

STORY

CREMATORY / INDUCTION HEATING

WORKS BY INDUCED CURRENT

$$\text{POWER DELIVERED} = I^2 R$$

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1. The first part of the document is a list of names and titles.

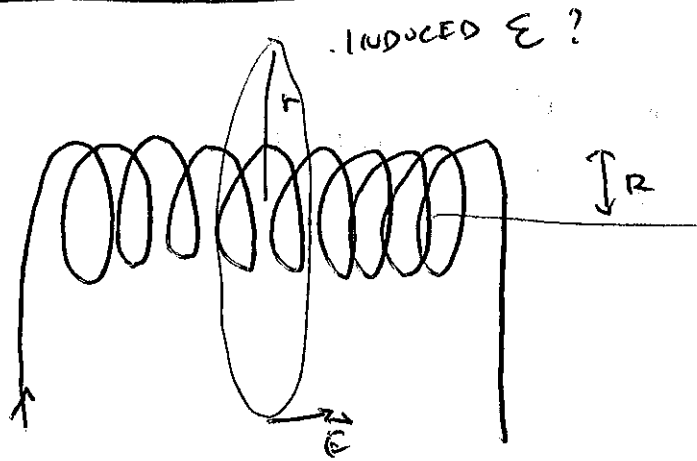
2. The second part of the document is a list of names and titles.

3. The third part of the document is a list of names and titles.

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# INDUCED EMF EXAMPLES



$$I = I_{\text{MAX}} \cos(\omega t)$$

$$\oint \vec{E} \cdot d\vec{s} = - \frac{d\Phi_B}{dt}$$

$$B = \mu_0 n I = \mu_0 n I_{\text{MAX}} \cos(\omega t)$$

$$\Phi_B = BA \mu_0 n I_{\text{MAX}} \cos(\omega t)$$

$$\frac{d\Phi_B}{dt} = -BA \mu_0 n I_{\text{MAX}} \omega \sin(\omega t)$$

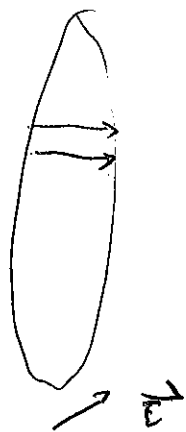
$$\oint \vec{E} \cdot d\vec{s} = E 2\pi r = - \frac{d\Phi_B}{dt}$$

$$E(2\pi r) = BA \mu_0 n I_{\text{MAX}} \omega (\sin \omega t)$$

$$A = \pi R^2$$

$$\vec{E} = \frac{\mu_0 \eta I_{max} \omega R^2}{2r}$$

$\sin(\omega t)$



AT LARGE  $\omega$  - ~~GROWS~~ GROWS

b) WHAT IS IT INSIDE?

$$\vec{E} = \frac{\mu_0 \eta I_{max} \omega}{2} r \sin(\omega t)$$

MAXWELL'S EQUATION

T MAXWELL

1831

1831 - 1879

~~1831~~  
3

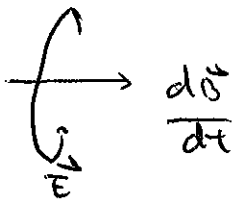
$$\vec{\nabla} \cdot \vec{E} = \frac{\rho}{\epsilon_0}$$

$$\vec{\nabla} \cdot \vec{B} = 0$$

$$\vec{\nabla} \times \vec{E} = -\frac{d\vec{B}}{dt}$$

$$\vec{\nabla} \times \vec{B} = \mu_0 \vec{J} + \mu_0 \epsilon_0 \frac{d\vec{E}}{dt}$$

AMPERE'S LAW  
 WE CAN  
~~AMPERE'S LAW~~  
 DISPLACEMENT  
 CURRENT CH. 34



CHANGE

Handwritten text at the top of the page, possibly a title or header.

