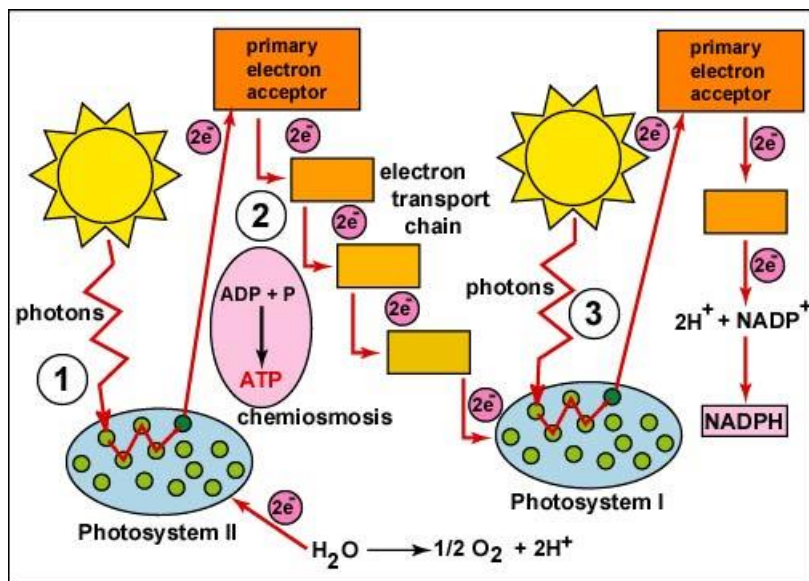


Chlorophyll A and chlorophyll B are the two main pigments in plants that absorb light. Photosystems are large groups of pigment molecules.



Photosystem II: photons of light strike photosystem II, exciting 2 electrons. These electrons move to the primary electron acceptor and electron carriers.

Primary Electron Acceptor and Electron Carriers: electrons are passed down the carriers, releasing energy to pump protons through the membrane. This is an electron transport chain.

Formation of ATP: ATP is

formed using ATP synthase and a proton gradient. The protons flow back through the membrane, down the proton gradient, and the energy released is used by ATP synthase to produce ATP. This is chemiosmosis.

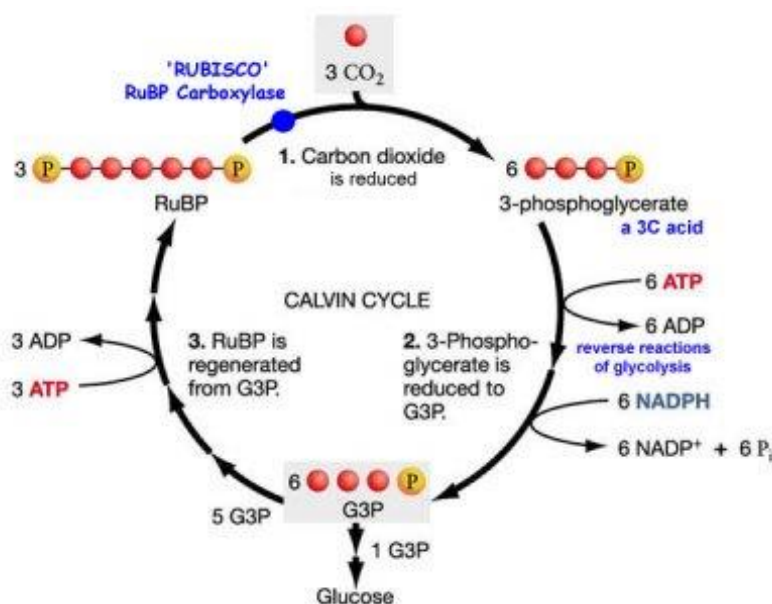
Photolysis: water splits to produce 2H^+ - which reduces NADP - oxygen, and 2 electrons which fill the gap in photosystem II.

Photosystem I: two excited electrons are passed along a series of carriers and go to reduce NADP in the stroma.

The products of the light-dependent stage are ATP and NADPH.

The Light Independent Stage

The light-independent stage occurs in the stroma. It is referred to as the Calvin cycle. Carbon, in the form of carbon dioxide, is 'fixed' and built up into sugars.



The ATP provides energy and phosphate in this stage.