Tarikh:

7.2 EKSPERIMEN INKUIRI KBAT

Kewujudan cas elektrostatik
The existence of electrostatic charges

PBD Penemuan Inkuiri

Buku teks m/s 144 – 146

HEBAT Sains Modul 4

Tujuan

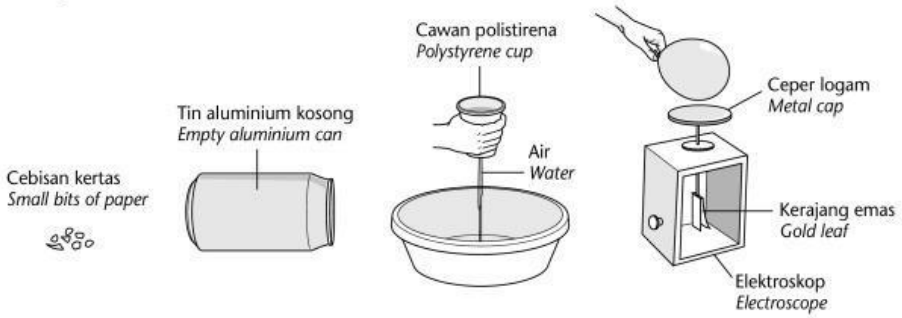
Menunjukkan kewujudan cas elektrostatik
To show the existence of electrostatic charges

Bahan dan Radas

Kain bulu (atau kain sutera), belon (jalur selulosa asetat atau rod politena), cebisan kertas, tin aluminium kosong, cawan polistirena dengan satu lubang kecil di dasarnya, air, elektroskop
Woollen cloth (or silk cloth), balloon (strip of cellulose acetate or polythene rod), small bits of paper, empty aluminium can, polystyrene cup with a small hole at its bottom, water, electroscope

Prosedur

Video



1 Gosok sebiji belon dengan kain bulu./*Rub a balloon with a woollen cloth.*
2 Dekatkan belon itu kepada cebisan-cebisan kertas dan catatkan pemerhatian.
Hold the balloon near small bits of paper and record the observation.
3 Ulang langkah 1 dan 2 dengan menggantikan cebisan-cebisan kertas dengan tin aluminium kosong, aliran halus air dan elektroskop.
Repeat steps 1 and 2 by replacing the small bits of paper with an empty aluminium can, a fine stream of water and an electroscope.

BAB 7

Pemerhatian

1 Cebisan-cebisan kertas, tin aluminium kosong dan aliran halus air _____ ke arah belon.
The small bits of paper, empty aluminium can and fine stream of water are _____ *to the balloon.*

2 Kerajang emas elektroskop _____.
The gold leaf of the electroscope _____.

Perbincangan

1 Apakah cas elektrostatik?/*What are electrostatic charges?* TP1
Cas-cas elektrik yang/*Electrical charges that* _____.

2 Apakah cas yang terhasil pada belon selepas digosok dengan kain bulu? TP2
What are the charges that are produced on the balloon after it is rubbed with the woollen cloth?

_____

3 Tandakan (✓) jenis-jenis cas elektrik./*Tick (✓) the types of electric charges.* TP1

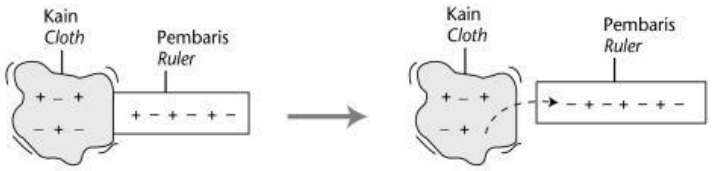
☐ Cas positif *Positive charge*	☐ Cas negatif *Negative charge*	☐ Cas neutral *Neutral charge*

4 Tandakan (✓) apa yang berlaku kepada pembaris plastik selepas digosok dengan kain bulu. TP1
Tick (✓) what happens to the plastic ruler after it is rubbed with the woollen cloth.

☐ Pemindahan proton *Transfer of protons*	☐ Pemindahan elektron *Transfer of electrons*	☐ Tindak balas kimia *Chemical reaction*

5 Apakah kegunaan elektroskop?/*What is the use of an electroscope?*
Mengesan/*To detect* _____.

6 Pilih jawapan yang betul untuk menyatakan jenis cas yang diperoleh apabila kain dan pembaris di bawah digosok bersama./*Choose the correct answers for the types of charge gained when the cloth and the ruler below are rubbed together.* TP2



(a) Kain kehilangan (proton, elektron) kepada pembaris. Kini, kain bercas (positif, negatif) kerana kain mempunyai (proton atau cas positif, elektron atau cas negatif) yang berlebihan.
The cloth loses (protons, electrons) to the ruler. Now, the cloth is charged (positive, negative) because it has excess (protons or positive charges, electrons or negative charges).

(b) Pembaris menerima (proton, elektron) daripada kain. Kini, pembaris bercas (positif, negatif) kerana pembaris mempunyai (proton atau cas positif, elektron atau cas negatif) yang berlebihan.
The ruler receives (protons, electrons) from the cloth. Now, the ruler is charged (positive, negative) because it has excess (proton or positive charges, electrons or negative charges).

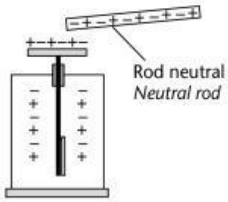
7 Nyatakan ciri-ciri cas elektrostatik./*State the properties of electrostatic charges.*

Cas-cas yang sama saling _____ manakala cas-cas yang berlainan saling _____./*The same charges* _____ *while different charges* _____ *to one another.*

BAB 7

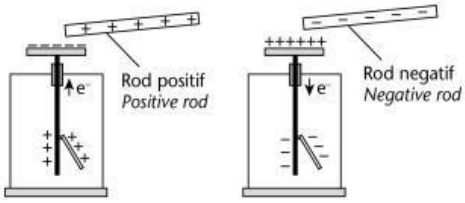
8 Rajah di bawah menunjukkan bagaimana elektroskop berfungsi. Pilih perkataan yang betul.
The diagram below shows how electroscopes work. Choose the correct words. TP2

(a) Rod neutral/*Neutral rod*



Kerajang emas (mencapah, tidak mencapah) kerana cas-cas positif dan negatif (menarik, menolak) antara satu sama lain.
Gold leaf (diverges, does not diverge) because the positive and negative charges (attract, repel) each other.

(b) Rod bercas/*Charged rods*



Kerajang emas (mencapah, tidak mencapah) kerana cas-cas yang sama akan (menarik, menolak) antara satu sama lain pada kerajang emas.
Gold leaf (diverges, does not diverge) because the same charges (attract, repel) each other on the gold leaf.

Praktis Kendiri

9 Bulatkan keadaan yang menghasilkan cas-cas elektrostatik dalam kehidupan harian.
Circle the situations that produce electrostatic charges in everyday life. TP2

Menyikat rambut pada hari yang panas *Combing hair during a hot day*	Mencuci baju *Washing cloth*	Menseterika kain nilon *Ironing nylon cloth*

Kesimpulan

_____ dapat dihasilkan pada objek secara geseran.

_____ *are produced on objects by friction.*