

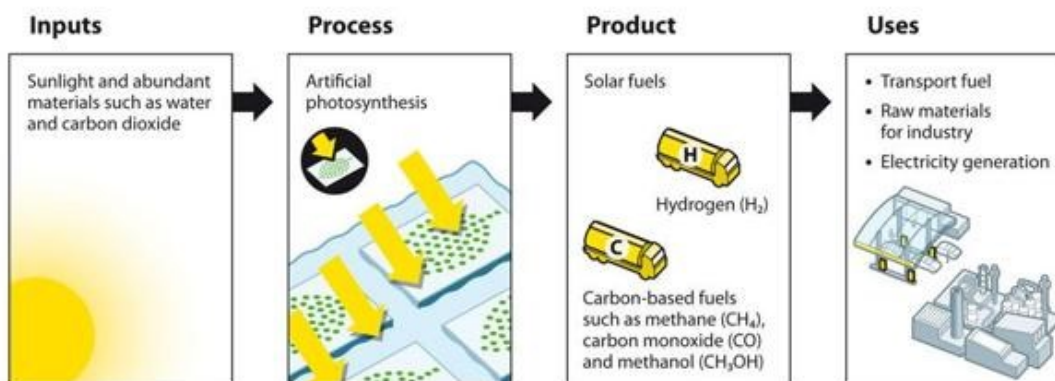
One impressive ability from nature is the process of photosynthesis performed mostly by plants and some bacteria. This process benefits the ecosystem by taking care of necessary actions such recycling “wastes” from the atmosphere (carbon dioxide) and producing not only its own nutrition (glucose), but also the essential oxygen for living organisms nearby. All of this, taking advantage of the nourishment captured from the sunlight.

A concept of “Artificial Photosynthesis” could be applied in the human world, inverting the way many industrial processes are powered and collecting simultaneously the residues in our atmosphere. This idea may sound similar to the current solar panels, but the essential difference is the absorption of CO₂ that Artificial Photosynthesis performs.

As can be observed in the image below, the cells in “Process” could be placed above a factory so that they can get the reactants needed to perform photosynthesis, fueling the entire production. Davey (2016) explains this importance with the *photosynthetic biohybrid system* (PBS) proposed by Peidong Yang, chemist at UC Berkley,

This difference is crucial. The electricity generated from solar panels simply cannot meet our diverse energy needs, but these renewable liquid fuels and natural gases can. Unlike solar panels, Yang’s PBS absorbs and breaks down carbon dioxide, releases oxygen, and creates a renewable fuel that can be collected and used. With artificial photosynthesis creating our fuels, driving cars and operating machinery becomes much less harmful.

Artificial photosynthesis pathway from sunlight to fuels



Bibliography

Davey, T. (September 30, 2016). *Artificial Photosynthesis: Can We Harness the Energy of the Sun as Well as Plants?* Future of Life Institute. Retrieved from:
<https://futureoflife.org/2016/09/30/artificial-photosynthesis/>