

Seminar One

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XJTU

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Outline

- 1 Topic One
 - Converter Valve
- 2 Electromagnetic Field
 - Maxwell
 - Transmission Line
- 3 third section

1 Topic One

2 Electromagnetic Field

3 third section

1 Topic One

■ Converter Valve

2 Electromagnetic Field

■ Maxwell

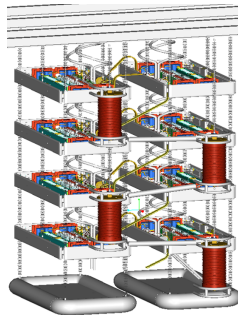
■ Transmission Line

3 third section

Structure



(a) Real Image



(b) Structure

图: Converter Valve

Layer

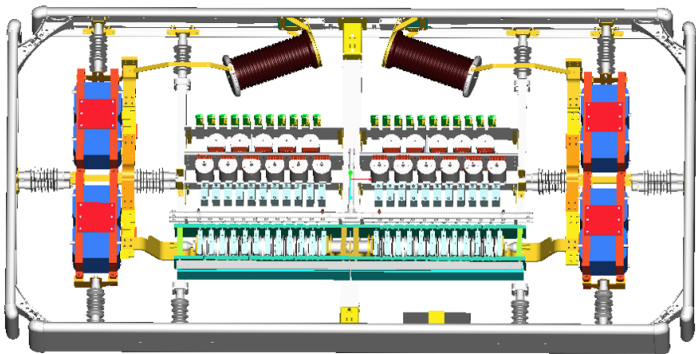


图: Layer

Circuit

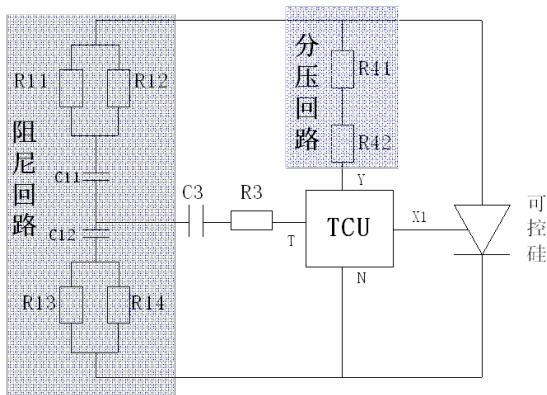


图: Basic Circuit

1 Topic One

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3 third section

1 Topic One

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Maxwell Equation^[1]

$$\oint_l \vec{H} \cdot d\vec{l} = \int_S \vec{J} \cdot d\vec{S} + \int_S \frac{\partial \vec{D}}{\partial t} \cdot d\vec{S}$$

$$\oint_l \vec{E} \cdot d\vec{l} = - \int_S \frac{\partial \vec{B}}{\partial t} \cdot d\vec{S}$$

$$\oint_S \vec{B} \cdot d\vec{S} = 0$$

$$\oint_S \vec{D} \cdot d\vec{S} = q$$

关系

$\vec{D} = \epsilon \vec{E} \Rightarrow$ 类似电容的关系

$\vec{B} = \mu \vec{H} \Rightarrow$ 类似电感的关系

$\vec{J} = \gamma \vec{E} \Rightarrow$ 类似电阻的关系

1 Topic One

■ Converter Valve

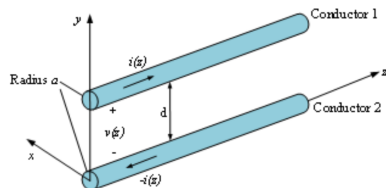
2 Electromagnetic Field

■ Maxwell

■ Transmission Line

3 third section

Telegrapher's Equation



$$\begin{aligned}
 -\frac{\partial v(z, t)}{\partial z} &= R' i(z, t) + L' \frac{\partial i(z, t)}{\partial z} \\
 -\frac{\partial i(z, t)}{\partial z} &= G' v(z, t) + C' \frac{\partial v(z, t)}{\partial z}
 \end{aligned}$$

1 Topic One

2 Electromagnetic Field

3 third section

3

test information^[2]

Reference



冯慈璋, 马西奎. 工程电磁场导论[M]. 陕西: 高等教育出版社, 2000.



吴锴, 陈曦, 王霞, 等. 纳米粒子改性聚乙烯直流电缆绝缘材料研究 () [J]. 高电压技术, 2013, 39(1): 8-16.

Thank you!