

Re: High strength fibers for high pressure tubes.

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- *From:* Mitchell Jones <[mjones@xxxxxxxxxxxxxxxx](mailto:mjones@xxxxxxxxxxxxxxxx)>
  - *Date:* 29 Apr 2005 02:33:50 EDT
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In article <Xns9646861EC47E2WQAHBGMXSZHVspammote@xxxxxxxxxxxxxxxx>, bz <[bz+sp@xxxxxxxxxxxxxxxx](mailto:bz+sp@xxxxxxxxxxxxxxxx)> wrote:

> Mitchell Jones <[mjones@xxxxxxxxxxxxxxxx](mailto:mjones@xxxxxxxxxxxxxxxx)> wrote in  
> [news:mjones-72AA33.12394628042005@xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx](mailto:news:mjones-72AA33.12394628042005@xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx):  
>  
>> In article <Xns964641AC76568WQAHBGMXSZHVspammote@xxxxxxxxxxxxxxxx>,   
>> bz <[bz+sp@xxxxxxxxxxxxxxxx](mailto:bz+sp@xxxxxxxxxxxxxxxx)> wrote:  
>>  
>> [snip]  
>>  
> ....  
>> \*\*\*{In a market economy, the measure of when that point has been reached  
>> is the availability of profit. If more energy must be expended to  
>> extract, process, and transport fuel to the end user than is available  
>> when the fuel is burned, the deposits will be submarginal, and will not  
>> be counted as reserves. As noted previously, however, the advancement of  
>> technology constantly lowers the real costs of extraction, processing,  
>> and transportation, save those inflicted by government, and the result  
>> is that it is never possible to argue persuasively that \*any\* deposits  
>> that are presently submarginal will not become reserves—extractable at  
>> a profit—in the future. To make such a judgment is an instance of the  
>> fallacy of static thinking, of assuming that future technology will be  
>> no better than present technology, hence that future real costs will be  
>> no lower than present real costs. Such thinking has caused those who  
>> have predicted an imminent end to the age of oil to be uniformly wrong,  
>> over and over and over again, for more than 100 years. Sure, a day will  
>> come when the extraction of oil on Earth will be over, but that day will  
>> arrive at a moment no one can anticipate today, for reasons that will be  
>> utterly inexplicable to all of us. And it could be 75,000, or 100,000,  
>> or 150,000 years in the future. There is no evidence now that such a day  
>> is going to arrive in the lifetime of anyone living, or in the lifetimes  
>> of the grandchildren of anyone now living, for that matter. Practically  
>> speaking, as I have said repeatedly, the politicians are the only thing  
>> standing between the engineers and the oil. Result: if you don't like  
>> the sticker shock the next time you fill up your tank, direct your anger  
>> at its appropriate target: at the labyrinthine regulations, hidden  
>> taxes, and other impediments which politicians in America and elsewhere  
>> in the world, have set up as an obstacle course, to prevent the

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>> engineers from getting at the oil. ---MJ}\*\*\*

>

> When you must expend 100 Joules of energy to extract oil that will yield  
> less than 100 Joules of energy, the politics doesn't matter, the economics  
> doesn't matter. You are at the point where you are better off to use the  
> 100 Joules directly and not convert it into crude petroleum.

\*\*\*{The only fixed and irreducible energy costs are those imposed by the necessity to lift the oil from its point of origin to its point of use.

A typical barrel of oil, back in the old days, had a capacity of 55 gallons, and contained about 44 gallons of crude, with the excess space being left to allow for expansion. A run-of-the-mill barrel of Texas crude contains 19,460 Btu's/lb and weighs 7.286 lbs/gal. Therefore its total weight is  $(44)(7.286) = 320.6$  lbs, and its total energy content is  $(320.6)(19,460) = 6.25 \times 10^6$  Btu's.

The continental crust of the Earth is typically about 30 km thick (see <http://quake.wr.usgs.gov/research/structure/CrustalStructure/>), which is 98,425 ft. Therefore in an extreme case scenario the energy investment to get a barrel of oil to the surface would be  $(320.6)(98425) = 3.16 \times 10^7$  ft-lbs. Since each Btu contains 777.9 ft-lbs of energy, it follows that the barrel of oil contains  $(777.9)(6.25 \times 10^6) = 4.86 \times 10^9$  ft-lbs of energy. That is in excess of two orders of magnitude more energy than its fixed and irreducible costs of extraction, even under these worst case assumptions.

