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Explaining the So-Called 'Casimir Force' with Nonlinear Physics

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Editorial- In the article "A New Twist of the Quantum Vacuum" published in the October issue of Physics Today, 2019 (p. 74), the author Jeremy Munday [1] share the experiment he did with his research group – the results was published in 2018. They used a solid birefringent crystal of calcite, which has anisotropic optical properties. They deposited on it optically isotropic layer of aluminum oxide with thickness d = 30 nanometers or less. Then they deposited a layer of liquid crystal on top of the aluminum oxide.

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I. Editorial

In the article "A New Twist of the Quantum Vacuum" published in the October issue of Physics Today, 2019 (p. 74), the author Jeremy Munday [1] share the experiment he did with his research group – the results was published in 2018. They used a solid birefringent crystal of calcite, which has anisotropic optical properties. They deposited on it optically isotropic layer of aluminum oxide with thickness d = 30 nanometers or less. Then they deposited a layer of liquid crystal on top of the aluminum oxide.

They observed reorientation of the layers of liquid crystal. The lowest layers of liquid crystal reoriented and adopted the structure of the calcite basis with anisotropic optical properties. They also observed: 1/ fading of the influence of the calcite basis on the liquid crystal as the square of the distance d between the calcite basis and the liquid crystal; 2/ proportional dependence on sin 2θ (where θ is the angle between the orientation induced by the anisotropic optical properties of the calcite basis and the original orientation of the liquid crystal.

Since Parsegian and Weise (and independently by Yuri Barash) theoretically predicted such dependences and called them Casimir force, Jeremy Munday concluded that he is measuring the effect of the Casimir force. However, I have an alternative explanation based on my article [2] published in 2019: "How Was the Material World Created? - Origin of Its NEMF".

In my model of the Universe, everything material comes to this world as a material body and nonlinear electromagnetic field (NEMF) [2]. If so, Jeremy Munday measures the influence of the NEMF of the optically anisotropic crystal of calcite on the liquid crystal. Since the field is nonlinear, it can pass through the barrier of optically isotropic aluminum oxide without distortions.

The influence of the anisotropic crystal calcite on the liquid crystal decreases with the square of the distance because the NEMF of the calcite is an electromagnetic influence (EMF), which decreases with the square of the distance. The fact that everything is a material body and NEMF solves automatically: 1/ the dualism particle-wave (yes, every material particle is a wave at the same time); 2/ the Heidelberg uncertainty principle, which is influence of the NEMF of the measuring instrument and the NEMF of the measuring person on the NEMF on the measured elementary particle - this makes the coordinates and impulse of the particle not defined at the same time; and 3/ explains the probability outcome of every quantum experiment.

As shown in my article [3], distress (negative stress) changes the NEMF and pH of the intracellular space, which makes the communications between the cells impossible. The disconnected cells dedifferentiate into tissue-nonspecific cells, just as they do at cut wounds. To heal the wound fast, the cells dedifferentiate, which allows them to multiply fast and creep into the wound. However, while in the case of wound the current of regrowth (which stars at the cut) guides the cells where to go and helps them become again tissue specific, in the case of cancer the disconnected cells multiply senselessly out of control taking all the nutrients and starving the body to death.

As shown in my article [3], changes in the frequencies of the intracellular NEMF can be used to predict the oncoming cancer. The Russian scientists found changes in the spectra of the intracellular liquid that precede the cancer onset, but they don't have the explanation why. I offer explanation of their finding - they are measuring the changes in the frequencies of the intracellular NEMF. These changes lead to inability of the cells to communicate, which bring the cancer. We also offer a solution – finding a way to restore the normal frequencies of the NEMF will eliminate the cancer. This means physics not chemistry will solve the cancer problem [4].

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