A collaborative LaTeX document

Class of ID2090, Third Trimester of 2021 batch

June 14, 2022

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1 Introduction

This file includes tex files from the folders of each student. The students are expected to update the file named after their roll number and place any images in the same folder. Students do not have to edit this master document. Once the student has sent a pull request which is accepted and processed successfully, his/her assignment submission is deemed to be complete.

You are also welcome to add references and cite them. Examples on how to do that are on the course repository [**?**].

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24 ME21B091

Variation of Electric resistance due to change in temperature

24.1 Introduction

We are going to look into the variation of electric resistance due to the changes in temperature. Why does this happen? We will be looking into that in the next section.

24.2 Variation of Electric resistance

Variation in resistance happens due to the collisions between electrons and atoms of the medium. The electron flow/the current is resisted when other atoms are colliding with it and as the temperature increases, the collisions increase due to increase in energy of atoms and molecules. Thus resistance increases.

Electric resistance is shown linearly increasing with temperature for metals like copper for a moderate value for temperature

$$R = R_0(1 + \alpha(T - T_0)) \tag{1}$$

Where,

Symbols and Letters used	Explanation
R	Resistance at temperature T
R_0	Resistance at temperature T_0
α	Temperature coefficient
T	Current temperature
T_0	Reference temperature

24.3 Graph of linear variation of resistance with temperature

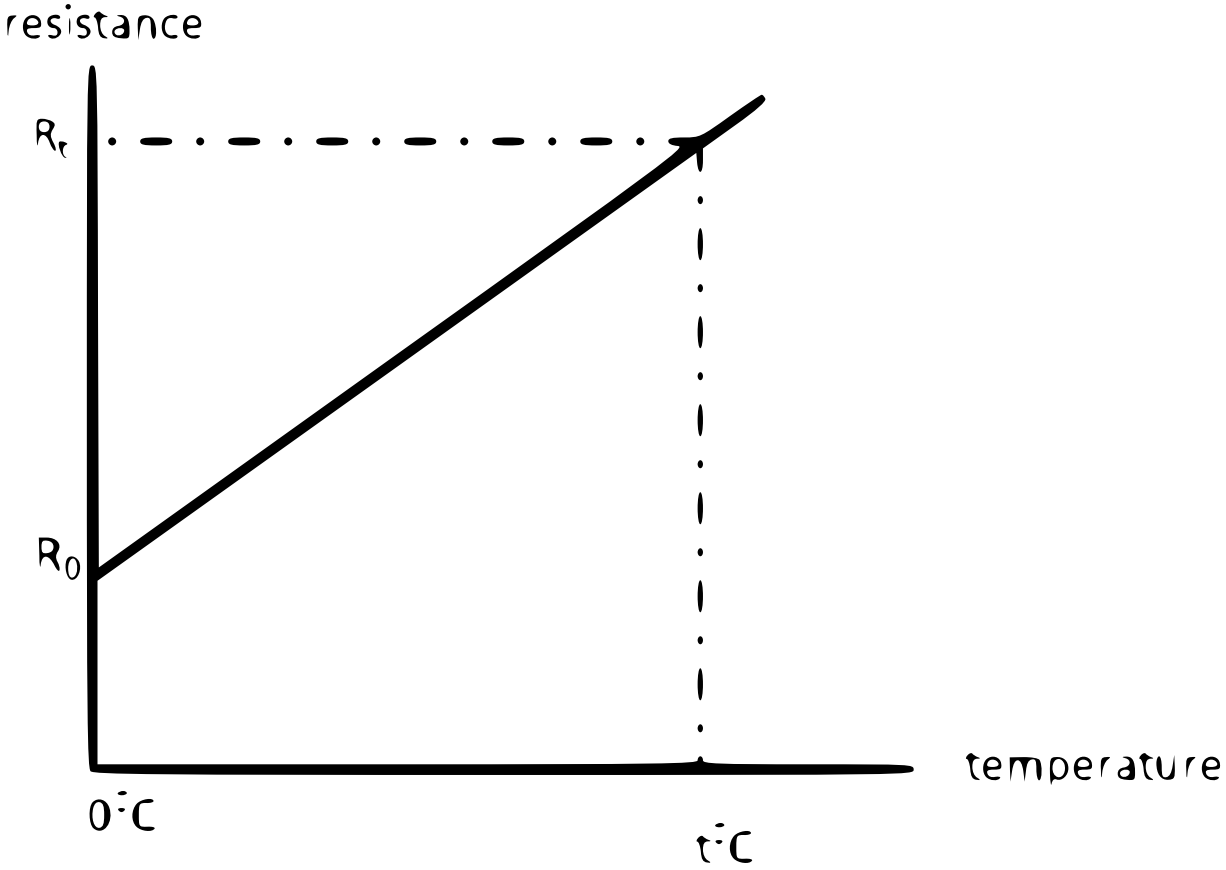

Image Source: Click Here

24.4 Further references

For further references see

https://www.electrical4u.com/resistance-variation-with-temperature/
https://byjus.com/physics/temperature-dependence-resistance/

25 ME21B186

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44 Conclusions

If this master tex file could be compiled successfully, it means that the class has learnt the concepts of Git as well as LaTeX properly.

45 References

References

[1] Repository for id2090 course. `https://github.com/gphanikumar/mm2090`. Accessed: 2022-06-13.