

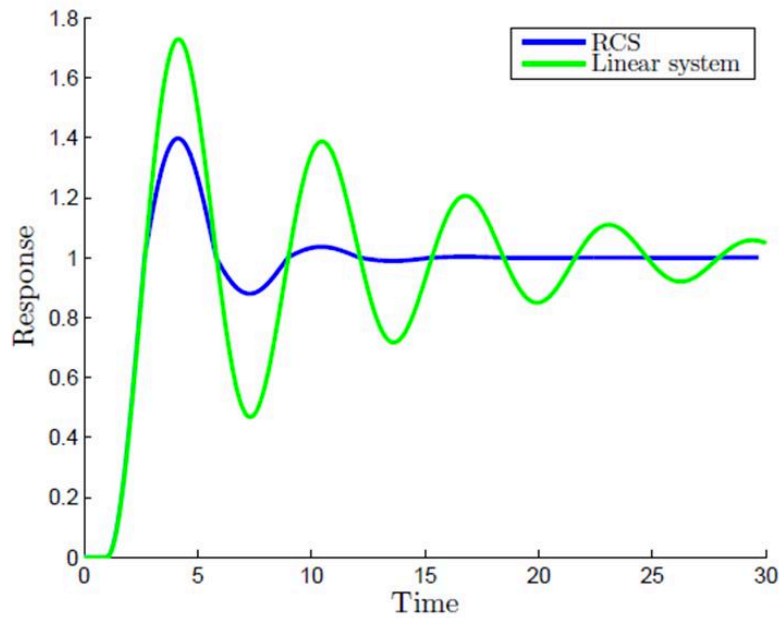


Open MSc Projects

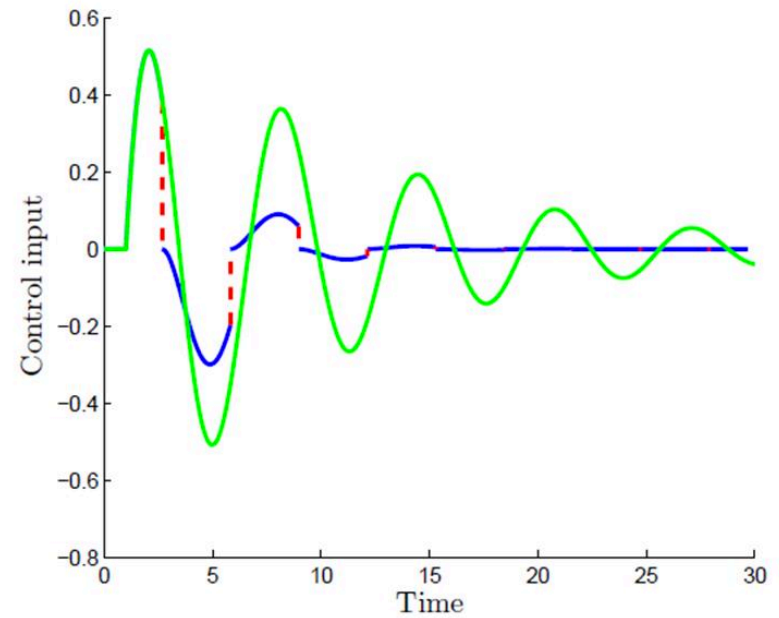
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Nonlinearity to create damping for precision system



(a) Step response

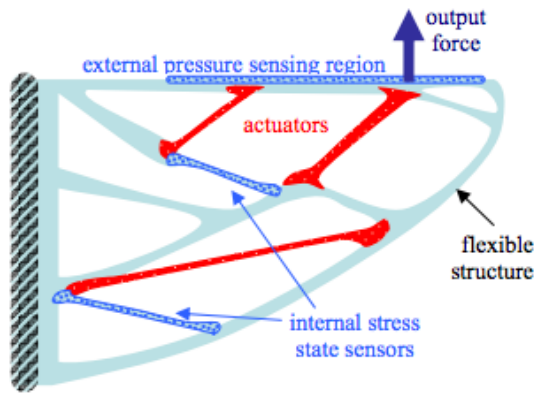


(b) Control input

Objective:

To study nonlinear effect like reset to damp the high frequency modes and therefore design a high bandwidth control

Integrated sensing and actuation in compliant mechatronic system with large motion