I would add that those are truly worst case assumptions, because as soon as a drill bit came anywhere near a pool of oil at that depth, the enormous pressure would spit out all of the casing, the bit, the 30 km of drill stem, and blow the derrick to hell, in a gusher the likes of which the world had never seen! You wouldn't need to invest energy pumping it out of the ground. What you would need to do would be invest energy running like hell, as soon as you heard the sounds of the casing and drill stem blowing back up the hole!

To sum up, when you actually run the numbers, when you actually develop a clear grasp of what oil \*is\*, all worries about getting anywhere near ultimate breakeven stand revealed as pure fantasy. The reality is that sub-marginal reserves are not sub-marginal because there is less energy in the oil than must be invested to lift it out of the ground, but because, AT THE PRESENT TIME, the technology that allows us to get to it and separate it from its impurities is too costly.

Bottom line: the politicians are the only thing standing between the engineers and the oil.

---Mitchell Jones}\*\*\*

> What about waste heat, you might say. What about heat left over after you  
> burn fuel to make electricity?

>

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- > When you convert heat into useful energy, the amount you can convert
- > depends on your starting and ending temperatures. When you try to use the
- > 'waste heat' you decrease the power out of the generator. You can use SOME
- > of the waste heat to do useful things, like recover oil from oil shale, but
- > I was already considering that in my original statement.
- >
- > Assume we are already making the best possible use of all of our energy
- > resources, you eventually (and that day is closer than you think) reach the
- > point where it takes more energy to extract energy than you have available.
- > Tech improvements will not solve this problem.

\*\*\*{That "problem" does not exist. See above. ---MJ}\*\*\*

- > Again, better to move our industries into space.

\*\*\*{\*All\* of our industries? That would require the use of massive force, because it would make no economic sense at all, with the consumers and raw materials mostly on Earth, to move the industries into space. And, of course, to persuade Earth's population to leave Earth and stop using raw materials from Earth would require even more massive use of force. But why? What goal are we pursuing, that justifies killing so many people? ---MJ}\*\*\*

- > There, if you want more
- > energy, you use a bigger mirror.

\*\*\*{A mirror? At high Earth orbit you would need, at minimum, a square meter of mirror for every 1360 Watts. Let's see: American industrial power consumption at the end of 2004 was running at about 2.918 quads/month (see <http://www.economagic.com/em-cgi/data.exe/doeme/teicbus>), which is  $1.126 \times 10^9$  Btu/sec. At 1055 J/Btu, that's  $1.19 \times 10^{12}$  W. Therefore we would need a mirror in high Earth orbit that had an area of  $1.19 \times 10^{12} / 1360 = 8.733 \times 10^8$  m<sup>2</sup>, or 873 km<sup>2</sup>, assuming 100% collection efficiency. We would somehow have to keep it oriented toward the sun, and would need to focus its energy on some sort of enormous power plant—e.g., a gigantic mercury boiler driving an equally gigantic mercury vapor turbine, turning an equally gigantic generator—and would then need some sort of equally enormous and problematic distribution system to get the power to the various industrial works as they whizzed about the Earth. Or, alternatively, we would need for each orbital factory to have its own, smaller mirror, its own smaller power plant, etc., together adding up to the same thing. And we would need to somehow get raw materials up to the factories, and get the finished goods to retail outlets and thence to end users who, presumably, would not be on Earth. But why would we do all of this? To turn the Earth into a park? Are we back to that again? For what possible reason would we want to turn the Earth into a park? ---MJ}\*\*\*

- >>> Past this point, the recovery is only worth while if one wants the
- >>> reduced carbon for some other purpose, like making plastics, etc. BTW,

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>>> that is what we should be doing with it now, not burning it.  
>>  
>> \*\*\*{I most emphatically disagree. Forming it into plastics is OK, but we  
>> also need to burn as much hydrocarbon fuel as we can, because we live on  
>> a planet that is deficient in CO2. If we don't burn it, the greenbelt  
>> will not have the carbon it needs to expand as we approach the midpoint  
>> of the present interglacial, and in that case the long term cyclical  
>> warming of the Earth, which is due to the Milankovitch and related  
>> astronomical cycles rather than to human induced "global warming," will  
>> raise sea levels roughly another 5 meters, flooding most of the great  
>> cities of the world. Man didn't cause the rising sea levels that  
>> accompanied the previous interglacial, and he won't be the cause of the  
>> rise that will accompany the present one, either. He can, however,  
>> prevent the sea level from rising, if he burns enough hydrocarbon fuel.  
>  
> NO! man would increase the sea level rise by speeding up the melting of  
> glaciers and the southern ice cap.

