

## Scientists make see-through wood

19th May, 2016



Scientists have come up with a revolutionary new use for wood. They have devised a way to make it transparent. This could totally change the way many things in our lives

are used and made. See-through wood could one day replace glass and be used in windows and tables, for iPhone screens, and in a whole assortment of other building materials. The innovation has come from researchers at the University of Maryland in the USA. They experimented with different ways to extract the chemicals from wood that give it colour. Researcher Liangbing Hu said: "We were very surprised by how transparent it could go. This can really open applications that can potentially replace glass and some optical materials."

The researchers worked with a small block of linden wood. They boiled it in water, sodium hydroxide and other chemicals for about two hours. A molecule called lignin, which gives wood its colour, disappeared during the boiling process. This left behind colourless cells, which effectively made the wood transparent. The see-through wood is a lot stronger and less dangerous than glass. It is better at insulating against the cold and it is biodegradable. Research is still in its infancy and the process can currently only be done on 10cm by 10cm blocks of wood that range in thickness between paper-thin and a centimeter thick. The researchers will now focus on applying the process on a much larger scale.

Sources: *TechTimes* / *Engadget.com* / *nytimes.com*

## Writing

Transparent wood is better than glass. Discuss.

## Chat

Talk about these words from the article.

scientists / revolutionary / transparent / see-through / materials / chemicals / glass / block of wood / boiled / disappeared / cells / insulating / the cold / thickness / process

## True / False

- The article said the new use for wood was revolutionary. T / F
- The article says see-through wood could replace glass. T / F
- Researchers looked at ways to give the wood added colour. T / F
- Scientists were surprised at how transparent the wood became. T / F
- The researchers worked with large blocks of wood. T / F
- The researchers boiled the wood for around two hours. T / F
- Glass is still stronger than the transparent wood. T / F
- The transparent wood changes so it is no longer biodegradable. T / F

## Synonym Match

- |                  |                 |
|------------------|-----------------|
| 1. come up with  | a. remove       |
| 2. revolutionary | b. substitute   |
| 3. totally       | c. protecting   |
| 4. extract       | d. clear        |
| 5. replace       | e. innovative   |
| 6. block         | f. carrying out |
| 7. transparent   | g. completely   |
| 8. insulating    | h. early stages |
| 9. infancy       | i. create       |
| 10. applying     | j. chunk        |

## Discussion – Student A

- What do you think about what you read?
- What could we use transparent wood for?
- Why might transparent wood be better than glass?
- Will demand for transparent wood mean a bigger danger to forests?
- How good would unbreakable mobile phone screens be?
- How big an innovation do you think this is?
- What do we need glass for?
- What other things would you like to be transparent?

## Phrase Match

- |                                 |                      |
|---------------------------------|----------------------|
| 1. come up with a revolutionary | a. infancy           |
| 2. devised a way to make it     | b. wood              |
| 3. See-through                  | c. in water          |
| 4. a whole                      | d. transparent       |
| 5. potentially replace          | e. in thickness      |
| 6. They boiled it               | f. new use           |
| 7. better at insulating         | g. much larger scale |
| 8. Research is still in its     | h. glass             |
| 9. blocks of wood that range    | i. assortment        |
| 10. applying the process on a   | j. against the coldS |

## Discussion – Student B

- How dangerous is glass?
- When do you think we will start using transparent wood?
- How useful is wood?
- In what ways might glass be better than transparent wood?
- Would you prefer to have transparent wood or glass?
- What would a house built from transparent wood be like?
- What will the transparent wood industry look like in 50 years?
- What questions would you like to ask the researchers?

## Spelling

- devised a way to make it rsnattpenar
- a whole ssetaomrtn of other building materials
- The nvanoiio tn has come from researchers
- different ways to rctxeta the chemicals
- lntyaplt oe replace glass
- some pa itclo materials
- A ocelumel called lignin
- which eifeflycevt made the wood
- better at stgnaluiin against the cold
- it is oibdega elabdr
- research is still in its ynicnaf
- alpgpn iy the process on a much larger scale

### Answers – Synonym Match

1. i	2. e	3. g	4. a	5. b
6. j	7. d	8. c	9. h	10. f

## Role Play

### Role A – Windows

You think windows are the best things that could be made from transparent wood. Tell the others three reasons why. Tell them why their things would be no good. Also, tell the others which is the most useless of these (and why): iPhone screens, jam jars or car windscreens.

### Role B – iPhone screens

You think iPhone screens are the best things that could be made from transparent wood. Tell the others three reasons why. Tell them why their things would be no good. Also, tell the others which is the most useless of these (and why): windows, jam jars or car windscreens.

### Role C – Jam jars

You think jam jars are the best things that could be made from transparent wood. Tell the others three reasons why. Tell them why their things would be no good. Also, tell the others which is the most useless of these (and why): iPhone screens, windows or car windscreens.

### Role D – Car windscreens

You think car windscreens are the best things that could be made from transparent wood. Tell the others three reasons why. Tell them why their things would be no good. Also, tell the others which is the most useless of these (and why): iPhone screens, jam jars or windows.

## Speaking – Wood

Rank these with your partner. Put the best uses for transparent wood at the top. Change partners often and share your rankings.

- |                  |                                 |
|------------------|---------------------------------|
| • windows        | • reading glasses               |
| • tables         | • car windscreens / windshields |
| • iPhone screens | • light bulbs                   |
| • jam jars       | • marbles                       |

### Answers – True False

a	T	b	T	c	F	d	T	e	F	f	T	g	F	h	F
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Answers to Phrase Match and Spelling are in the text.