The end point of energy storage is chlorophyll

How is light absorbed by a chlorophyll molecule?
Figure 5.12 Light energy is absorbed by a chlorophyll molecule and is passed along a pathway to other chlorophyll molecules. The energy culminates in a molecule of chlorophyll found in the reaction center. The energy "excites" one of its electrons enough to leave the molecule and be transferred to a nearby primary electron acceptor.

What is the function of chlorophyll in a plant?
Within the thylakoid membranes of the chloroplast is a light-absorbing pigment called chlorophyll, which is responsible for giving the plant its green color. During photosynthesis, chlorophyll absorbs energy from blue- and red-light waves, and reflects green-light waves, making the plant appear green.

What happens when a chlorophyll molecule is excited?
When a chlorophyll molecule in the antenna complex is excited,the energy is rapidly transferred from one molecule to anotherby resonance energy transfer until it reaches a special pair of chlorophyll molecules in the photochemical reaction center.

What happens when a photon is captured by chlorophyll?
As the electron from the electron transport chain arrives at photosystem I,it is re-energized with another photon captured by chlorophyll. The energy from this electron drives the formation of NADPHfrom NADP +and a hydrogen ion (H +). Now that the solar energy is stored in energy carriers,it can be used to make a sugar molecule.

Where is the green pigment chlorophyll located?
The green pigment chlorophyll is located within the thylakoid membrane,and the space between the thylakoid and the chloroplast membranes is called the stroma (Figure 3,Figure 4).

Why is chlorophyll arranged within a leaf?
Molecules of chlorophyll,the key photosynthetic pigment in green plants,are arranged within a leaf such that they minimize the plant's need to transport incoming solar radiationwhile also increasing a leaf's photosynthetic output.

Photon energy absorbed by P700 (a chlorophyll dimer with an absorption maximum near 700 nm) loosens an electron, forming excited P700*, which is easily ionized and raised in energy to ...

In this process of photolysis ("splitting by light"), ($H_{2} O$) molecules are broken into hydrogen ions, electrons, and oxygen atoms. The electrons replace those originally lost from chlorophyll. ...

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The energy is transferred from chlorophyll to chlorophyll until eventually (after about a millionth of a second), it is delivered to the reaction center. ... the energy carrier NADPH for delivery to the ...

A photon of light energy travels until it reaches a molecule of chlorophyll. The photon causes an electron in the chlorophyll to become "excited." The energy given to the electron allows it to ...

In this type, the oxidation of complex energy storage molecules (i.e., sugars, lipids, etc.) from food is used to provide energy to produce a proton gradient, which, in turn, is used to drive the ...

Lumen: The space within the thylakoid which contains chlorophyll and other pigments; Granum: A stack of thylakoids; Chlorophyll: A pigment used in plants to capture energy from the sun; ...

Absorption of Light Energy. Light energy of specific wavelengths is absorbed by pigments. Chlorophylls and carotenoids are the two major classes of photosynthetic pigments found in plants and algae; each class has multiple ...

In short, the light energy has now been captured by biological molecules but is not stored in any useful form yet. The energy is transferred from chlorophyll to chlorophyll until eventually (after ...

The chlorophyll molecules absorb photons and funnel the energy to a reaction center chlorophyll, which becomes oxidized (loses electrons). Cyanobacteria and chloroplasts are the ...

In this type, the oxidation of complex energy storage molecules (i.e., sugars, lipids, etc.) from food is used to provide energy to produce a proton gradient, which, in turn, is used to drive the synthesis of ATP. Photophosphorylation, ...

Plants cannot use light energy directly to make sugars. Instead, the plant changes the light energy into a form it can use: chemical energy. Chemical energy is all around us. For example, cars need the chemical ...

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