# Creating a Device Model in eSim

**Spoken Tutorial Project**
**https://spoken-tutorial.org**
**National Mission on Education through ICT**

**http://sakshat.ac.in**

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**In this tutorial, we will learn-**

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▶ **To create a Germanium Diode from an existing Device Model**

**In this tutorial, we will learn-**

- ▶ **To create a Germanium Diode from an existing Device Model**
- ▶ **To edit a current Device Model**

# System Requirements

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- **Ubuntu Linux OS version 16.04**

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- **eSim version 2.0**

# Prerequisites

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# Device Models

General form: `.model mname`
`component_type(pname=pval1`
`pname=pval2....)`

- ▶ **mname** indicates model name
- ▶ **component_type** is the model type
- ▶ **pname** is the parameter name
- ▶ **pval** is the parameter value

# Device Models in eSim

▶ **These model components are already added in eSim**

▶ **They are referred to as templates**

▶ **The model libraries are used with `eSim_Devices` components**

Download `Germanium_Diode_1N34A` from the Code File section

# Shockley Diode Equation

**This equation relates the diode current with the diode voltage**

$$I = I_s [e^{\frac{V_D}{nV_T}} - 1]$$

**The Spice DC parameters are-**

**N:Emission coefficient**

**Is:Saturation Current**

**Rs:Ohmic resistance**

# Summary

In this tutorial, we learnt:

- ▶ To create a Germanium Diode from an existing Device Model
- ▶ To edit a current Device Model

# Forum to answer questions

▶ **Do you have questions in this Spoken Tutorial?**

▶ **Choose the minute and second where you have the question.**

▶ **Explain your question briefly.**

▶ **Someone from the FOSSEE team will answer**

**https://forums.spoken-tutorial.org/**

# FOSSEE Forum

▶ **Please post your queries on eSim in the FOSSEE forum.**
**https://forums.fossee.in/**

# Circuit Simulation

- ▶ **The FOSSEE team coordinates the Circuit Simulation project.**
- ▶ **Contributors will receive `Certificates` and `Honorarium`.**
- ▶ **For more details, please visit this site:**
  **https://esim.fossee.in/circuit-simulation-project**

# Lab Migration

▶ **The FOSSEE team coordinates the Lab Migration project.**

▶ **For more details, please visit this site: https://esim.fossee.in/lab-migration-project**

# Acknowledgements

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- **For more details, visit this website.**
  **https://spoken-tutorial.org/**

# THANK YOU!