

Microbial Fuel Cell

April 10, 2020

Why in news?

These fuel cells installed in a London zoo have generated **botanical selfie** for the first time ever.

What is this?

- A device that converts chemical energy to electrical energy by the action of microorganisms.

The process



- The plants produce sugar and oxygen from water and CO₂ (photosynthesis) under sunlight
- These sugars do not remain in the leaves, but are transported throughout the plant to the stem and roots.
- Some of these sugars are excreted by the roots as a waste product from the plant.

Soil microorganisms break this down further, releasing energy.

This energy is captured using an anode (minus) and a cathode (plus) and charge a supercapacitor.

When the supercapacitor is full, the power is discharged and a photo is taken.

- Unlike solar panels, plants may thrive in the shade, shifting naturally in place to optimize the absorbing capacity of sunlight.