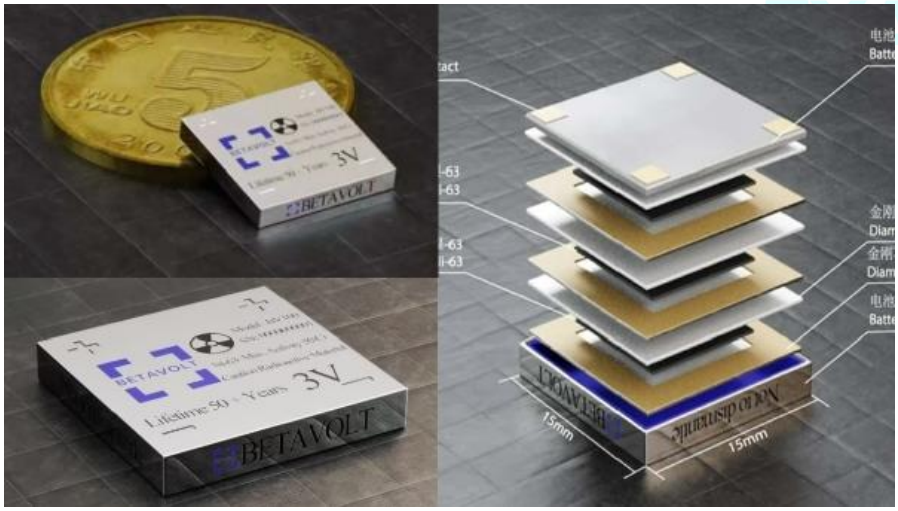
- A start-up in China has created a new battery that it claims can **generate electricity for 50 years** without the need for **charging or maintenance**.
- A report in The Independent, it's a nuclear battery developed by **Beijing-based Betavolt**, And don't imagine a massive size after reading the word "nuclear".

- Betavolt has managed to **squeeze 63 isotopes** into that module that's smaller than a coin, the outlet further said in its report.
- The company said it is the **first battery in the world** to realise the miniaturisation of atomic energy.

All About Battery

- The next-generation battery is already being tested and will be mass produced for commercial applications like phones and drones.
- **"Betavolt atomic energy batteries** can meet the needs of long-lasting power supply in multiple scenarios, such as aerospace, AI equipment, medical equipment, microprocessors, advanced sensors, small drones and micro-robots,".
- "This new energy **innovation will help China gain a leading edge** in the new round of the AI technological revolution," it further said.

- A **nuclear battery converts radioisotope energy** into electrical energy, and has an advantage over other types of batteries due to its high energy density. Such batteries use energy from the **decay of a radioactive isotope** to generate electricity.
- Nevertheless, the newly developed nuclear battery has a **layered structure** which apparently makes it **fire resistant and jerk proof** — which **means it is not** likely to **explode when there's a sudden external force** applied on the device running a nuclear applied on the device running a nuclear battery.



- The battery is also said to be capable of working in temperatures ranging from -**60 degrees Celsius to 120 degrees Celsius.**
- It measures **15 x 15 x 5 millimetres** and is made of wafer-thin layers of nuclear isotopes and diamond semiconductors, as per Futurism.
- The nuclear battery currently generates **100 microwatts** of power at 3 volts. However, the goal is to reach a **1-watt power output by 2025.**

- Betavolt said the radiation poses no danger to the human body, making it usable in medical devices such as pacemakers.

- The technology used in **the battery taps into the energy** from decaying isotopes, a concept that was first explored in the 20th century. It then converts this energy into electricity.
- China has been working towards **miniaturising nuclear batteries** under its 14th Five-Year Plan from 2021-2025.
- However, The Goal Is To Reach A **1-watt Power Output By 2025**. Betavolt Said The Radiation Poses No Danger To The Human Body, Making It Usable In Medical Devices Such As Pacemakers.