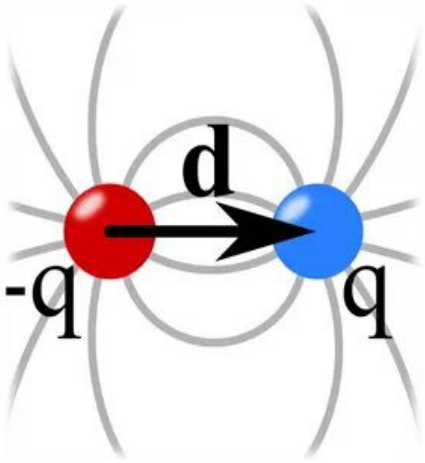
Piezoelectricity and Electric Dipole Moments



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Piezoelectricity is increased current caused by pressure. If you squash a crystal, for instance, you can create a current. What causes this? Don't ask the mainstream, because as usual they don't know. They have to make something up and it is awful to witness.

At first, the explanation is fine, since historically they linked it to pyroelectricity, which is current increased by heat. Pierre Curie was involved in this, with Marie also allegedly there. This makes sense so far, because due to the old combined gas laws that long predated this, temperature is proportional to pressure. You add pressure, which adds density, which adds heat, which increases current. However, those are laws, not mechanical explanations, so we still have to ask WHY the gas laws work, and why crystals would generally follow gas laws. At that point it all goes off the track, and we can see it happen at Wikipedia on the page for piezoelectric effect, in the section "mechanism":

The nature of the piezoelectric effect is closely related to the occurrence of electric dipole moments in solids. The dipole density or polarization (dimensionality [C·m/m3]) may easily be calculated for crystals by summing up the dipole moments per volume of the crystallographic unit cell.[19] As every dipole is a vector, the dipole density *P* is a vector field.

Summing something that doesn't exist, as usual. What do I mean? Well, let's go to the page for electric dipole moment:

The electric dipole moment is a measure of the separation of positive and negative electrical charges within a system: that is, a measure of the system's overall polarity. The SI unit for electric dipole moment is the coulomb-metre (C⋅m). The debye (D) is a CGS unit of measurement used in atomic physics and chemistry.

Theoretically, an electric dipole is defined by the first-order term of the multipole expansion; it consists of two equal and opposite charges that are infinitesimally close together, although real dipoles have separated charge.[notes 1]

OK, so where do those dipoles exist? Answer? They don't. This is just bad theory, sort of like the later Fermi gas theory, made up of made-up particles. A real crystal doesn't contain even one such dipole, infinitesimally close or separated. The only thing it has that is anything like that—even according to mainstream theory—are protons and electrons, but protons and electrons do not pair up in dipoles like that in any nucleus, not even Hydrogen. Charge at the nuclear level simply doesn't work like that, and they know it. Charge isn't summed from fake dipoles, it is photons *channeled* by the nucleus. But for some reason they continue to sell you this old electric dipole moment garbage from the 1900s, despite the fact it was dreamed up before the discovery of the electron, much less the discovery of the nucleus.

Anytime you see the word "moment", you should know you are back in the 19th century, which might as well be the time of Aristotle as far as nuclear theory goes. This electric dipole moment stuff is just a half step up from orreries and trepanation. There is no such thing as a "moment", as I showed you in my explosion of the moment of inertia. All "moments" are just fudges, used to paper over bad places in these old equations that don't work. So they make up some "moment" to fill it, and then hammer it in the heads of students generation after generation, who never question it.

Now that I have diagrammed the nucleus, showing you it is a charge engine, recycling a gas of real charge photons in defined channels, all this electric dipole moment theory is gone. Charge and current aren't caused by summing dreamed-up dipoles, they are caused by charge channeling through and between nuclei. Current is long lines of charge channeling by aligned nuclei. And that is the short answer why this piezoelectricity follows the old gas laws: charge IS a gas, and pressure forces that gas into tighter streams, which streams ARE current.

This means the polarity of a substance has nothing to do with summing its dipoles, it has to do with its nuclear structure, which is determined by the elements involved. And, as I have shown, polarity isn't created at the electron level, or the level of these manufactured pairs, it is created at the level of the nucleus, which, like the Earth, pulls in charge at both poles due to its semi-spherical structure, with more angular momentum on the equator. Because of this, we actually have both charge and anticharge, photons and antiphotons, and THAT is what creates the appearance of polarity.

But again, that isn't created by a photon and antiphoton pair creating a static dipole that can be summed. Photons and antiphotons are never static of course, so they don't pair up, and if they did pair up momentarily in passing, they would spin strip one another, leading to a loss of energy, not a creation of it. Yes, they can spin one another up when passing in opposite directions on the nuclear pole, creating magnetism, as I show here, but that is nothing like the creation of this dipole that can be summed.

This is also of interest:

Dipoles near each other tend to be aligned in regions called Weiss domains. The domains are usually randomly oriented, but can be aligned using the process of *poling* (not the same as magnetic poling), a process by which a strong electric field is applied across the material, usually at elevated temperatures.

That's again from the mainstream. But Weiss domains, like dipoles and dipole moments, are made up from nothing. They don't really exist. Because the mainstream doesn't know how this works, they just manufacture these entities and maths and terms, in a never-ending pseudo-mechanics. These areas of alignment do exist, but they aren't caused by the alignment of dipoles. They are caused by the alignment of nuclei or nuclear streams of charge. That is why poling often works: the strong applied E field is also, at root, a directionalized gas of charge photons, and that wind acts to align the nuclear streams by main force. When you are applying any EM field, what you are really doing is sending loads of new photons in from one direction, and the result is exactly what you would expect from that. It is precisely the same thing you would get at the macrolevel. The fact that they don't seem to know that, at this late a date in the history of physics, is astonishing to me.