



# RAMCO INSTITUTE OF TECHNOLOGY

Approved by AICTE, New Delhi & Affiliated to Anna University  
Accredited by NAAC & An ISO 9001:2015 Certified Institution  
NBA Accredited UG Programs: CSE, EEE, ECE and MECH

Department of Electrical and Electronics Engineering  
Academic Year 2022 – 2023 (Even Semester)

Degree, Semester & Branch: VI Semester B.E. EEE

Course Code & Title: EE8601 Solid State Drives

Name of the Faculty member (s): Mr. S. Meenakshi Sundaravel

### Innovative Practice Description

❖ **Unit / Topic:** Unit II / Applications

- **Course Outcome:** CO 2
- **Topic Learning Outcome:** TLO 8
- **Activity Chosen:** One minute paper
- **Justification:**

Applications of dc motor drive in wide range of industries due to their constant speed operation, dynamic response and high starting current. Since, one minute paper activity provides a conceptual bridge between successive class periods. Improve the quality of class discussion by having students write briefly about a concept or issue before they begin discussing it.

**Time Allotted for the Activity:** 02 minutes

• **Details of the Implementation:**

At the end of the class, students were asked to write about the topic discussed in the class. The students expressed the understood content and the content which were not clear in that particular topic. This activity shows whether the students can able to understand the specific topic and their involvement in the particular class.

### CO – PO / PSO mapping:

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	2	1	1	-	1	-	-	-	1	-	-	1	1	-	-

(1 – Low 2 – Moderate 3 – High)

• **PO / PSO mapped:**

<b>Innovative practice</b>	<b>PO9</b>
	1
<b>Justification for correlation</b>	The students can Function effectively as an individual

• **Images / Screenshot of the practice:**

<b>Innovative Teaching Method Execution</b>	
Applications of DC motor drive – One minute paper	
<p style="text-align: right;">Gr. Sivaguruthatchinamoorthy III - EEE (9536210533)</p> <p>Application of DC motor Drive.</p> <ol style="list-style-type: none"> <li>1. Marine application</li> <li>2. oil winding machine</li> <li>3. Rolling mill &amp; steel</li> <li>4. mining operation.</li> </ol>	<p style="text-align: right;">Gr. GOKUL IV - EEE (953620105310)</p> <p>Application of DC motor drives.</p> <p>Rolling mills speed :-</p> <p>Paper mill</p> <p>Sugar mill</p> <p>Textile mill</p> <p>mining mill.</p>

• **Reflective Critique:**

❖ **Feedback of practice from students and other stakeholders:**

- ✓ Students understood the concept which was reflected from their answers for the questions I have asked during discussion session.

❖ **Benefit of the practice:**

- ✓ Students can able to attend the question even in the questions are in indirect form.
- ✓ Students can able to explain the concepts in examination without any confusion.

❖ **Challenges faced in implementation:**

- ✓ Time utilization for conducting activity.

References:

1. Gopal K.Dubey, Fundamentals of Electrical Drives, Narosa Publishing House, 1992.
2. Bimal K.Bose. Modern Power Electronics and AC Drives, Pearson Education, 2002.
3. R.Krishnan, Electric Motor & Drives: Modeling, Analysis and Control, Pearson, 2001.

**Signature of Faculty Member**

**HOD**



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**Degree, Semester & Branch: VI Semester B.E. EEE**

**Course Code & Title: EE8601 Solid State Drives**

**Name of the Faculty member (s): Mr. S. Meenakshi Sundaravel**

### Innovative Practice Description

❖ **Unit / Topic:** Unit III / Rotor resistance control

- **Course Outcome:** CO 3
- **Topic Learning Outcome:** TLO 9
- **Activity Chosen:** Virtual Lab Simulation
- **Justification:**

Virtual lab refers to a virtual teaching and learning environment aimed at developing students' laboratory skills. As one of the most important eLearning tools, they allow the student to conduct various experiments without any constraints to place or time, in contrast to the constraints of real labs. By this, students can visualize the effect of rotor resistance in the speed control of Induction motor.

**Time Allotted for the Activity:** 15 minutes

• **Details of the Implementation:**

The students were instructed to make the proper connection by clicking the node as instructed. If the wire is misplaced, click the node number to detach the nodes' wire. Switch on the MCB. After that, click anywhere on the autotransformer and slide the knob of the Rheostat to change the resistance. Take the readings from Rotor, Voltmeter, Ammeter and Watt-meter. Click "Add to table" button to insert the values in the table. Similarly, after taking minimum 6 readings, click the "Graph" button.

