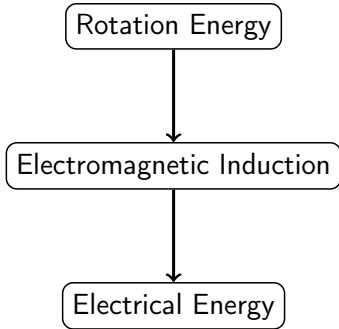
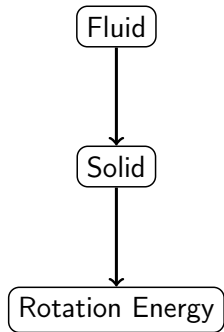
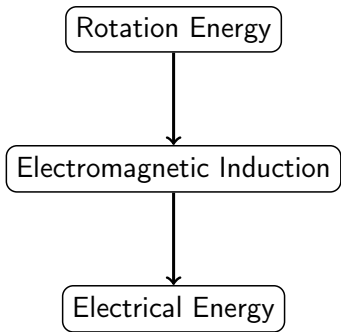


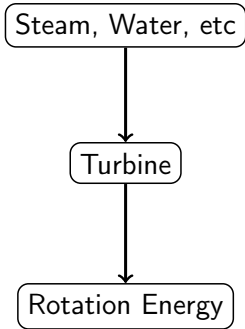
# Research on renewable energy harvesting efficiency enhancement

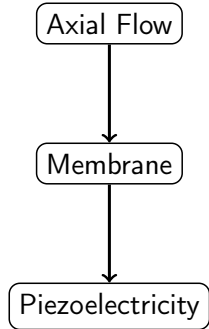
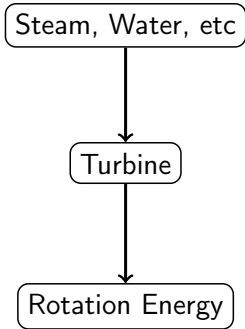
Taehyun Eom

G-LAMP Biweekly Research Insights  
April 30, 2025









- Fluid-Solid-Electricity System

- Fluid-Solid-Electricity System
- Fluid-Structure Interaction

# Why this is hard?

## Cauchy's Momentum Equations

$$\frac{\partial}{\partial t}(\rho \mathbf{u}) + \nabla \cdot (\rho \mathbf{u} \otimes \mathbf{u}) = -\nabla p + \nabla \cdot \boldsymbol{\tau} + \rho \mathbf{a}$$



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## Navier-Stokes Equations

$$\frac{\partial}{\partial t} \mathbf{u} + (\mathbf{u} \cdot \nabla) \mathbf{u} = \dots$$

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$$\nabla \cdot (\rho \mathbf{u} \otimes \mathbf{u})$$

## Navier-Stokes Equations

$$(\mathbf{u} \cdot \nabla) \mathbf{u}$$

- Nonlinearity
- Butterfly effect(Chaos theory)

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- Try to create new materials.

The end.