

Tesla Turbine (again)

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- *From:* your dog <bhauth@xxxxxxxxxx>
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Here is a description of the tesla turbine.
http://en.wikipedia.org/wiki/Tesla_turbine

Here is a video I found.
<http://www.youtube.com/watch?v=ordrp4KXEKO>

I consistently hear about the Tesla Turbine as being "crackpot."

I have the greatest respect for Tesla and his work, and it makes me sad to find his name associated with crackpottery. Some of his later work makes that understandable, but I feel it should be considered in the context of the state of science when he did it. Lord Kelvin was another great scientist, and he made some quite wrong predictions that people make fun of him for, and I think that's unfair too.

I want to know why it's a crackpot idea. I don't want to hear from pro-Tesla people. I want to hear why it's impractical.

Problems I've heard:

differential expansion from droplets:
I don't see how this would be a serious problem.

thermal expansion warps the disks:
Seems to be a solvable material choice/arrangement problem.

pressure/speed differences suck or blow the disks into each other:
Seems to be a solvable inlet/outlet design problem.

efficiency will be low at moderate power levels as fluid/disk speeds diverge:
This seems to be a function of fluid used, disk spacing, rpm, and diameter. My napkin says that the Tesla Turbine ends up being substantially more efficient and cheaper than "conventional" impulse and pressure turbines for a number of smaller (that is, other than the "major" turbine applications like steam/water power generation and gas turbine engines) applications that turbines are used for now.

So what am I missing?

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