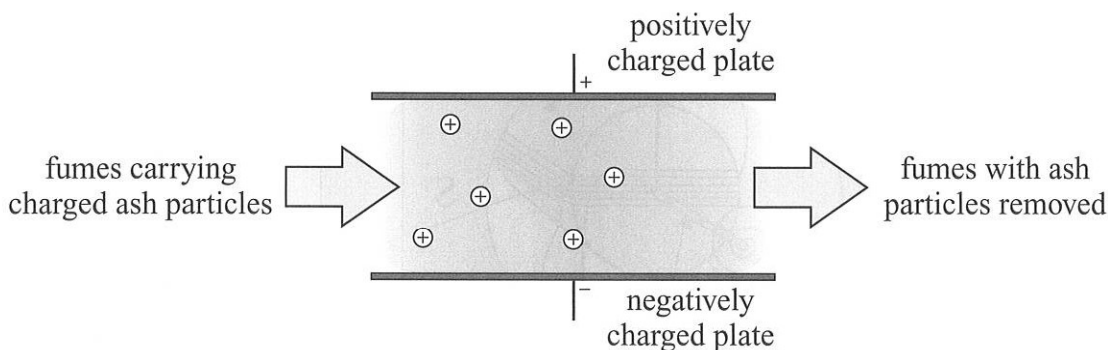


Static Electricity and Electric Fields

- 1 Fumes produced by factories often contain small ash particles that are harmful to the environment. These particles may be removed by passing the fumes through a device called an electrostatic precipitator.

The ash and fumes are passed through a charged wire grid, causing the ash particles to gain a positive charge. The ash and fumes then pass through charged parallel plates as shown in **Figure 1**.

Figure 1



- a) Explain how passing the charged ash particles through these plates will remove them from the fumes.

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[4]

There is a fault and the charged wire grid is turned off, meaning the ash particles are uncharged before passing through the parallel plates. A large amount of the ash is still being removed from the fumes as they pass between the plates. Ash is found to collect in equal amounts on both plates.

- b) Explain why ash is still being removed from the fumes and why ash collects on both plates.

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[4]

[Total 5 marks]

Exam Practice Tip

If, when reading a question, you come across a word or phrase that's new to you (let's be honest, the words 'electrostatic precipitator' don't pop up too often in conversation), don't be put off — read the whole question carefully and look for clues that link the question to what you've learned in class.

Score:

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5

☹️ 😊 😄