

1. The sun turns heavy matter into happy, chuckling, giggling, laughing light... which flies free into empty, open space - oh so happy to be free, to be light - Can you imagine it? Can you really? Ah, but a life of only 8 minutes - so short - before the light is caught by trees, and put to work.

Trees use the energy in light to grow, by changing air and water into new forms like wood and other parts of the tree.

This is the story of light's second life as parts of a tree and how we might use trees to power our cars.

3. So what does this have to do with driving your car?

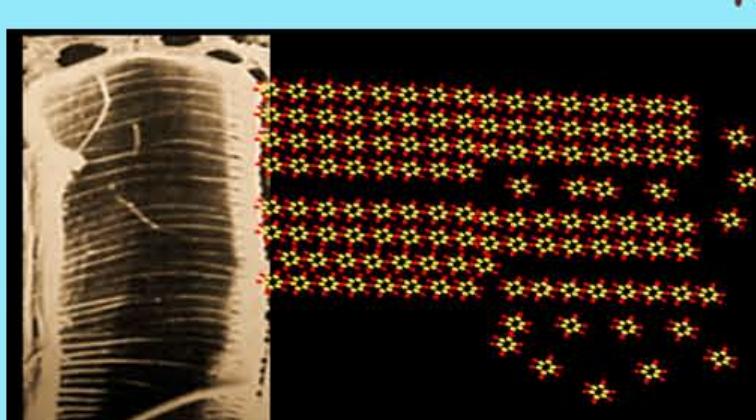


Think: How does your body get energy to run or jump or breathe? By eating, of course. Our cars get energy from eating too - but car food isn't the same as people food.

One type of car food can come from wood. This is a lot like the way horses get energy from their food.



Some living things can actually eat wood - and even more amazing - when they eat it, they turn it into something that can power a car!

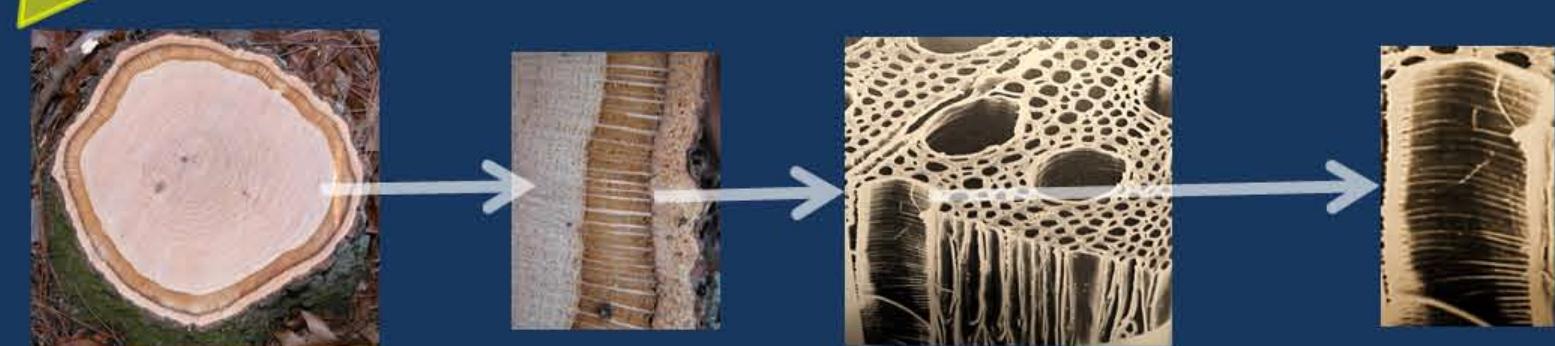


2. Cells contain tiny green bags where light is caught as it flies by.

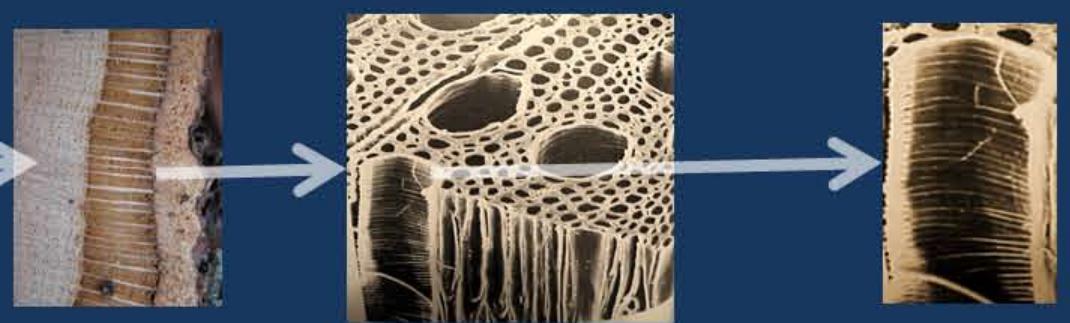
Here's the green stuff that catches sun light ...and helps to change little bits of air like this



and into blocks like this



...which trees use to make an amazing material - we know it as wood, but it comes in other forms too. If you look really close you will see it is made of tiny cells, each surrounded by a wall, a really tiny but strong wall. Made from sun light, air and water.



Powering your car with sun light



And it is packed with energy.

Start a fire tonight, see the light, feel the heat as the wood burns. Bits of sun light breaking free, laughing, returning to the stars.



But turning wood into a form that can be used by cars is not so easy. The blocks inside wood are stuck together really well, and when they are stuck together, they can not be turned into power inside cars.

So, to get car energy from wood, an important first step is to break up the groups of blocks, to pull them apart into smaller pieces.

We are trying to understand how the blocks inside wood are lined up and stuck together. If we can figure this out, we think we can come up with new ways to break them up into smaller pieces. Then we turn wood into energy to power cars... with laughing, giggling, chuckling, happy sun light.

