



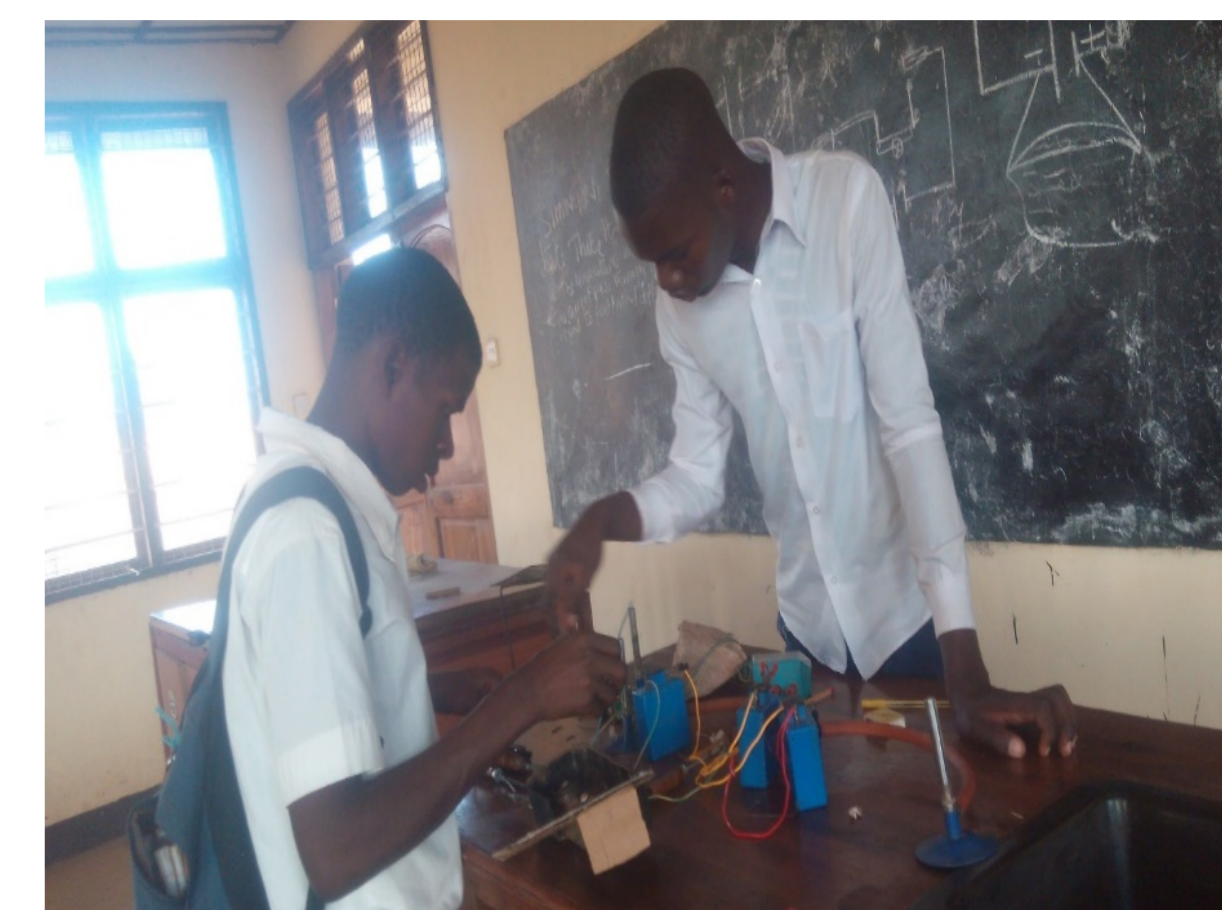
The Relationship Between a Bimetallic Strip and Bell Ring

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Introduction:

