ORIGINAL ARTICLE   **OPEN ACCESS**

Disclosure Of Tactile Event Under The Laws Of Molecular Physics

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ABSTRACT
In research, physical essence of tactiling unit is disclosed in accordance with the laws of physics. Physical essence of tactiling unit is determined which characterizes tactiling process and analytic figure is achieved to calculate it. It is revealed that, if tactiling unit is T=1- it is full tactiling and if it is T<1 surfaces tactiling calls as incomplete tactiling. Parameter which separates full and incomplete tactiling from each other is distance coefficient. At the same time, physical method is developed to separate the tactiling from friction process.
Keywords: *tactiling, friction, influence, tactiling unit, cleanness class, distance coefficient, atom, molecule, gravity between surfaces, contact.*

INTRODUCTION
We have already given widely information about the essence of tactile process in science, tactile point and gravitational force between tactile surfaces[2]. Detailed explanation of tactile process disclosure what based on the laws of molecular physics proves the process straightforwardness and scientific accuracy. Contact surfaces require the investigation of tactile event based on the molecular theory to study the friction on the basis of mechanism appropriate to surface characteristic in high class purity of tribod nodes
In research work, tactile and physical processes created by tactile are disclosure under the low of molecular physics. The aim of research work is to increase the workability increasing the resistance to wearness by identifying the creation and continuation reasons of it in the tactile point of equipment on the basis of differentiating tactiling and friction processes from each other and
If there is tactile it means there also full or incomplete tactiling is available. But, there is no scientific solution is available on the physical essence of full or incomplete tactiling up-to-day. Therefore, the physical essence of tactile point has been investigated in the research work. Scientific disclosure has been given on the essence of full and incomplete tactile point.

MATERIAL AND METHODS
While touching objects moving relatively to each other, then friction will be also occurred parallel to touching process. So that, if high purity class items wich is in contact with each other under the pressure move relatively to each other, then gravity between the surfaces will be occured along with the friction force in the surfaces. It is essentially required to distinguish these forces from each other. For this purpose, difference between friction force and gravity as well as the difference of tactile and friction process need to be clearly determined.
Friction (or external friction) is the resistance force what happens along with energy dissipation in the direction of tactiling while two different object is in relative movement of two objects on to each other (energy dissipation is the process for replacement of regulate energy to non-regulate one) [5].
Tactiling is the process of gravity which appears in perpendicular direction to the surface and getting into the factice surface's surface roughness to each other that generally is in connection and trying to consummate both surfaces diamond cages of surface materials in one volume [2].
Gravity is the sum of forces of gravity between paticles which tries to influence atoms and molecules to each other and appears between the surfaces that comes out in perpendicular direction to the surface.

Tactiling is accepted as friction process considering the occurrence of such kind of events at the same time in a sum in technology and nature. However it is required to explain the essence and analyze these processes in comparison to each other to separate them.

For facilitating the solution of current issue let's investigate the tactiling process where the friction force is "0" while tactiling

Rectangular-shaped object with a mass of "m" is in equilibrium while quiescent on the another surface where it is whiteout influence of external forces. In this case it is the gravity force of object that affects the contact surface. It is known that the force of gravity is perpendicular to the surface[3].In contact surfaces, energy dissipation and force for object movement will be "0" regardless to environment temperature. In this case, there is tactile however there is not friction. The absence of external influences to the object, there is also not external force which moves the objects or surfaces or squeezing them to each other. So, perpendicular force to the surface which creates tactile is gravity. Then, gravity force between the surfaces exist and will be calculated as per below[2].

$$F_{caz} = TF_t$$ (1)

Where T- tactile unit, Ft – perpendicular force to the contact surface. In this case, the foce which affects perpendicular to the surface is gravity force and calculate as per below:

$$F_{caz} = Tmg$$ (2)

Where, m- object mass, g- gravitational acceleration.

