

외팔보를 이용한 Piezoelectric Energy Harvesting 시스템의 설계 Design of Piezoelectric Energy Harvesting System using Cantilever

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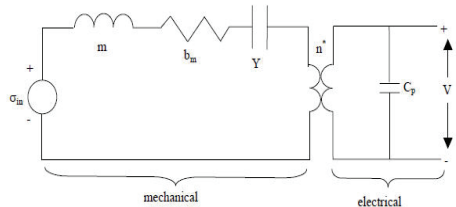


Fig. 1 Circuit Representation of Piezoelectric

$$|P| = \frac{m \zeta_e A^2}{4 \omega \zeta_T^2} \quad (2.3)$$

(2.3)

A 가

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2.

2.2

2.1

Fig.1

(1)

$$\ddot{\delta} + \frac{b_m b^{**}}{m} \dot{\delta} + \frac{k_{sp}}{m} \delta = \frac{k_{sp} d}{m t_c} V + \dot{b} y \quad (2.4)$$

$$V = -\frac{Y t_c d}{\epsilon} \dot{\delta} \quad (2.5)$$

$$m \ddot{z} + (b_e + b_m) \dot{z} + k z = -m \ddot{y} \quad (2.1)$$

(2.6)

(2)

$$\zeta_e = \frac{\omega k^2}{2 \sqrt{\omega^2 + \frac{1}{(RC)^2}}} \quad (2.6)$$

PZT

$$|P| = \frac{m \zeta_e \omega^3 Y^2}{4 \zeta_T^2} \quad (2.2)$$

(2.7)

$$P = \frac{1}{\omega^2} \times \frac{RC^2 \left(\frac{Y t_c d b^*}{\epsilon} \right)^2}{(4 \zeta^2 + k^4)(RC \omega)^2 + 4 \zeta k^2 (RC \omega) + 2 \zeta} A_{in}^2 \quad (2.7)$$

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