Tarikh:

# 7.2 KBAT EKSPERIMEN INKURII

## Kewujudan cas elektrostatik
*The existence of electrostatic charges*

PBD Penemuan Inkuiri

Buku teks m/s 144 – 146

HEBAT Sains Modul 4

**Tujuan**

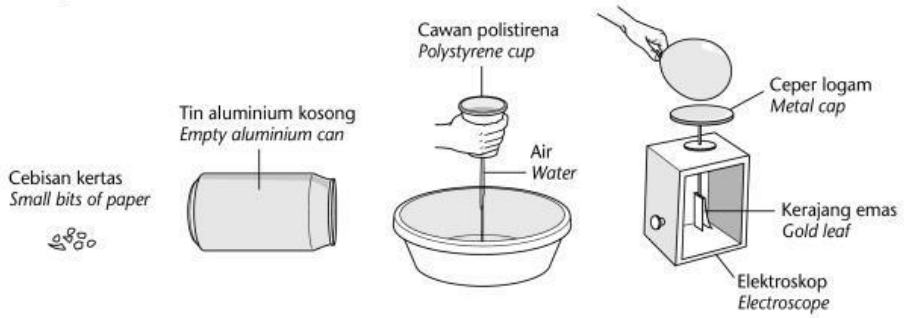
Menunjukkan kewujudan cas elektrostatik
*To show the existence of electrostatic charges*

**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* _____.



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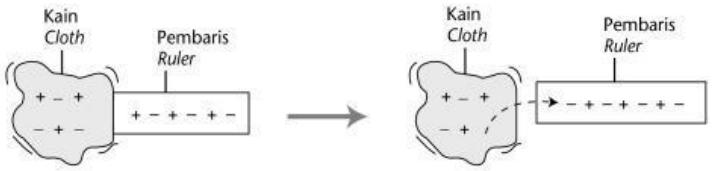
**6** Pilih jawapan yang betul untuk menyatakan jenis cas yang diperoleh apabila kain dan pembaris di bawah digosok bersama./*Choose the correct answers for the types of charge gained when the cloth and the ruler below are rubbed together.* TP2




(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).*

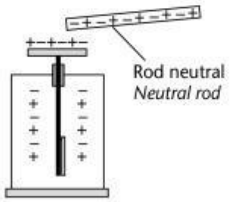
**7** Nyatakan ciri-ciri cas elektrostatik./*State the properties of electrostatic charges.*

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

BAB 7

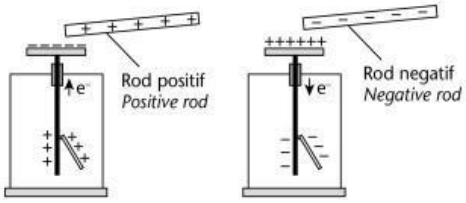
**8** Rajah di bawah menunjukkan bagaimana elektroskop berfungsi. Pilih perkataan yang betul.
*The diagram below shows how electroscopes work. Choose the correct words.* TP2

(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<br>*Combing hair during a hot day* | Mencuci baju<br>*Washing cloth* | Menseterika kain nilon<br>*Ironing nylon cloth* |

Kesimpulan

_____ dapat dihasilkan pada objek secara geseran.

_____ *are produced on objects by friction.*



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