

2009 IGERT PBL Course

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Salt water fuel gets major university review

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“This is the biggest discovery in 100 years in water research” claims expert.

Last May, Channel 3 News took you inside the no-frills machine shop in outskirts of Erie, Pennsylvania where inventor, John Kanzius along with Jim and Charlie Rutkowski were burning water.

We watched as they poured Morton's salt into a container, mixed it with water and then exposed the fluid to the Kanzius radio frequency device. An intense flame erupted over the test tube.

"In this case we weren't looking for energy," said John Kanzius. "We were looking for something that might do desalinization. And the more we tried desalinization, the more heat we produced until we got fire."

Kanzius had originally designed his RF machine to kill cancer cells by heating up high tech nanoparticles.

Doctor Steven Curley, M.D. is using the Kanzius RF device for research at the MD Anderson Cancer Center in Houston, Texas.

But back in the lab in Erie, a whole new application suddenly developed. Could salt water become the ultimate green fuel source? The possibility was deeply intriguing for Kanzius and his team.

"To see it burn actually gives me chills", said Kanzius, "because could this be an alternative fuel for a world that's using way to much fossil fuels."

For months, Channel 3 reporter, Mike O'Mara has been getting emails from around the world claiming there must be some kind of trick involved. Many thought the flame erupting over the test tube was a hoax.

Professor Emeritus, Rustum Roy, at the Penn State University Materials Lab is a leading expert on the science of water. He was impressed by the discovery but wanted to see it for himself.

On September 6th, lab assistants wheeled the Kanzius RF invention down the hallways at PSU into a large laboratory on the first floor.

The Material Science faculty exposed more than 50 different water combinations to the radio frequency to see the reaction.

"This is the biggest discovery in 100 years in water research" exclaimed Professor Roy.

Scientists at Penn State University believe the frequency used in the Kanzius machine is releasing atomic hydrogen molecules from the salt water by weakening the bonds holding the sodium chloride, oxygen and hydrogen together. That's why the flame is so incredibly hot.

PSU research associate, Tania Slawewski said, "I think this is an excellent breakthrough. The steam engine wasn't invented because thermodynamics existed. The steam engine was invented and then thermodynamics came along. We've got lots more to discover about this invention, too."

However, many engineering experts aren't as impressed. Energy experts like University of Akron Professor Emeritus, Rudy Scavuzzo, Ph.D, say the burning of salt water is nothing more than a new twist on a high school science experiment.

Scavuzzo told Channel 3's Mike O'Mara that the Kanzius invention requires too much energy to be worth celebrating.

"There is no breakthrough", said Professor Scavuzzo, "because there are more efficient ways of breaking water down to hydrogen and oxygen."

Scavuzzo's son, Steven, a technical consultant for Babcock & Wilcox, said that salt water is not a fuel.

"You can make steam or you can break it down," said Scavuzzo. "One way or another you have to add energy and one way or another, what's going to come out is less than what you put in."

However, at PSU, Professor Roy wants the critics to reserve judgment until more research is done with the device.

"Certainly it needs investigation and certainly we ought to look at the question of how efficient it is", said Roy. "Because that will determine how much John Kanzius shakes up the world. He has shaken up the scientific world already. But this will determine how much he shakes it up."

Pointing at the RF machine, Roy added, "That's a tremendous advance in a new empirical discovery."

Meanwhile, John Kanzius continues his work. He wants to remind everyone that the salt water technology is still in its infancy.

"I'm not a Thomas Edison or a Jonas Salk", said Kanzius. "I don't propose to be one. I just want to be remembered for being a guy who tried."