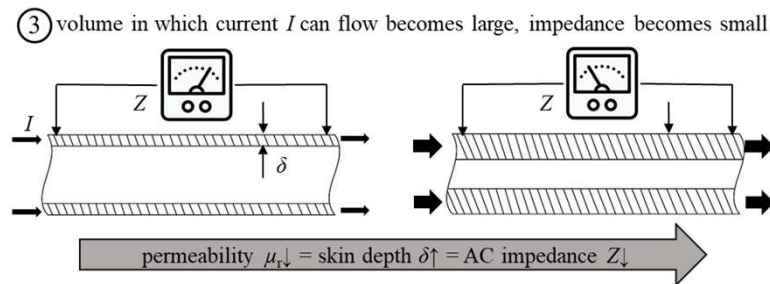
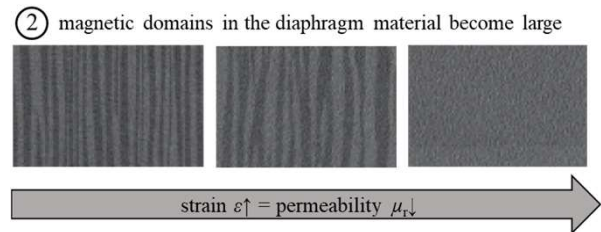
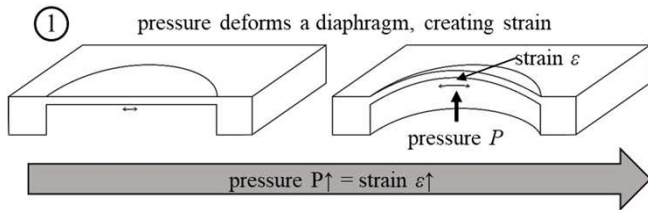
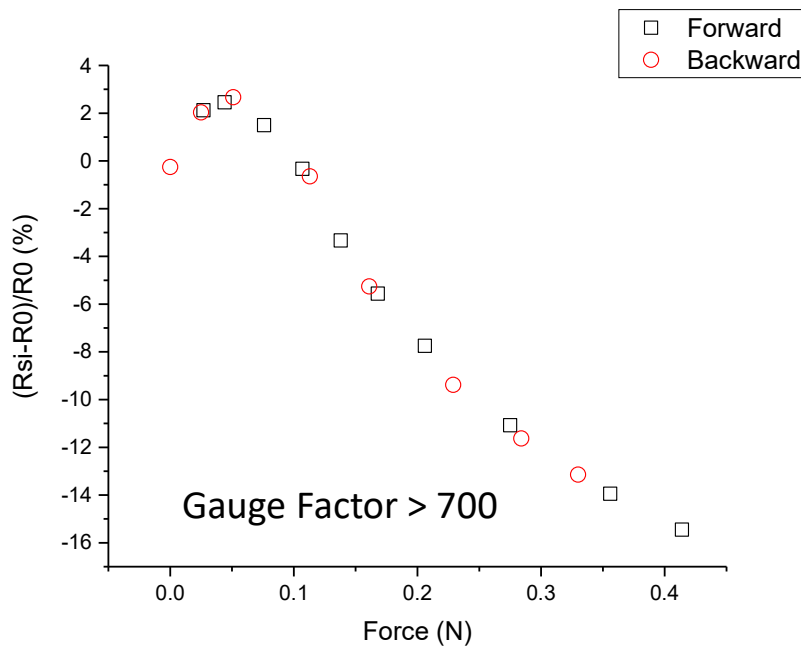


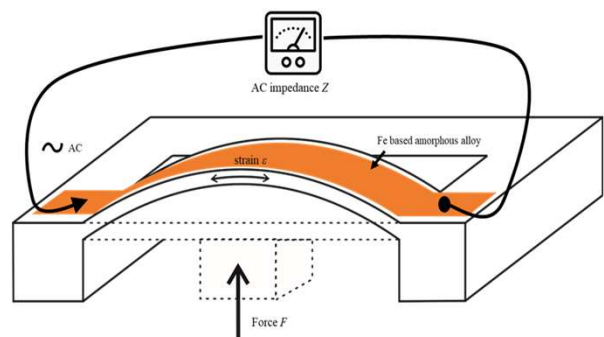
High Gauge Factor Force/Pressure Sensor by using Stress-Impedance Effect



When a tensile stress acts on soft magnetic material, the magnetic permeability (μ_r) increases, and when a compressive stress acts, the magnetic permeability decreases. Further, the depth at which a current flows is affected by the magnetic permeability due to the skin effect, so that the resistance value changes due to the action of stress.



The impedance of a soft magnetic thin film changes when it is under strain → strain gauge for various sensors: force, pressure ...



Froemel, J.; Diguët, G.; Muroyama, M., Micromechanical Force Sensor Using the Stress-Impedance Effect of Soft Magnetic FeCuNbSiB. Sensors, 2021, 21(22), 7578