

Notes, Week of October 28, 2013

Notes

- Energy is stored in an object or system in several ways; for now we restrict our discussion to:
 - **Thermal Energy** – due to the motion of the particles.
 - **Phase Energy** – due to the arrangement of the particles in solid, liquid and gaseous phases.
Attractions lower the energy of a system;
 - *therefore, solids have the lowest phase energy because the particles are bound most tightly,*
 - *liquids have greater energy because they have more freedom of motion,*
 - *and gases have the greatest amount of energy*

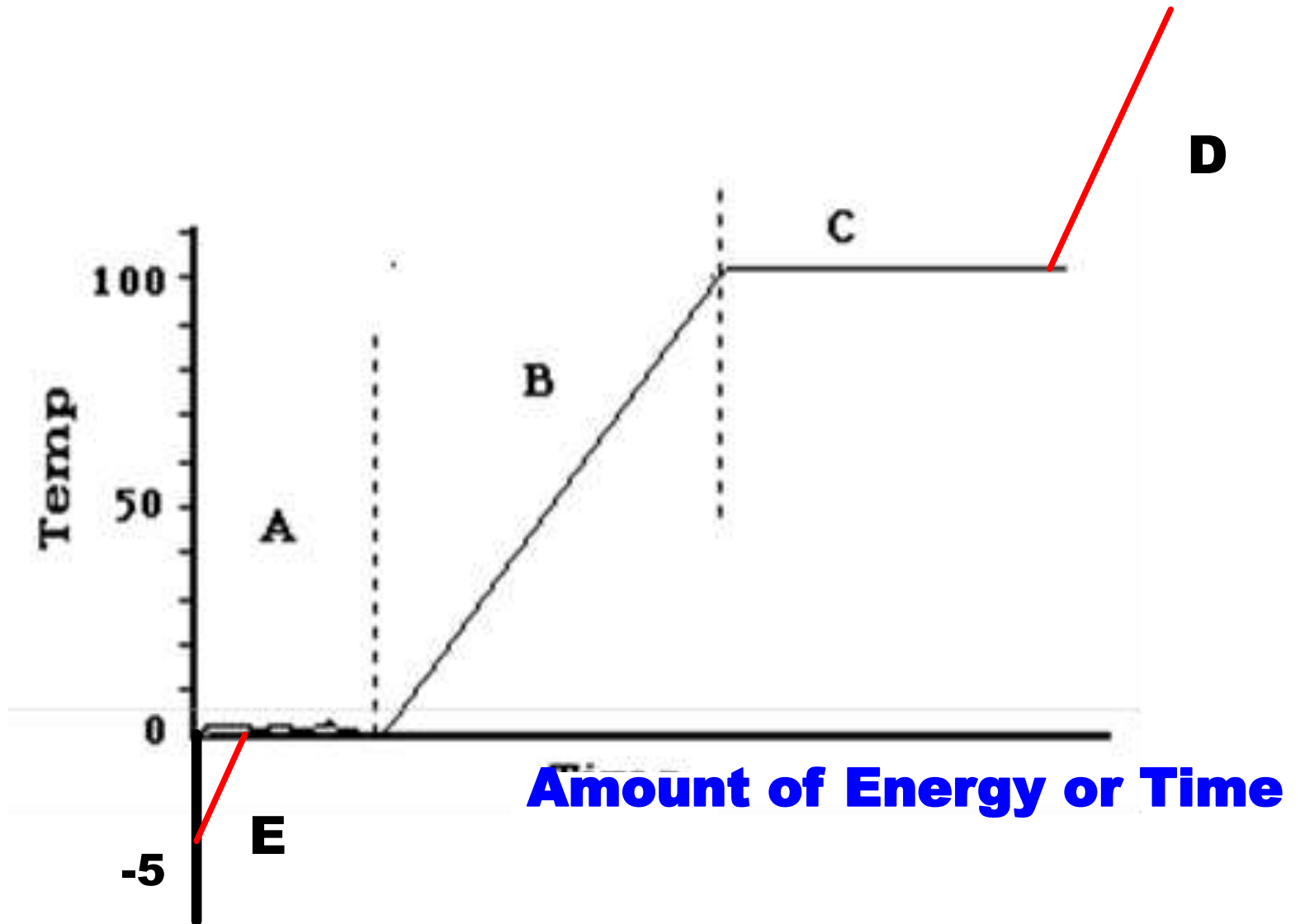
Notes

- Describe the **ways that energy is transferred** between the system and the surroundings.

