PHY315/PHY307 Plagiarism Exercise

The following exercises are intended to help you identify, and so avoid, plagiarism when using legitimate source material in writing a physics essay. In each case, consider whether the author of the "essay extract" is guilty of plagiarism, and whether he or she has referenced the source material correctly.

You are strongly encouraged to consider each extract in turn, evaluating it and reaching your conclusion before checking the "expert view" or moving on to the next extract. Feel free to discuss your considerations in small groups.

Note that none of these extracts is intended to be an example of recommended style or level of material!

The following source material is an extract from "Kicking the oil addiction" by Yaakov Vilenchik, Emanuel Peled & David Edelman, published in the January 2010 edition of Physics World.

Although genuine electric cars do exist, they have several weaknesses: their cruising range is limited to about 250 km because the batteries are heavy and cannot store much energy; the batteries can only operate over a narrow temperature range; the vehicle cannot be used when the battery is exhausted; recharging takes several hours; and many cycles of discharging and recharging the battery degrades its performance. In addition, there are safety concerns, because internal shorting and high temperatures can cause a spontaneous reaction between the electrodes and the electrolyte that ultimately destroys the battery. Plus, electric cars cost a lot. Despite these weaknesses, hybrid and battery-operated vehicles will have an important role to play in reducing the use of oil.

Essay extract 1

Although genuine electric cars exist, they have several weaknesses: their range is limited to about 250 km because batteries are heavy and do not store much energy; the batteries can only operate over a narrow temperature range; the car cannot be used when the battery is exhausted; recharging takes many hours; and discharging and recharging the battery reduces its performance. In addition, internal shorting and high temperatures can cause a spontaneous reaction between the electrodes and the electrolyte that ultimately destroys the battery. Plus, electric cars cost a lot. Despite these problems, hybrid and battery-operated vehicles will have an important part to play in reducing the use of oil.

Essay extract 2

Electric cars have several weaknesses. Their range is limited to about 250 km because the batteries are heavy and cannot store much energy; the batteries can only operate over a small temperature range; recharging takes many hours; and discharging and recharging the battery can degrade its performance. Also, there are safety concerns, because shorting and high temperatures can cause a reaction between the electrodes and the electrolyte which destroys the battery. Electric cars are also expensive. However, hybrid and battery-operated vehicles will have an important role to play in reducing the use of oil.

References

http://physicsworld.com

Essay extract 3

It is true that real electric cars exist, but they have a number of weaknesses: because the batteries are heavy and cannot store much energy their cruising range is limited to around 250 km; the batteries only work over a small temperature range; once the battery is exhausted the vehicle cannot be used; it takes several hours to recharge the battery; and the battery is degraded by a large number of cycles of recharging and discharging. There are also safety concerns, since a spontaneous reaction can occur between the electrodes and the electrolyte due to internal shorting or high temperatures that can cause the ultimate destruction of the battery. In addition, electric cars are expensive. Despite these problems, battery-operated and hybrid transport will play an important role in minimising the use of oil.

References

Y Vilenchik, E Peled, D Andelman, "Kicking the oil addiction", Physics World

Essay extract 4

Electric cars have a number of drawbacks[1]: the batteries cannot store much energy and are heavy so their range is only about 250 km; the batteries only operate over a restricted range of temperature; recharging takes several hours; once the battery is exhausted the vehicle cannot be used without recharging; degradation of the battery occurs after several cycles of discharging and recharging. There are also safety concerns, as shorting or high temperatures can cause a reaction between the electrolyte and the electrodes that finally destroys the battery. Electric cars also cost a lot. However, hybrid and battery-operated vehicles will be important in reducing our use of oil.

References

[1] Y. Vilenchik, E. Peled, D. Andelman, "Kicking the oil addiction", Physics World vol. 23 issue 1 (January 2010) p. 22

Essay extract 5

Y. Vilenchik et al have discussed problems with electric cars, stating "Their cruising range is limited to about 250 km because the batteries are heavy and cannot store much energy; the batteries can only operate over a narrow temperature range; the vehicle cannot be used when the battery is exhausted; recharging takes several hours; and many cycles of discharging and recharging the battery degrades its performance."[1] The authors also discuss safety issues, such as "internal shorting and high temperatures can cause a spontaneous reaction between the electrodes and the electrolyte that ultimately destroys the battery".[1] However, they conclude "Despite these weaknesses, hybrid and battery-operated vehicles will have an important role to play in reducing the use of oil."[1]

References

[1] Y. Vilenchik, E. Peled, D. Andelman, "Kicking the oil addiction", Physics World vol. 23 issue 1 (January 2010) p. 22

Essay extract 6

Electric vehicles are beginning to contribute to domestic transport, and so reduce our dependence on fossil fuels, though a number of issues prevent them, at present, providing an ideal solution. The need to spend time recharging the car's batteries impedes their use for long distance travel, and requires that time is spent with the car connected to an external power supply between journeys. The batteries have a limited lifetime, losing their efficiency after being recharged many times – a problem familiar to laptop users! The batteries also have a reduced output in freezing conditions. …

When evaluating electric vehicles, safety must also be taken into account. Faults within batteries may produce overheating and internal reactions. These in turn can lead to a fire or explosion risk. …

Essay extract 7

Electric vehicles are beginning to contribute to domestic transport, and so reduce our dependence on fossil fuels, though a number of issues prevent them, at present, providing an ideal solution[1]. The need to spend time recharging the car's batteries impedes their use for long distance travel, and requires that time is spent with the car connected to an external power supply between journeys. The batteries have a limited lifetime, losing their efficiency after being recharged many times – a problem familiar to laptop users! The batteries also have a reduced output in freezing conditions. …

When evaluating electric vehicles, safety must also be taken into account. Faults within batteries may produce overheating and internal reactions[1]. These in turn can lead to a fire or explosion risk. …

References

[1] Y. Vilenchik, E. Peled, D. Andelman, "Kicking the oil addiction", Physics World vol. 23 issue 1 (January 2010) p. 22

Essay extract 8

Electric vehicles are beginning to contribute to domestic transport, and so reduce our dependence on fossil fuels, though a number of issues prevent them, at present, providing an ideal solution. The need to spend time recharging the car's batteries impedes their use for long distance travel, and requires that time is spent with the car connected to an external power supply between journeys. Indeed, the typical range of an electric car is only about 250 km[1]. The batteries have a limited lifetime, losing their efficiency after being recharged many times – a problem familiar to laptop users! The batteries also have a reduced output in freezing conditions. …

When evaluating electric vehicles, safety must also be taken into account. Faults within batteries may produce overheating and internal reactions. These in turn can lead to a fire or explosion risk. …

References

[1] Y. Vilenchik, E. Peled, D. Andelman, "Kicking the oil addiction", Physics World vol. 23 issue 1 (January 2010) p. 22