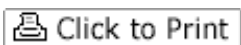




brother At your side.  Learn more **Color Laser Printers and All-In Ones that give you more. Starting around \$399** 




 Powered by 

[SAVE THIS](#) | [EMAIL THIS](#) | [Close](#)

Researcher sets saltwater on fire

- Story Highlights
- Inventor John Kanzius uses a radio-wave blaster to make saltwater catch fire
- Device could be used to generate cheap energy
- Kanzius hopes his device can be used in the fight against cancer

By Michael Stroh

(PopSci.com) -- Last winter, inventor John Kanzius was already attempting one seemingly impossible feat -- building a machine to cure cancer with radio waves -- when his device inadvertently succeeded in another: He made saltwater catch fire.

TV footage of his bizarre discovery has been burning up the blogosphere ever since, drawing crackpots and Ph.D.s alike into a raging debate. Can water burn? And if so, what good can come of it?

Some people gush over the invention's potential for desalinization or cheap energy. Briny seawater, after all, sloshes over most of the planet's surface, and harnessing its heat energy could power all sorts of things. Skeptics say Kanzius's radio generator is sucking up far more energy than it's creating, making it a carnival trick at best.

For now, Kanzius is tuning out the hubbub. The retired radio- and television- station owner says the saltwater stuff is interesting, but a cancer breakthrough is what he's really after. Diagnosed with leukemia in 2002, he began building his radio-wave blaster the next year, soon after a relapse. His lifelong fascination with radio provided further inspiration.

Radio station antennas, he knew, can turn a bystander's metal eyeglasses toasty warm. If he could seed a person's cancerous cells with nanoscopic metal particles and blast them with radio waves, perhaps he could kill off the cancer while sparing healthy tissue.

The saltwater phenomenon happened by accident when an assistant was bombarding a saline-filled test tube with radio waves and bumped the tube, causing a small flash. Curious, Kanzius struck a match. "The water lit like a propane flame," he recalls.

"People said, 'It's a crock. Look for hidden electrodes in the water,' " says Penn State University materials scientist Rustum Roy, who visited the Erie, Pennsylvania, inventor in his lab in August after seeing the feat on Google Video. A demo made Roy a believer.

"This is discovery science in the best tradition," he says. Roy thinks the sodium chloride in the water may weaken the bonds between the oxygen and hydrogen atoms, which are broken free by radio waves. It's these gas molecules that are igniting, he explains, not the liquid itself. Tests show that the reaction disappears once the radio waves stop. Roy plans to conduct more tests to get to the bottom of the mystery.

Meanwhile, researchers at MD Anderson Cancer Center in Houston and the University of Pittsburgh Medical Center have made progress using Kanzius's technology to fight cancer in animals. They published their findings last month in the journal *Cancer*.

How it works:

1. A generator emits 14-megahertz radio waves.
2. The waves bombard a solution of regular table salt and water.
3. Exactly what happens next remains a mystery, but one theory posits that the sodium chloride may weaken the bonds between

the strong oxygen and hydrogen atoms in water. Radio waves break apart the bonds and liberate flammable hydrogen gas molecules.

4. A match ignites the hydrogen, generating an intense flame.
5. The resulting heat powers a simple engine.

COPYRIGHT © 2007 POPULAR SCIENCE

Find this article at:

<http://www.cnn.com/2007/TECH/science/11/14/saltwater.fire/index.html>



[SAVE THIS](#) | [EMAIL THIS](#) | [Close](#)

Check the box to include the list of links referenced in the article.

© 2007 Cable News Network.