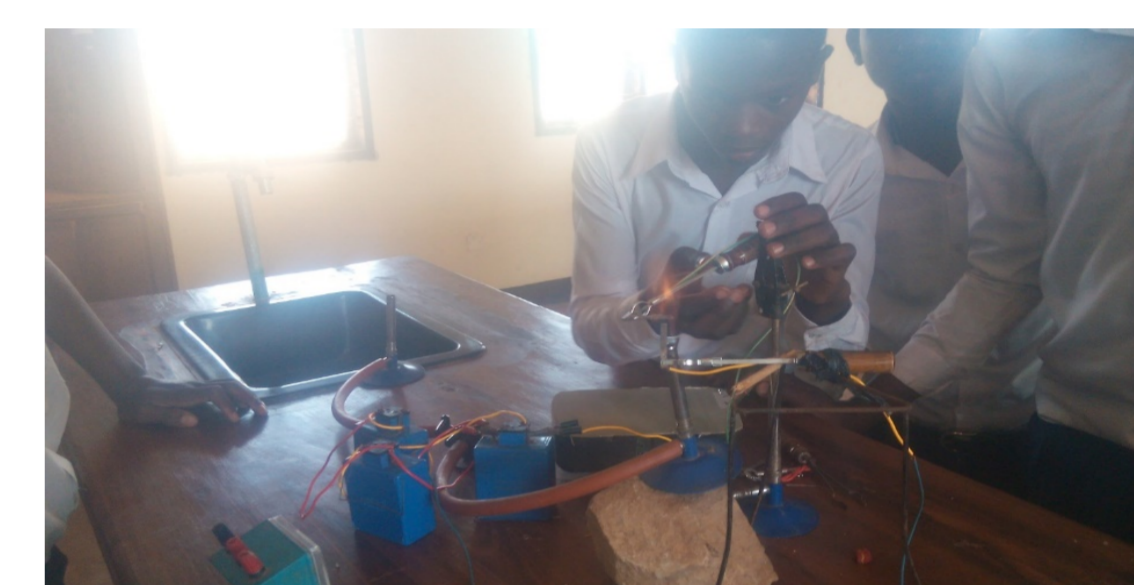
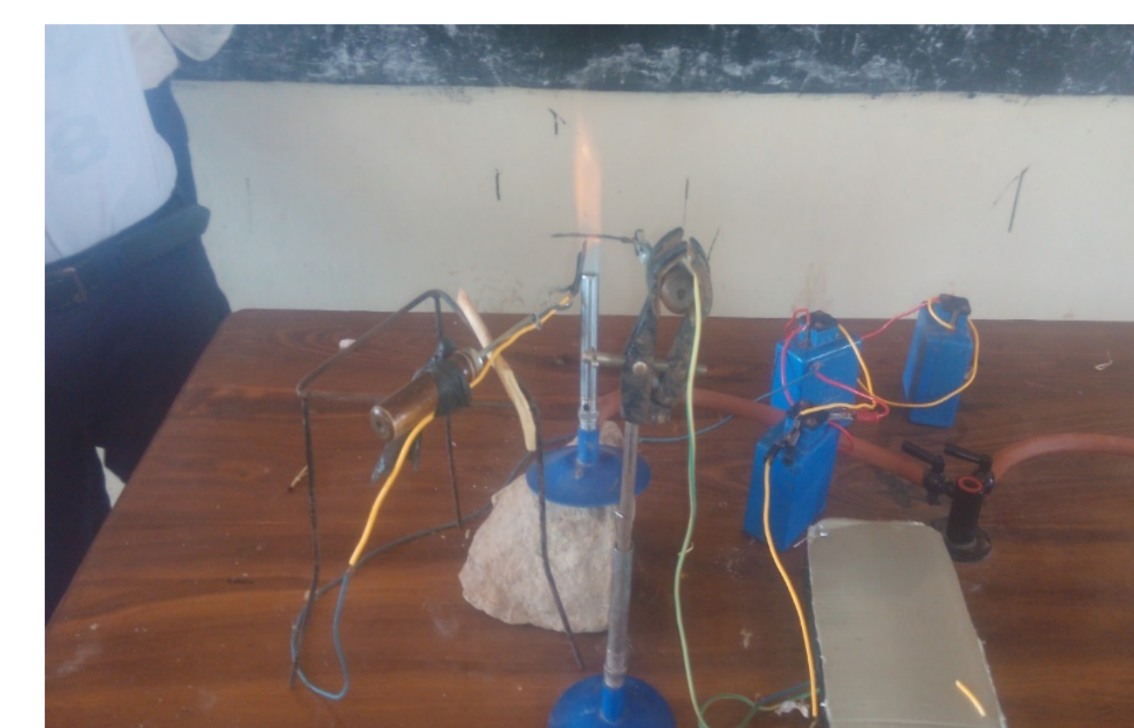
The title of the project is the investigation of the relationship of the expansion of the bimetallic strip and the ring of the electric bell, this project developed from the category of Chemical, Physical and Mathematical Science. The aim of this project is to construct the simple alarm fire that will work when there is excess temperature in the bimetallic strip that will make the bimetallic strip to increase their lengths by bending towards the contact junction, as time goes the bimetallic strip will be contact with the contact junction and the electric bell will ring to notify that there is a fire break in the building.



Method:

The methods used for collecting data for this project work is by scientific experiment by having the following apparatus: bimetallic strip (aluminium and iron), source of heat (Bunsen burner), two batteries, a cell cable, connecting wires, electric bell, motor, stop watch and a thermometer where by a set of steps/procedures were set to follow.

- Connect the wires with the other apparatus as it is shown on the circuit below
- Put a source of heat (Bunsen burner) near to the bimetallic strip and light it up
- Record the data of temperature against time
- Proceed recording the data above until when the bimetallic strip become contact with the junction.



Results:

The data collected from the experiment were shown in tabular form as it is shown below

It is seen that from the above data, as the temperature through the bimetallic strip increases also the lengths of bimetallic strip were increasing by bending towards the contact junction, so this shows that when metals are heated tend to increase their dimensions, so these bimetallic strip expanded by increasing their lengths towards the contact junction, so we saw that soon after the contact the electric bell ring to notify that there is a fire break in that particular building.

Time(sec)	0	10	20	30	40	50	60	70
Temp(°C)	24	700	900	1000	1070	1110	1148	1180

Conclusions

From the above results, it shows that as the temperature increases with time also the lengths of the bimetallic strip were increasing towards the contact junction and this action went on until the bimetallic strip became contact with the contact junction, for this case the circuit is complete and leads the electric bell to ring to notify that there is excess temperature.

From the above conclusion we discovered that for bimetallic strip to be very sensitive it should be near about 1mm to the contact junction and also it should be very thin so that just for small temperature rise the bimetallic strip should make contact with the contact junction to make a complete circuit for the electric bell to ring.

Also since it is very simple to construct a simple alarm fire, we advise the society and the government to make sure that houses and institutions like boarding schools and other building of such kind which have electricity should have these simple alarm fire that will notify that there is a fire break in the building so that the immediate measures to be taken soon before the huge impact extends more.

References

MoVET (2005) Physics for Secondary schools form three
TIE (2011) Physics Practical manual

Acknowledgments

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