



Artificial Photosynthesis: AP

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- Scientists at the 'Jawaharlal Nehru Advanced Scientific Research Center', an autonomous institute of the Department of Science and Technology, have developed 'Artificial Photosynthesis' (AP), which follows the natural process of photosynthesis **to reduce carbon dioxide from the atmosphere.**
- This will allow the **excess carbon dioxide** present in the atmosphere to be **captured and converted into fuel.** The AP uses solar energy and **converts the captured carbon dioxide into carbon monoxide (CO)**, which can be **used as fuel** for internal combustion engines. Along this, **oxygen is also produced** from water in this process.
- In AP, scientists are essentially conducting the same fundamental process as in natural photosynthesis but with simpler nanostructures. For this, an integrated catalytic system comprising of a photosensitizer has been designed and fabricated. It can harness solar power and a catalytic centre that can eventually reduce CO₂.
- It is noteworthy that **photosensitizer molecules** are those that **absorb light and transfer electrons from incident light** to other nearest molecules.

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