

Static Electricity and Charges

Spoken Tutorial Project

<https://spoken-tutorial.org>

National Mission on Education through ICT

Madhuri Ganapathi

IIT Bombay

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Learning Objectives



Learning Objectives

We will learn to,



Learning Objectives

We will learn to,

▶ Transfer charges to an object



Learning Objectives

We will learn to,

- ▶ Transfer charges to an object
- ▶ Show the attraction and repulsion between the charged objects



Learning Objectives

We will learn to,

- ▶ Transfer charges to an object
- ▶ Show the attraction and repulsion between the charged objects
- ▶ Arrange the charges and predict the electric field



Learning Objectives



Learning Objectives

- ▶ Measure the voltage at various locations



Learning Objectives

- ▶ Measure the voltage at various locations
- ▶ Draw equipotential lines



System Requirement



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- ▶ **Ubuntu Linux OS v18.04**



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- ▶ **Ubuntu Linux OS v18.04**
- ▶ **Firefox Web Browser v98.0.2**



Prerequisites



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- ▶ **Learners should be familiar with topics in basic science**



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- ▶ Learners should be familiar with topics in basic science
- ▶ Please use the link below to access the tutorials on PhET Simulations
<https://spoken-tutorial.org>



Link for PhET Simulation

- ▶ Please use the given links to download the PhET simulations
<https://phet.colorado.edu/en/simulations/balloons-and-static-electricity>
<https://phet.colorado.edu/en/simulations/charges-and-fields>



PhET Simulations



PhET Simulations

In this tutorial we will use,



PhET Simulations

In this tutorial we will use,

▶ **Balloons and Static Electricity and**



PhET Simulations

In this tutorial we will use,

- ▶ **Balloons and Static Electricity** and
- ▶ **Charges and Fields PhET simulations**



Assignment



Assignment

Explain why:



Assignment

Explain why:

- 1. A charged balloon is repelled by another charged balloon?**
- 2. A copper rod cannot be charged by rubbing?**



Assignment



Assignment

1. Draw an equipotential line between two opposite charges where the voltage is zero (0.0 V)
2. Explain why the potential on this line is zero?



Summary

We have learnt to,

- ▶ Transfer charges to an object
- ▶ Show the attraction and repulsion between the charged objects
- ▶ Arrange the charges and predict the electric field



Summary

- ▶ **Measure the voltage at various locations**
- ▶ **Draw equipotential lines**



About the Spoken Tutorial Project

- ▶ Watch the video available at http://spoken-tutorial.org/What_is_a_Spoken_Tutorial
- ▶ It summarises the Spoken Tutorial project



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Spoken Tutorial Workshops

The Spoken Tutorial Project Team

- ▶ Conducts workshops using spoken tutorials
- ▶ Gives certificates to those who pass an online test
- ▶ For more details, please write to contact@spoken-tutorial.org



Answers for THIS Spoken Tutorial

- ▶ Questions in THIS Spoken Tutorial?
- ▶ Visit <https://forums.spoken-tutorial.org>
- ▶ Choose the minute and second where you have the question
- ▶ Explain your question briefly
- ▶ The Spoken Tutorial project will ensure an answer



Acknowledgements

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