\*\*\*{The CO2 is rapidly taken up by plant growth. The plant growth is mostly water, and, by eliminating or reducing standing thermals, brings about increased rainfall in the area where it takes place, causing the water table to rise. Result: icemelt that would otherwise have contributed to rising sea levels contributes to increased plant biomass and rising water tables instead. --MJ}\*\*\*

> It is already happening.  
>  
> Where do you think the sea level rise we are seeing is coming from?

\*\*\*{Very little sea level rise is in fact being seen. Typical estimates are 10 – 20 cm over the past 100 years, and even those estimates are highly problematic and hotly disputed. What is being seen, instead, is melting of glaciers and of pack ice at both poles. The lack of corresponding, unarguable rises in sea levels is seemingly anomalous, until one recognizes that, thank's to the burning of hydrocarbon fuels by man, most of the icemelt is going into plant biomass and rising continental water tables, rather than into rising sea levels. --MJ}\*\*\*

>> That's why the Kyoto accord and all the other blather about "global  
>> warming" is totally wrong, typically ass-backwards, self-defeating,  
>> environmentalist rubbish, like the murderous ban of DDT  
>  
> DDT has stopped being useful in areas where they continued to use it.

\*\*\*{Worldwide, a child dies of malaria roughly every 10 seconds, and malaria can be easily reduced by from 90 to 95% by merely spraying DDT in the areas of the afflicted countries where most people live and work. And those are serious, hard numbers. There are  $(3600)(24)(365.25) = 31,557,600$  seconds in a year, and typical estimates of worldwide malaria deaths run at about a tenth of that, and almost all of them are children. That means the ban on DDT kills about 3 million children a

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year, and has been doing so since 1972, for a cumulative total, very conservatively estimated, in excess of 50 million. Should every environmentalist be executed who, after being apprised of these facts and allowed time to verify same, continues to support the DDT ban? You decide. --MJ}\*\*\*

> Insects develop immunity and THAT kills more innocents.

\*\*\*{Insects adapt to threats which appear in their environments, but adaptation does not always involve developing immunity. Flies, for example, have had hundreds of millions of years to develop immunity to being eaten by birds, and have failed miserably to do so. They have, however, adapted to the threat--by becoming adept at dodging, by developing camouflage coloration that renders them difficult to see, etc. And, likewise, mosquitos have adapted to the threat posed by DDT--by fleeing as fast as they can from any area where even the slightest whiff of DDT is in the air. And, since DDT is a perfect pesticide, meaning it reacts only with insects, it remains in the environment long after being sprayed. That means if you spray a village with DDT, the mosquitos that are there at the time will be killed, and any that come into the vicinity later will avoid that village like the plague. Result: the incidence of malaria in the area will drop, like clockwork, by from 90 to 95%. --MJ}\*\*\*

>> , which kills an

>> innocent child somewhere on Earth every 10 seconds, and virtually every

>> other bovine, drooling stupidity they have perpetrated or attempted to

>> perpetrate over the years. --MJ}\*\*\*

>

> We will have to agree to disagree on many things.

\*\*\*{Yup. For example, Hitler murdered 6 million Jews, and environmentalists have murdered more than 50 million children. I say environmentalists are worse than Hitler, and you, apparently, disagree. --MJ}\*\*\*

> Have the best of all possible days. It is a beautiful day to be alive,

> isn't it? Every day.

\*\*\*{Yup, environmentalists murder 8,640 children every day. What is there not to like about such a day? --MJ}\*\*\*

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• *Follow-Ups:*

◆ *Re: High strength fibers for high pressure tubes.*

◇ *From: bz*

• *References:*

◆ *Re: High strength fibers for high pressure tubes.*

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