

Fusion

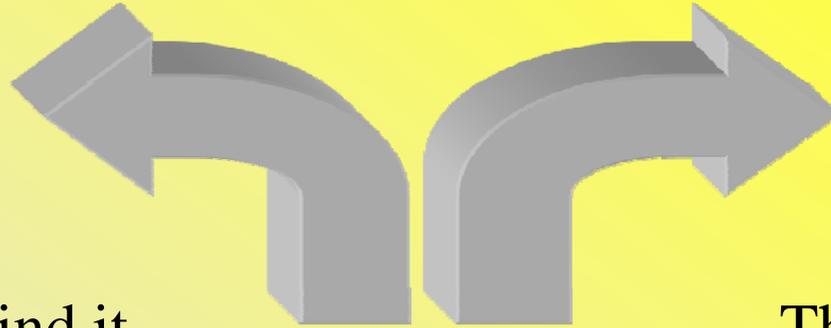
An alternate energy source

By: Welasha, Morgan, and
Jennifer

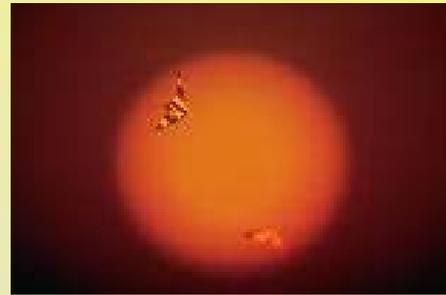


US Dept. of Energy/Photo Researchers, Inc.

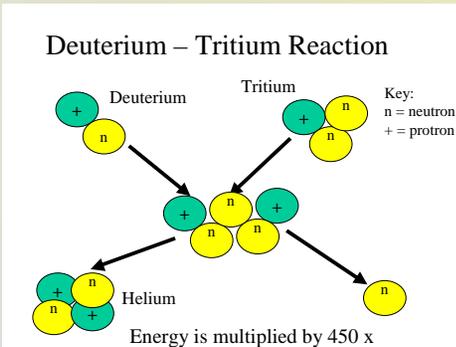
The science behind it



The scientists behind it



What is fusion?



How will fusion affect us?

Works cited

- Phillips, Carol. "Fusion Basics." Princeton Physics Plasma Laboratory. 16 March 2001. <http://www.pppl.gov/>
- Coon, Robert; Leuer, Jim; Lee Rick. "Educational Web Site: Fusion Energy" General Atomics. 11 July 2000. <http://fusioned.gat.com/>
- Carpenter, Christopher. "Fusion Basics." European Fusion Development Agreement. 14 March 2001. <http://www.jet.efda.org/>
- Wesson, John. "The Science of JET" March 2000.

Works Cited

What Is Fusion?

- Fusion is the release of energy that is a byproduct of the joining of small atomic nuclei into new elements.

Nuclear Fusion

- Fusion occurs in the core of stars.
- When atoms of hydrogen are smashed together in the sun they form helium.
- This process releases energy—it is this energy that we receive in the form of sunlight.



