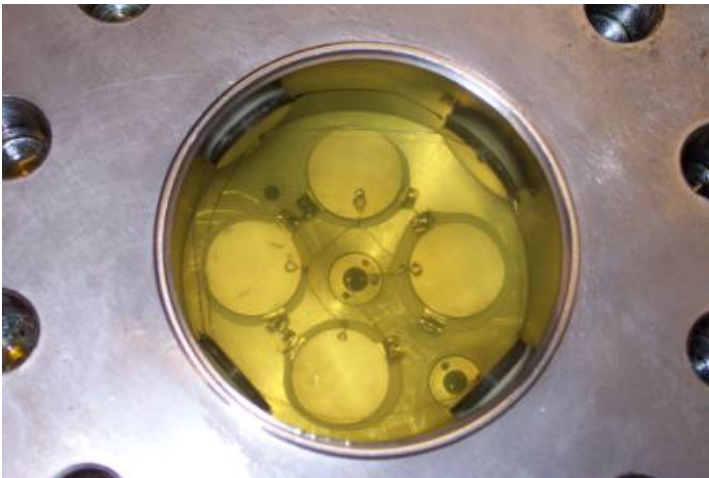
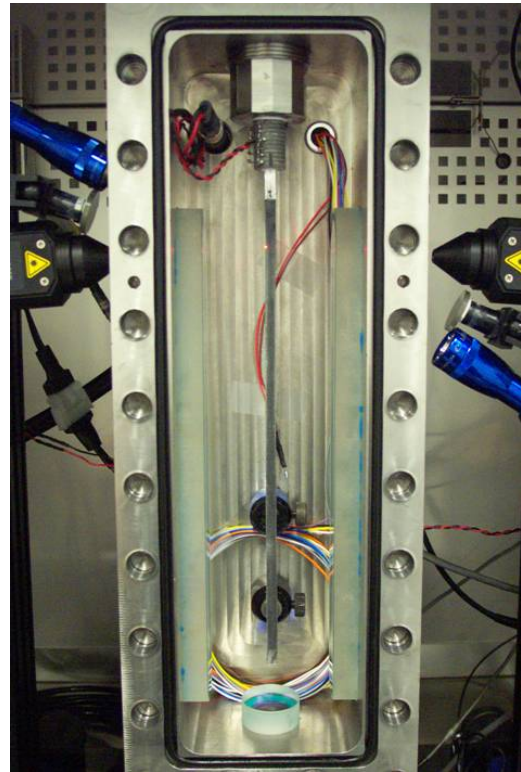


Elastic Characterization of Materials

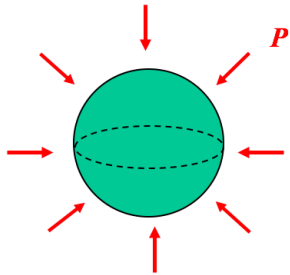
Service Center



Dynamic Elastic Properties of Materials as a Function of Temperature and Hydrostatic Pressure

The laboratory features 3 Thermotron environmental chambers for temperature control, 3 compact Polytec laser Doppler vibrometers, one Instron load frame for static tension/compression testing and several custom-made pressure chambers

Service Center Capabilities



Bulk Modulus K^*

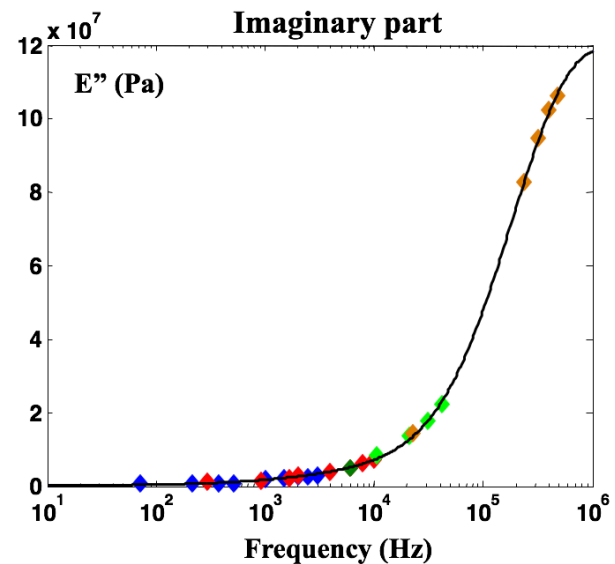
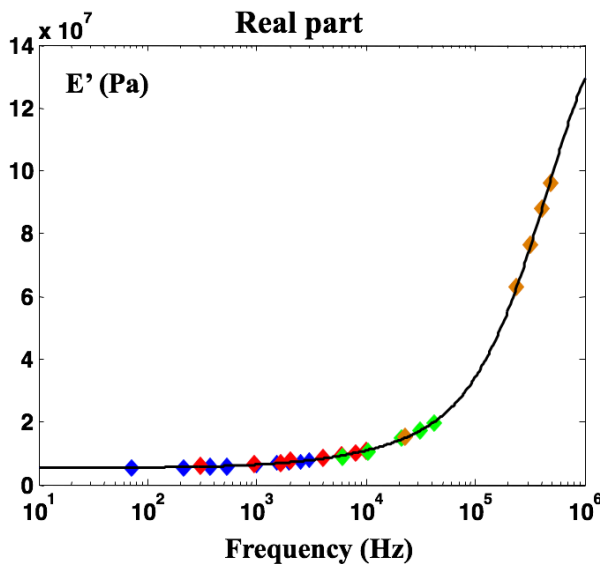
$$P = -K^* \left(\frac{\Delta V}{V} \right)$$

Young's (Bar) Modulus E^* $X_{11} = E^* S_{11}$



The laboratory core capabilities consist of two independent systems to measure the complex bulk and Young's moduli of materials. The typical measurement ranges for viscoelastic materials are:

- Frequency: 100 Hz to 5000 Hz
- Temperature: -2° C to 50° C
- Pressure: 0 to 300 psi (Young's) and 0 to 1000 psi (Bulk)



◆ 35°C ◆ 10°C
◆ 20°C ◆ -2°C