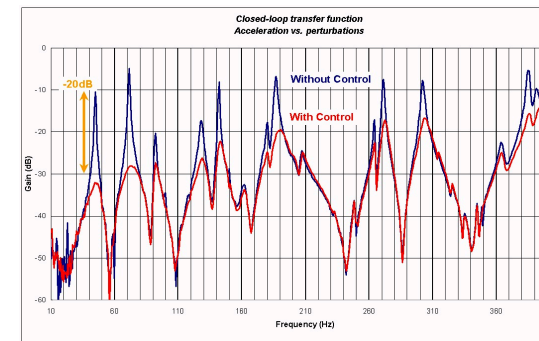
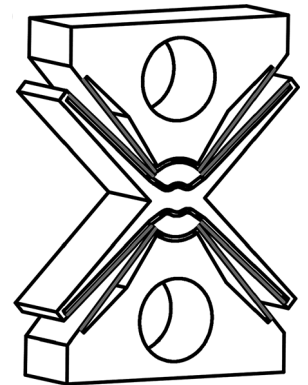
Integrated sensing and actuation compliant system [1]

Objective:

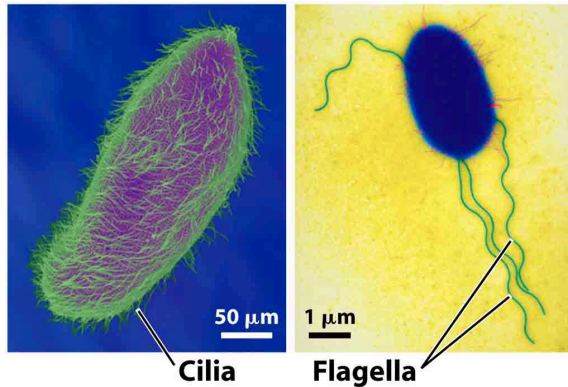
To design an integrated actuator-sensor-flexure

Tasks:

- 1) Design integrated actuation and sensing in a flexure for motion control
- 2) Active damping: cancel the vibration and remove the extra DoF caused due to flexibility



Mechanical implementation of actuator for propulsion of micro-robots



Objective:

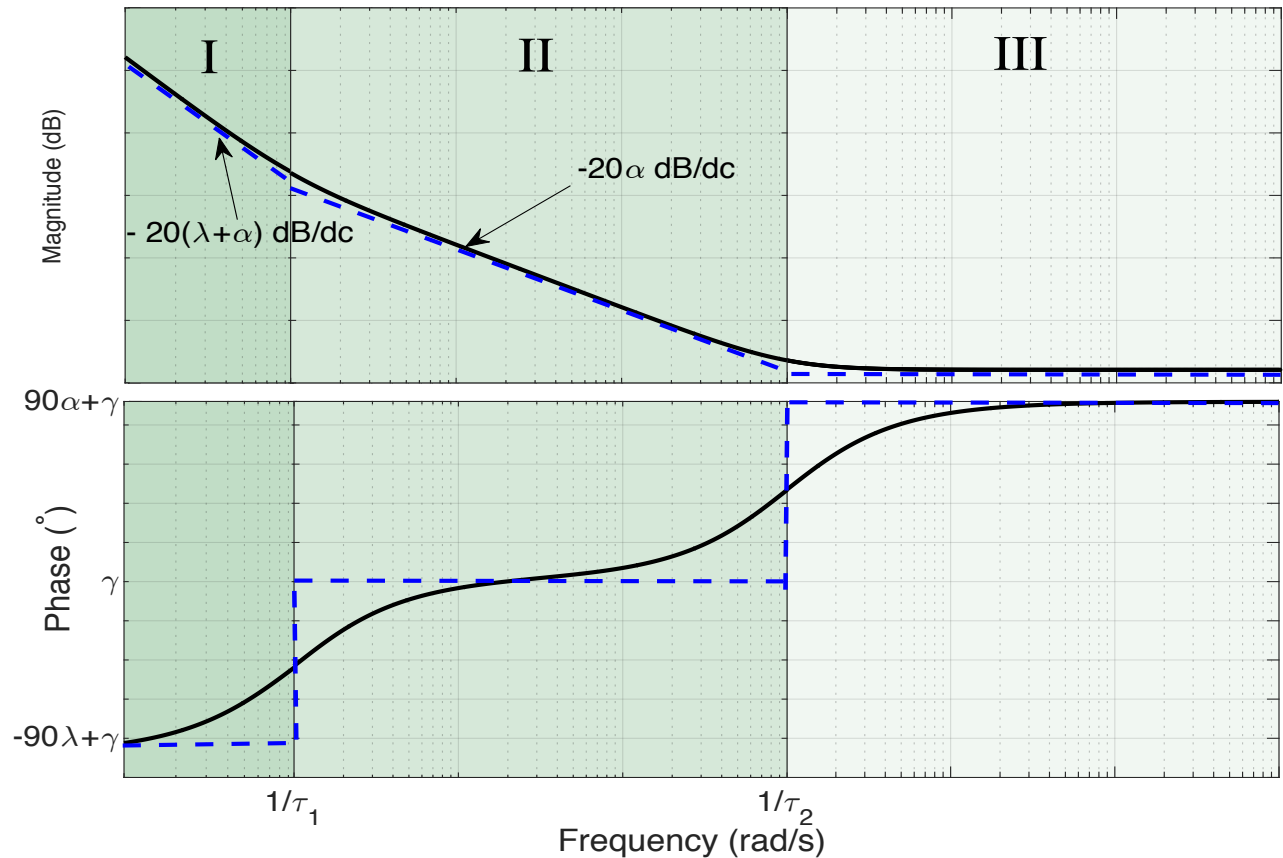
To design a sperm/cilia robots using thermal smart actuator