Static friction is equal to 0 taking into account that there is no any external force to the object

$$F_{sür} = 0$$

In above-mentioned point, due to the too small amount of the tactiling unit- T and perpendicular force, then force of F_{caz} is also processed too small amount. For investigating the point, let's choose 2 surfaces in appropriate with the cleanness class 1 &14 in degree of purity (from degree of purity 14) based on the DST 2789-74 [4]. For the first surface roughness height Rz=320mkm=0,32$\cdot$10-3m, for the second, it is Rz=0,05mkm=0,05 $\cdot$10-6m. As known, substances consist of atoms and molecules and they pervade to each other during relative contact process[1,3]. Roughness itself also consist of atoms and molecules. The smallest particle of the roughness can be also up to the nano particles on the basis of science and technology capabilities. There cannot be a concept where indicates that the height of roughness's is equal to "0" in universe and this concept borders with the atoms. In ideal case, the size of roughness's must be accepted as equal to half size of atoms that forms the solid substance. Let's call this as atom cleanness class. The size of atom [3] equal to D=10-8sm = 10-10m in atom cleanness class, then roughness ideal value of roughness will be Rz=0,5 10-10 m. Contact of 2 surfaces belonging to ideal atom cleanness class will incarnate the meaning of full tactiling. In full tactiling, the value of tactile unit is T=1.

$$T_t = \frac{R_{z1}}{R_{z2}} = \frac{A_{m1}}{A_{m2}} = 1$$ (3)

In full tactiling, the value of the distance between the seats of roughnesses is Am=10-10m which comes out between atom surfaces where they are in contact with each other.

If there is a full tactiling which means there also incomplete tactiling should be occurred. In T<1 of tactile unit, the surfaces tactiling calls as incomplete tactile. Let's determine the tactiling unit in several compiling according to above-mentioned cleanness classes in incomplete tactiling process

First of all, need to identify the tactiling units for the same cleanness class surfaces where they are in contact with the appropriate cleanness surfaces. Full tactiling is process of tactiling while 2 surfaces are in contact where the surfaces' distance (distance between the seats of roughnesses) is ideal during tactiling process. This distance is equal to the diameter of an atom. First, let's calculate how many times the mentioned distance is higher than the distance of surfaces that recognized as atomic cleanness class. The notion of changing the full tactiling to incomplete tactiling is the increase of distances between surfaces. Let's call it tactiling distance coefficient and point it out with M.

$$M_1 = \frac{2R_{z1}}{A_m} \; ; \qquad M_1 = \frac{2 \cdot 0,32 \cdot 10^{-3}}{10^{-10}} = 0,64 \cdot 10^7$$ (4)

According to the class of 1st cleanness

According to the class of 14th cleanness
$$M_{14} = \frac{2R_{z14}}{A_m} ; \quad M_1 = \frac{2 \cdot 0,05 \cdot 10^{-6}}{10^{-10}} = 1 \cdot 10^3$$

Let's calculate the number of incomplete tactiling for each of class. Incomplete tactiling is the ratio of full tactiling unit to distance factor

According to the class of 1st cleanness
$$T_1 = \frac{T_t}{M_1} = \frac{A_m}{2R_{z1}} = \frac{1}{0,64 \cdot 10^7} = 1,56 \cdot 10^{-7} ; \quad (5)$$

$$T_{14} = \frac{T_t}{M_{14}} = \frac{A_m}{2R_{z14}} = \frac{1}{1 \cdot 10^3} = 1 \cdot 10^{-3}$$

According to the class of 14th cleanness

For time being, let's determine the tactiling unit for the contacting of the 1st and 14th cleanness classes with each other accordingly.

Let's calculate how many times distance between the surfaces in different cleanness classes is higher than the distance of surfaces that recognized as atomic cleanness class.

$$M_{1/14} = \frac{(R_{z1} + R_{z2})}{A_m} = \frac{(0,05 \cdot 10^{-6} + 0,32 \cdot 10^{-3})}{10^{-10}} = 320,05 \cdot 10^4 ; \quad (6)$$

$$T_1 = \frac{T_t}{M_{1/14}} = \frac{1}{320,05 \cdot 10^4} = 0,003 \cdot 10^{-4}$$

If we put all aforementioned in a nutshell, we can tell that incomplete tactiling in factice contact will be calculated as per below formula by describing tactiling unit..

$$T = \frac{1}{M_x} \quad (7)$$

Force of gravity between the surfaces
$$F_{caz} = TF_t = \frac{1}{M_x} F_t \quad (8)$$

