Vanadium Dioxide

by Miles Mathis

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It is now being reported that Vanadium Dioxide at 67 ºC conducts without transferring the expected heat. You can see how that would be useful, but it would be even more useful if we understood how and why it was doing that. This contradicts several mainstream physics and chemistry laws (see the Wiedemann-Franz law, for instance), which state that conduction of electricity and heat are proportional. Intuitively, that makes sense, and even with my corrections to mainstream theory, it would still seem to hold, since I have stated that electricity is driven by charge, like a boat is driven by a stream. So how can electricity go where charge is not also going? Assuming that charge is heat—a proposition that Maxwell made and that I confirm—and assuming that electricity is ions being driven by photons, how can ions go where photons aren't going?

Well, without my mechanical explanations of charge as real photons, this problem would be insoluble. But given my mechanics and visualizations, it becomes pretty easy to figure this out. This is because I have stressed that charge and electricity aren't the same. Given that they aren't the same, they should be separable in extraordinary circumstances, and someone should have predicted this. I just wish I had.

Since I have shown that charge is real photons being channeled in specific paths through and between nuclei, all we have to do is look at the the paths made by Vanadium Dioxide. Since the molecule is normally an insulator, we know the paths are very crooked. I have shown that insulators create long paths that charge must navigate through a substance, delaying or completely redirecting charge. In other words, the charge paths are not linear. They don't pass straight through the substance. They take a lot of sharp right turns. And in fact the mainstream (mostly) knows this. VO2 is diagrammed as monoclinic below 67º and as tetragonal above it. The clue there is that the angles are sharper with the tetragonal structure. So as charge is channeled through this architecture, it has to take sharper turns. And though the photons can't be going any faster as we raise the heat, the ions can. That is what heat is (that and denser charge). So we have ions—like electrons—going faster and taking sharper turns. Therefore, what must be happening is that at the boundary of the substance, the smaller photons are able to make the turn, but the larger electrons aren't. The electrons are thrown clear, carrying a fraction of the total energy with them. This energy is then what we are calling conducted electricity.

Think of it like a boat travelling on a fast river. The river then goes over a falls. Does the boat stick to the surface of the river as it goes over? In most cases, no. The boat has a different momentum than the water, so it gets launched farther out. It doesn't make the turn in the same way the water does. Well, in our current problem, the charge photons being channeled through the material are like the water, and the electrons are like the boat. They have a lot more momentum due to their mass. So they get thrown out wide. Inside the material, they are constrained by neighboring nuclei and other charge paths, but at the boundary of the material they aren't. So they can be thrown clear.

This tells us that any other material that created these sharp turns for energetic electrons might create a similar effect. Although VO2 was the first discovered, the odds are it is not the only or best material for this. Now that we know the cause, we can probably manufacture a molecule from other elements that will give an even greater effect. If someone wants to hire me to do that, I will get right on it.