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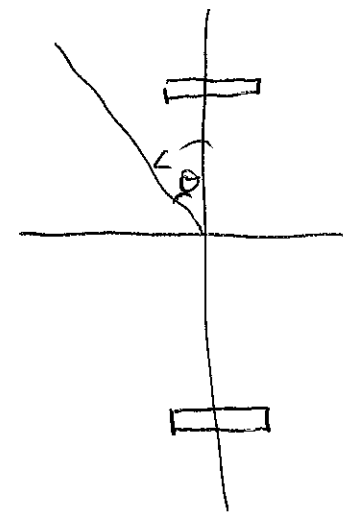
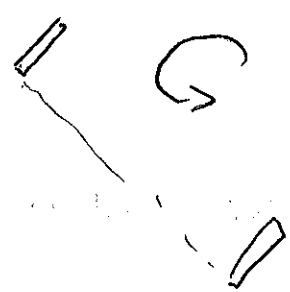
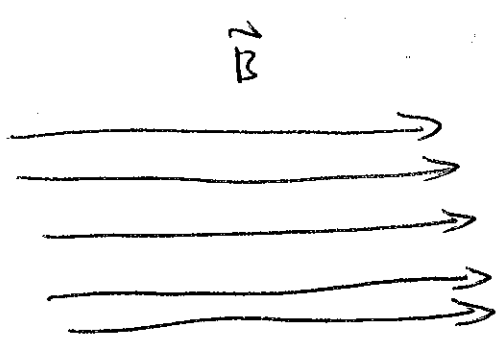
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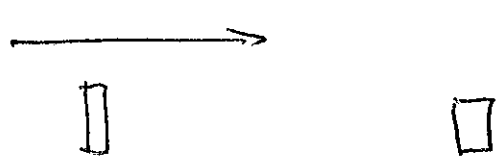
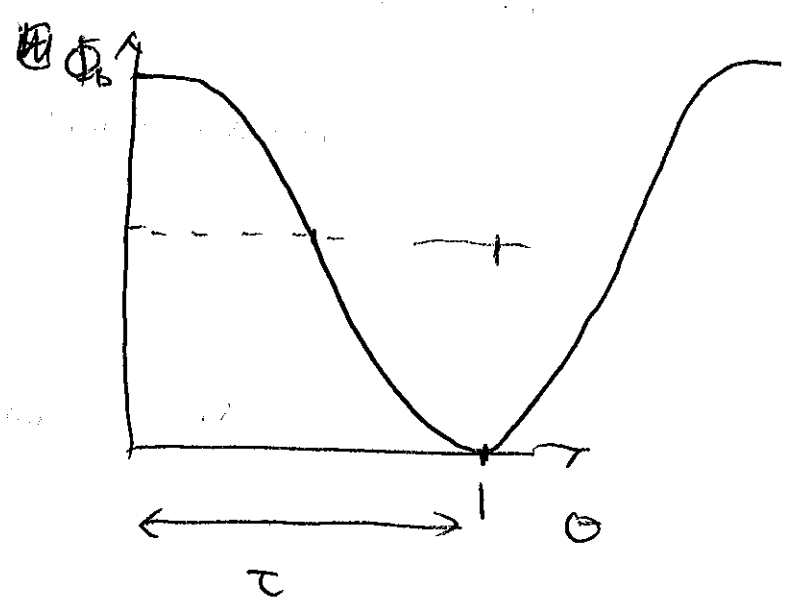
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GENERATORS



$\frac{d\Phi_B}{dt} = \text{NEGATIVE}$



$\Phi_B =$

$$\bar{\Phi}_B = \cancel{\Phi_0} BA \cos(\omega t)$$

$$\omega = \cancel{\frac{2\pi}{T}} \frac{2\pi}{T}$$

$$\frac{\partial \bar{\Phi}_B}{\partial t} = -BA\omega \sin(\omega t)$$

$$\mathcal{E} = BA\omega \sin(\omega t)$$

FOR LARGE COILS

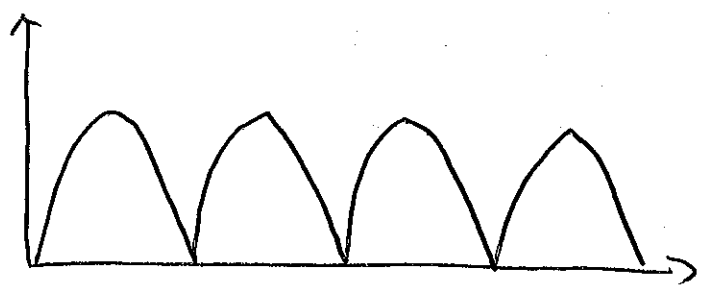
$$\frac{N BA\omega \sin(\omega t)}{}$$

AC GENERATOR.



→ DC CURRENT GENERATOR

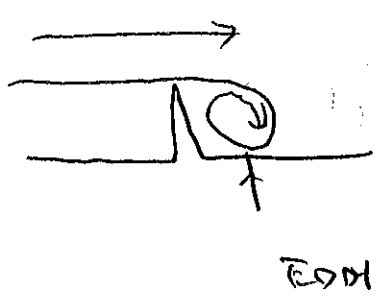
BRUSHED TO ALLOW ONLY + SIGNS



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EDDY CURRENTS

CIRCULATION CURRENT ~~IS~~ INDUCED BY  $\vec{B}$



KIND OF SIMILAR.

