The source of a heat energy

We have a piece of a matter (gas, liquid or solid). This matter has a temperature. It is the main symptom of a heat energy. The other symptoms are the heat capacity, the mass and other. The other symptom could be the binding energywhich is hidden among molecules and atoms. Let´s go to the model. Imagine balls with springs among them.

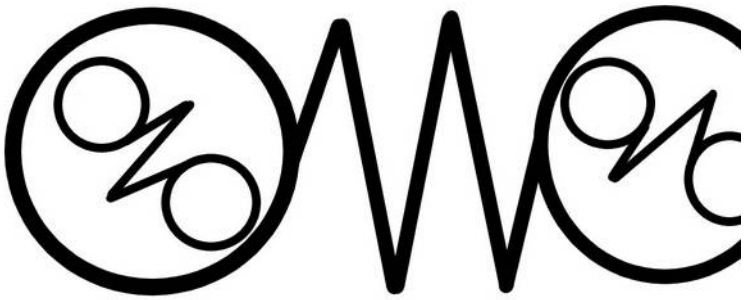

Fig.1 – the model of special balls with springs

Such balls are moving in a closed space. Rapidly or smoothly – never mind. These balls are put together from smaller balls with springs among them either. And so on – see Russian dolls. This structure represents the binding energy. For best imagination – pretend a lot of guns with open triggers randomly moving through a space. These guns are prepared to shot. We must push a trigger to fire from such gun. To push the trigger we need some portion of energy. Of course the energy from the fire is much bigger then the „push" energy. The fire energy represents the binding energy. These guns are moving smoothly in a closed space. There are only collisions of guns among each other and nothing else. If the speed of colllisions of guns will increase then increase the probability to push the trigger. See the next figure.

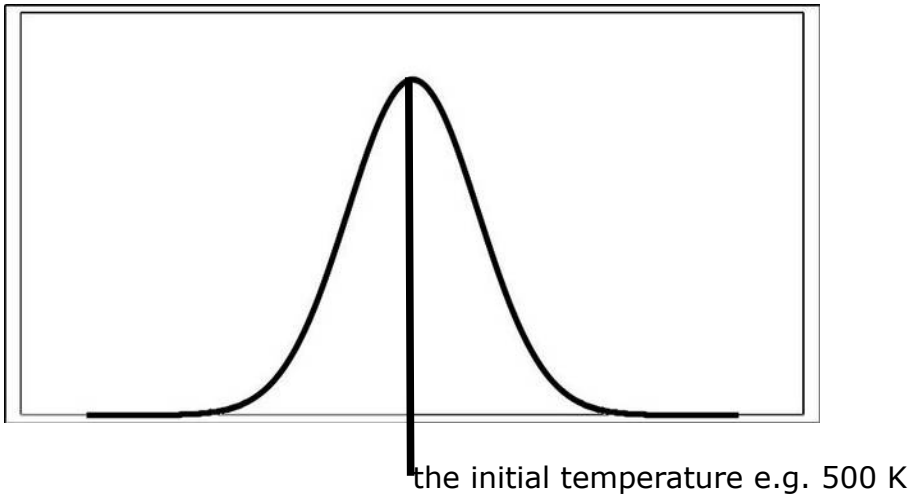

Fig.2 – the Gauss´ curve is the initial temperature

If we are close to the initial temeperature we can expect a chain reaction. I say to expect. There is a probability not the certainty. Sometimes the chain reaction begin at a small temeprature, sometimes at a higher temperature. It depends on the circumstances of a randomly motion.

When the area of initial temperature is reached then the trigger is pushed and the gun fired. The energy of the fire makes to push triggers a lot of guns around and so on – see the chain reaction. The result is the increasing of speed of moving guns. They begin to move wildly. Return to our model of our balls. When the spring were relaxed then we could say their „temperature" increased so big. Where does the energy come from? We know - from the binding energy of springs of the balls.

It is possible to say – we distinguish two sources of the heat energy

the internal energy – such kind is hidden in binding energy of matter

the external energy – from other bodies with greater temperature, the kinds how to supply energy are a flowing, radiation or conduction.