Tasks:

- 1) Implement the smart actuator for propulsion of robot
- 2) Optimize the design for better performance in motion

This is a part of cohesion project together with BME and DCSC.

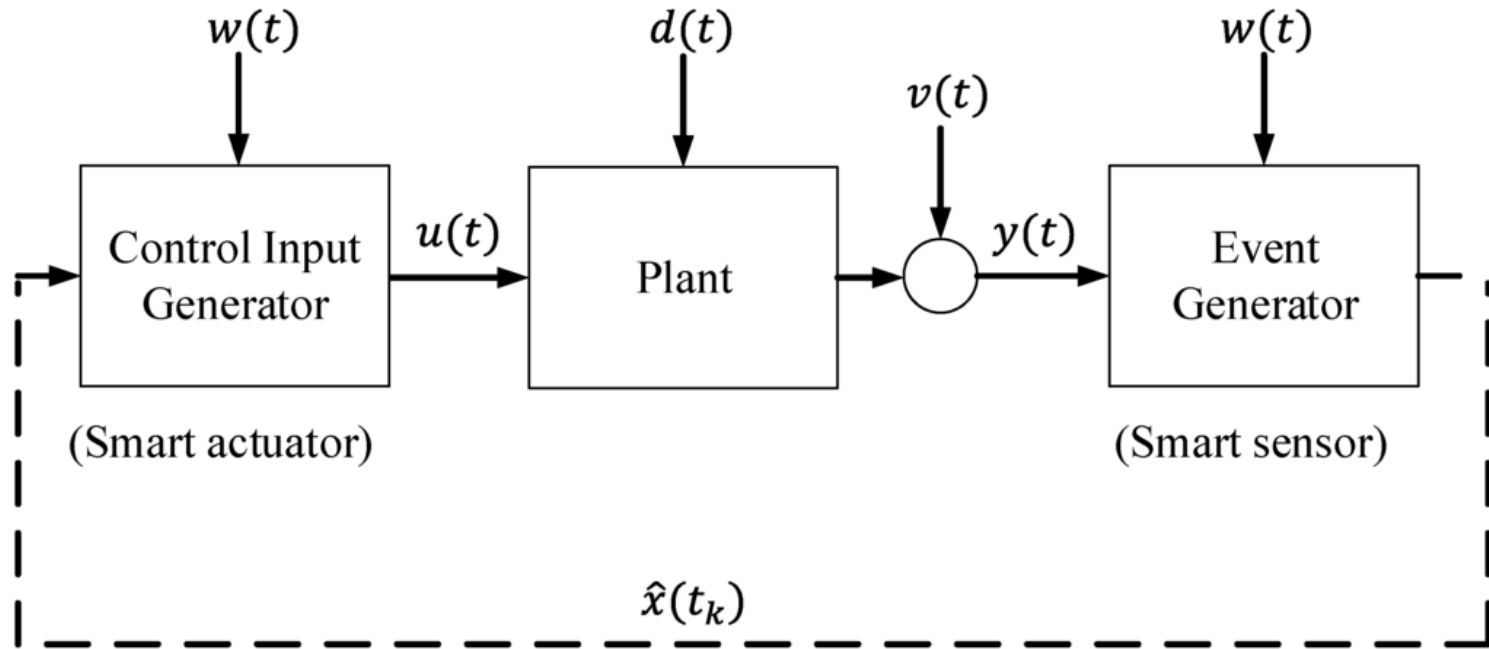
New generation of PID Control for mechatronic system with flexibility



Objective:

To use the reset strategies to increase the phase and use fractional order to increase the robustness

Event-based control of mechatronic system with wireless sensing



Objective:

To apply proper event-based sampling instead of periodic sampling to optimize the energy consumption

This project is funded by ASM.