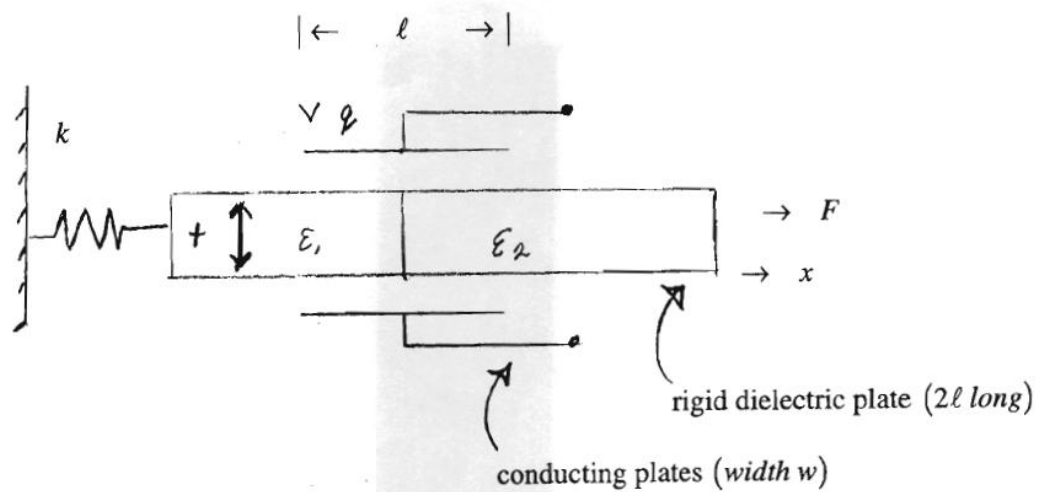


## 지능재료 및 설계 과제물 6번

제출기한: 6월 15일 (금)

1.

Consider the following electromechanical system consisting of a rigid thin slab of dielectric between two conducting plates.



- a) Derive the coupled quasi static equations of motion for the system assuming:
  - 1) applied external voltage and force,
  - 2) applied external voltage and displacement,
  - 3) applied charge and force,
  - 4) applied external charge and displacement.
- b) What is the quasi static response,  $x$ , as function applied charge or voltage?
- c) What is the open loop voltage response to applied force or displacement?