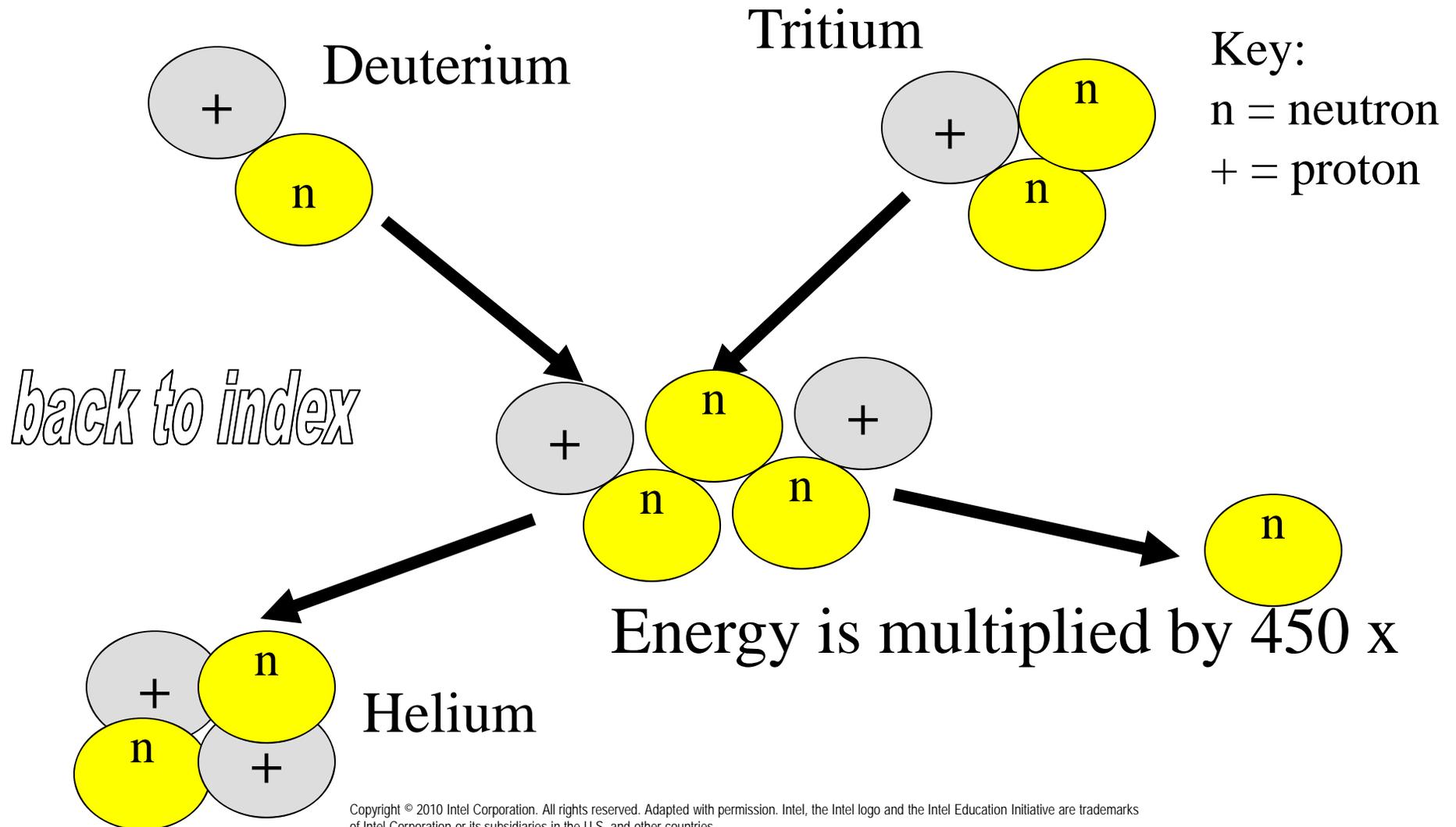
<http://antwrp.gsfc.nasa.gov/apod/ap981107.html>

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Next

Deuterium—Tritium Reaction



Plasma Physics

- Scientists are trying to re-create the fusion that happens in the sun.
- Plasma is contained in strong magnetic fields—it reaches the high temperatures found in the sun.



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Tokamak

- Plasma is contained in a Tokamak—toroidal and poloidal magnetic fields perpendicular to each other.



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People

Janet Hardabeck, director of the Fusion Institute, is designing a prototype for a fusion reactor.



Fran Willow, fusion scientist at Fresno State University, had to create her own tools to test her ideas about fusion.



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Benefits

- Large quantities of energy
- Fuel source is water, lithium, and tritium
- Waste product is helium
- No radioactive waste
- Fuel amount too small for uncontrolled reaction
- No greenhouse gases or other pollutants

Risks

- 40 pounds of helium produced for every 1,000 megawatts—effects of this on the environment are unknown
- Uncontrolled chain reaction possible?
- Just a theory until a working reactor is actually built

Works Cited

- Phillips, Carol. “Fusion Basics.” Princeton Physics Plasma Laboratory. 16 March 2001.
<http://www.pppl.gov/>
- Coon, Robert; Leuer, Jim; Lee Rick. “Educational Web Site: Fusion Energy” General Atomics. 11 July 2000.
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- Wesson, John. “The Science of JET.” European Fusion Development Agreement March 2000. Oxfordshire UK. 27 Mar 2001. www.jet.efda.org.