



“Static electricity” is electricity which is static? No!

“Static electricity” is a collection of different electrical phenomena; phenomena in which the amounts of positive and negative electric charge within a material are not perfectly equal. Where voltage is high and current is low.



Where electrical forces (attraction and repulsion) are seen to reach across space. Widely spaced electrically charged objects may attract or repel each other. Hair might stand on end!

Where electric fields (as opposed to magnetic fields) become very important.

Electrostatics is about “charge”, and about the attract/repel forces which electric charge creates. The motion or the “staticness” of the charges is irrelevant. After all, the same forces continue to exist even when the charges start flowing. And charges that are separated or imbalanced can sometimes

flow along, yet the “static” effects are undiminished when the current begins. In other words, it’s perfectly possible to create flows of so-called “static” electricity.

It’s very misleading to concentrate on the “staticness” of the charges. It derails our explanations and hides many important concepts such as charge separation, the density of imbalanced positive/negative charge, and the presence of voltage fields surrounding the imbalanced charges. Electrostatics is not about “staticness”: instead it’s about charge and forces.

Imagine if water was explained just as badly as “static electricity”. In that case, most people would believe in two special kinds of water called “static water” and “current water”. We’d wrongly insist that “hydrostatics” was the study of static water. In that case, only the hydraulics expert would realize there’s no such thing as “static water”. In a similar way, “static electricity” has nothing to do with “electricity at rest”.

(Taken from <http://amasci.com/emotor/stmiskon.html#one>)

EXERCISES

1 True or false?

- In “static electricity” phenomena, the amounts of positive and negative electric charge are perfectly equal. T F
- Widely spaced objects may attract or repel each other. T F
- Electrostatics is about “staticness”. T F
- Flows of static electricity can be created. T F

2 Find the mistakes in each sentence and correct.

- Charges that are separated or imbalanced can never flow along.
- Electrostatics is all about “staticness”.
- Widely spaced electrically charged objects cannot attract or repel each other.
- Electrostatics is about the attract/repel forces which electric force creates.
- The motion or the “staticness” of the charges is relevant.
- “Static electricity” deals with “electricity at rest”.

3 Match questions and answers.

QUESTIONS		ANSWERS	
A	Is electrostatics about “staticness”?	1	Of course they can, widely spaced electrically charged objects may attract or repel each other, for example hair may stand on end.
B	Can electrical forces act across space?	2	Yes, in the misconception of the word “static”: neither electrostatic nor hydrostatic phenomena deal with the “staticness” of electricity or water.
C	Is there any correlation between electrostatic and hydrostatic?	3	No, it is all about charge and forces.
A		B	
		C	