**CO – PO / PSO mapping:**

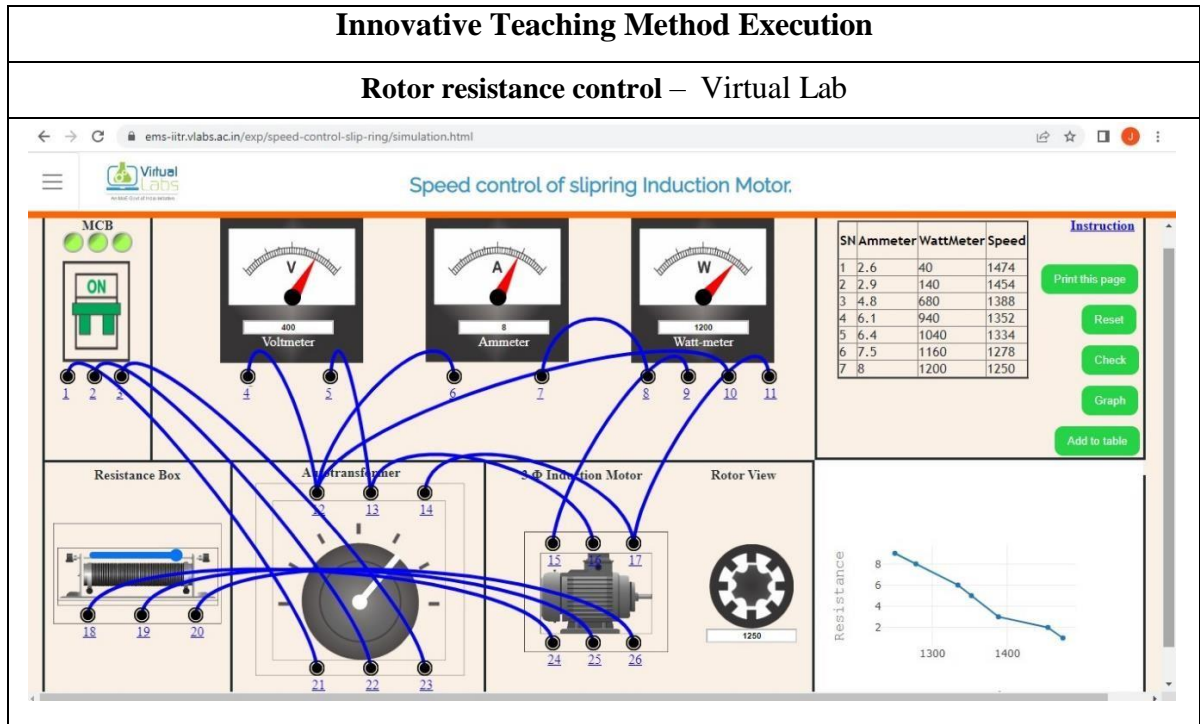
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO3	2	1	1	-	1	-	-	-	1	-	-	1	1	-	-

(1 – Low 2 – Moderate 3 – High)

• **PO / PSO mapped:**

<b>Innovative practice</b>	<b>PO5</b>
	1
<b>Justification for correlation</b>	The students can effectively use the virtual lab.

- **Images / Screenshot of the practice:**



- **Reflective Critique:**

- ❖ **Feedback of practice from students and other stakeholders:**

- ✓ Students understood the concept which was reflected from their answers for the questions I have asked during discussion session.
- ✓ Also they can able to visualize the effect of speed with respect to rotor resistance, therefore they easily understand the concept.

- ❖ **Benefit of the practice:** (E.g.: Outcome attainment would have increased due to innovative practice over conventional practice)

The process of simulating a scenario to practice different responses and actions to a real life situation is extremely effective in knowledge retention. This is because knowledge isn't in theory – the user needs to apply it in a real-life situation. Simulations can be slowed down to study behavior more closely. Conditions can be varied and outcomes investigated. Also Critical situations can be investigated without risk.

- ❖ **Challenges faced in implementation:**

I planned the activity for 15 minutes. But in Class room it takes 25 minutes.

References:

1. Gopal K.Dubey, Fundamentals of Electrical Drives, Narosa Publishing House, 1992.
2. Bimal K.Bose. Modern Power Electronics and AC Drives, Pearson Education, 2002.
3. R.Krishnan, Electric Motor & Drives: Modeling, Analysis and Control, Pearson, 2001.

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