Once the tactiling unit is known, let's calculate the value of forces of gravity between the surfaces for for each option. m=10kg, $g = 10 \frac{m}{san^2}$

$$F_{caz1} = Tmg = \frac{1}{M_{x1}} m g = 1,56 \cdot 10^{-5} N \quad (9)$$

$$F_{caz14} = Tmg = \frac{1}{M_{x14}} m g = 1 \cdot 10^{-1} N$$

$$F_{caz1/14} = Tmg = \frac{1}{M_{x1}} m g = 0,3 \cdot 10^{-4} N$$

Where the roughness is 1mm

$$F_{cuz1} = Tmg = \frac{1}{M_{x0}} m g = 0,5 \cdot 10^{-5} N$$

For creation of friction in the tactile surfaces, force that tries to move a surface onto other one to be affected. This force will be called as static friction force which obstructive to movement untill exceeding the resistance force created by roughnesses and the force will be called as sliding friction which appears from the moment of moving.

If we pay attention to the calculated values in figure (8), it can be seen that while increasing the value of roughness, the value of the force of gravity between surfaces is so small and it is almost impossible to measure or to differentiate it from the pressure force. However, this does not mean its absence.

Thus, during the compression of 2 surfaces which are in quiescent on each other to the contact surface in perpendicular direction, it must be taken into account the force of gravity of surfaces instead of force of friction.

Taking into account the fore mentioned points, the existence of friction and tactiling process while contacting can be divided into the following groups:

If the object is in quiescent on another object by its force of gravity, then the tactiling exist and friction doesn't not exist.

If external force affects the object in perpendicular direction to contact surface which is in quiescent, still tactiling process is exist and friction doesn't not exist.

Despite the existence of force which tries to act the object that is in quiescent on the other one, if the object is in quiescent, then both friction and tactiling exist at the same time.

If an object is in movement on another one, then both friction and tactiling exist at the same time.

RESULT

1. In research, physical essence of tactiling unit is disclosed in accordance with the laws of physics and analytic figure is achieved to calculate it.

2. If tactiling unit is T=1- it is full tactiling and if it is T<1 surfaces tactiling calls as incomplete tactiling. Parameter which separates full and incomplete tactiling from each other, it calls as distance coefficient

3. Physical method is developed to separate the tactiling from friction process.

DISCUSSION

Scientific research is devoted to development of the scientific basis of materials influences to each other in surfaces contact which beings to the high purity class.

If creation of Resistance of roughnesses in contact surfaces parallel to tactile surfaces calls friction, in perpendicular direction calls influence. In solid objects, influence factor depends on the cleanness class and squeezing force which squeezes the contact surfaces to each other unlikely to gas and liquids. This factor is the main characteristic of tactile event. In research work, disclosure of tactile process physical essence based on the molecular theory is set out.

Tactiling is the process of gravity which appears in perpendicular direction to the surface and getting into the factice surface's surface roughness to each other that generally is in connection and trying to consummate both surfaces diamond cages of surface materials in one volume. Gravity is the sum of forces of gravity between particles which tries to influence atoms and molecules to each other and appears between the surfaces that comes out in perpendicular direction to the surface.

Tactile point explains physical essence of gravity force between particles. Tactile is divided into 2 parts as full and incomplete.

Contact of 2 surfaces belonging to ideal atom cleanness class will incarnate the meaning of full tactiling. In full tactiling, the value of tactile unit is T=1.

If there is a full tactiling which means there also incomplete tactiling should be occured. In T<1 of tactile unit, the surfaces tactiling calls as incomplete tactile.

Scientific research work is carried out by dos. Aslanov J.N. in Oil and Gas equipment department in ASOIU and discussed in department scientific seminar and meeting.

CONCLUSION

If creation of Resistance of roughnesses in contact surfaces parallel to tactile surfaces calls friction, in perpendicular direction calls influence. In solid objects, influence factor depends on the cleanness class and squeezing force which squeezes the contact surfaces to each other unlikely to gas and liquids. This factor is the main characteristic of tactile event. In research work, disclosure of tactile process physical essence based on the molecular theory is set out

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