Aluminium-air Battery

- Aluminum-air battery **utilise oxygen** in the air which reacts with an aluminum hydroxide solution to oxidize aluminum and produce electricity.
- **Aluminum-air batteries** are said to be a lower-cost and **more energy-dense** alternative to lithium-ion batteries, which may reduce the cost of an electric vehicle.
- **This battery cannot be recharged** like a lithium-ion battery. Therefore, large scale operation of aluminum-air battery based vehicles will **require the wide availability of battery swapping stations.**
- However, aluminum-air battery-based electric vehicles run 400 km. or more at a time, while the fully charged lithium-ion battery can be useful only for 150-200 km.
- It is noteworthy that State-owned Indian Oil Corporation Ltd. has entered into a joint venture with Israel-based battery technology startup Phinergy to develop aluminium-air technology based battery systems for electric vehicles and stationary storage, as well as hydrogen storage solutions.