

Heterotrophs convert solar energy into chemical energy

Answer: The outcome of light reactions in photosynthesis is the conversion of solar energy into chemical energy that the chloroplasts can use to do work (mostly anabolic production of carbohydrates from carbon dioxide).

Only autotrophs can transform that ultimate, solar source into the chemical energy in food that powers life, as shown in Figure below. Photosynthetic autotrophs, which make food using the energy in sunlight, include (a) plants, (b) algae, and (c) certain bacteria.

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The light-dependent reactions of photosynthesis convert solar energy into chemical energy, producing ATP and NADPH or NADH to temporarily store this energy. In oxygenic photosynthesis, H_2O serves as the electron donor to replace the reaction center electron, and oxygen is formed as a byproduct.

Through photosynthesis, certain organisms convert solar energy (sunlight) into chemical energy, which is then used to build carbohydrate molecules. The energy used to hold these molecules together is released when an organism breaks down food.

Here, we summarize the current knowledge on PSII with emphasis on the basic principles that govern the conversion of light energy to chemical energy in PSII, as well as on the illustration of the molecular structures that enable these reactions.

For example, a potato plant captures photons then converts the light energy into chemical energy through photosynthesis, storing the chemical energy underground as carbohydrates. The carbohydrates in turn feed other living systems.

Through photosynthesis, certain organisms convert solar energy (sunlight) into chemical energy, which is then used to build carbohydrate molecules. The energy stored in the bonds to hold these molecules together is released when an organism breaks down food.

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