MITOCW | MIT3 091F18 lec12 wtm 300k But this does get me to the why this matters, which has to do with how you cook pasta. And, of course, since we're talking about O2, when I have finished cooking pasta, what do I do? I pour it. There it is. It's like it's sophisticated. I pour it through a colander. That's a membrane. That's a membrane. You did use a membrane. You did a filter. Now, but I could also have done that separation, that same separation, I could have left it on the stove. I could have.

And it would have boiled out all the water and left me still with the pasta separated from the water.

I've accomplished the same exact thing.

I have separated the pasta from the water.

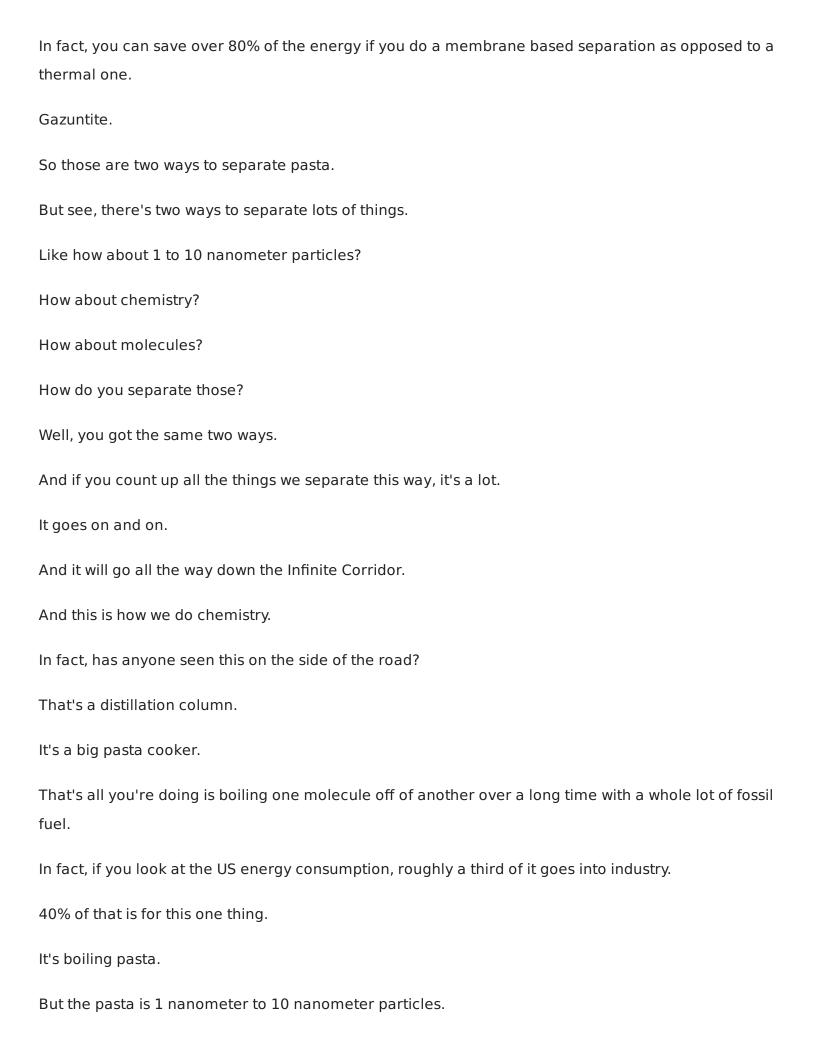
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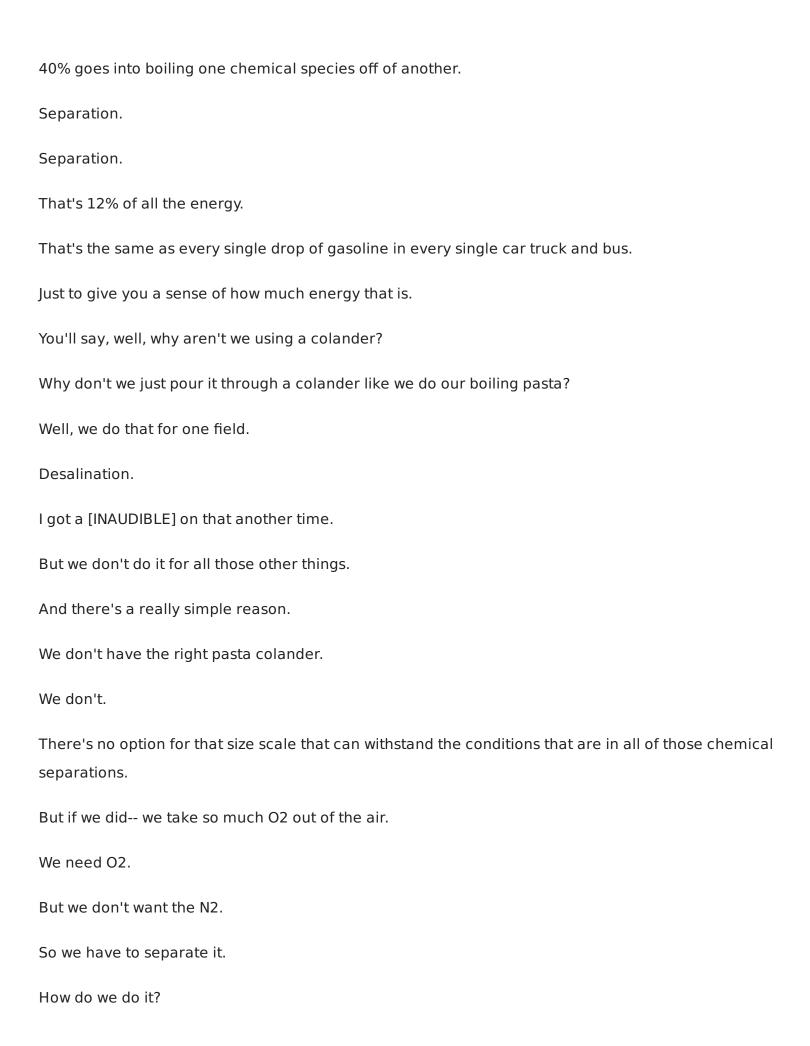
Pasta may not taste as good.

[LAUGHTER]

But you've done it.

But see, the thing is that if you separate things this way versus that way, you can just feel how much less energy it's going to take.





We go to very, very cold temperatures, which is the same as boiling.

Right.

But you're still spending all this fossil fuel to lower the temperature.

That's how much O2 we generate each year.

And this is how much energy it takes.

It's like 1/2 a percent of all US energy, just to get-- But what if you could use something like O2's paramagnetism?

What if you could use something about the chemistry or O2 to do this separation more efficiently, lower energy, or maybe make a new colander that does that?

And if any of you have ideas, come talk to me.

This is a problem I care a lot about.