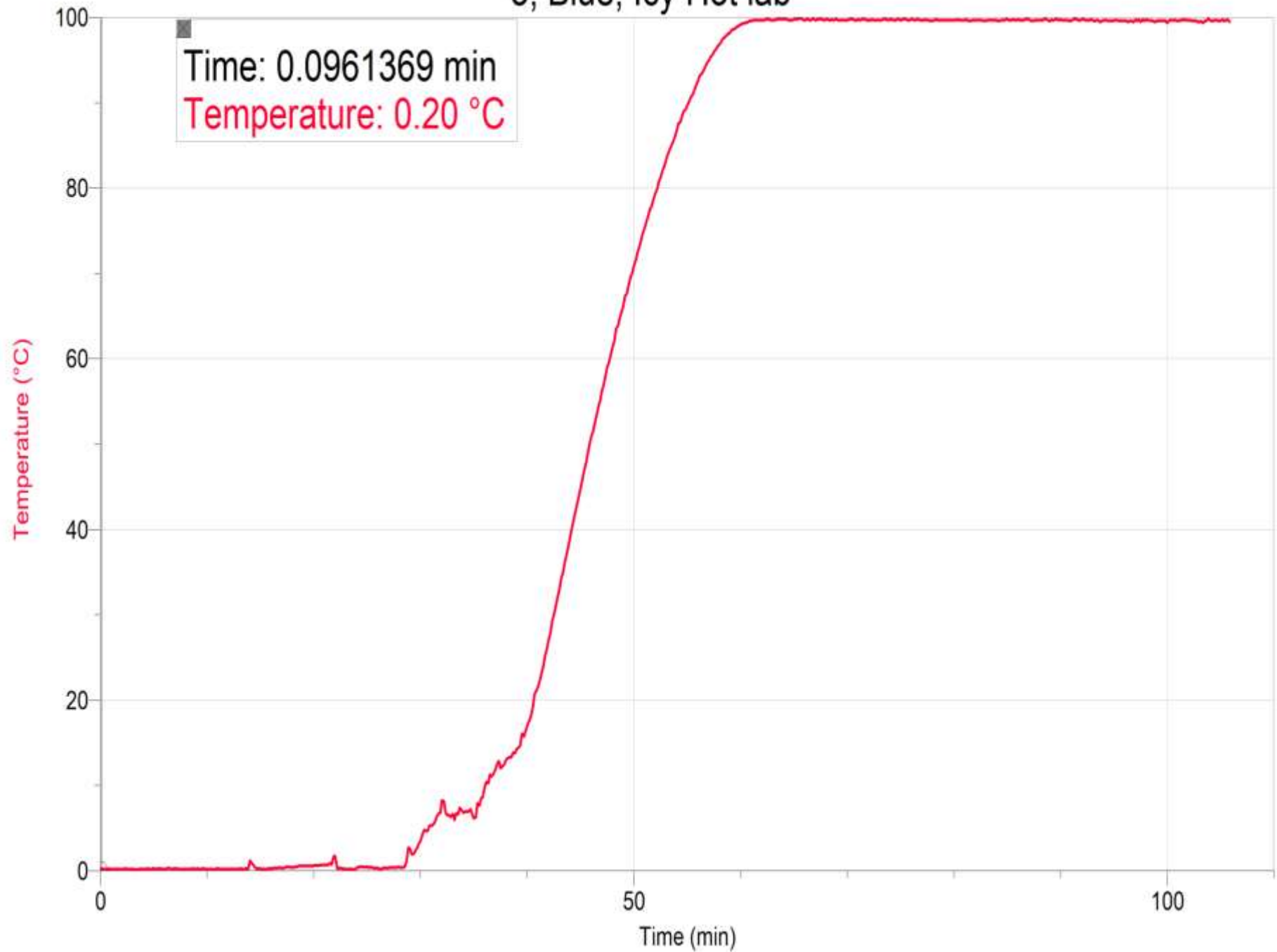
These are:

- **Heating** – transfer of energy through the collisions of particles
- **Working** – transfer of energy when macroscopic objects exert forces on each other
- **Radiating** – transfer of energy by the emission or absorption of light

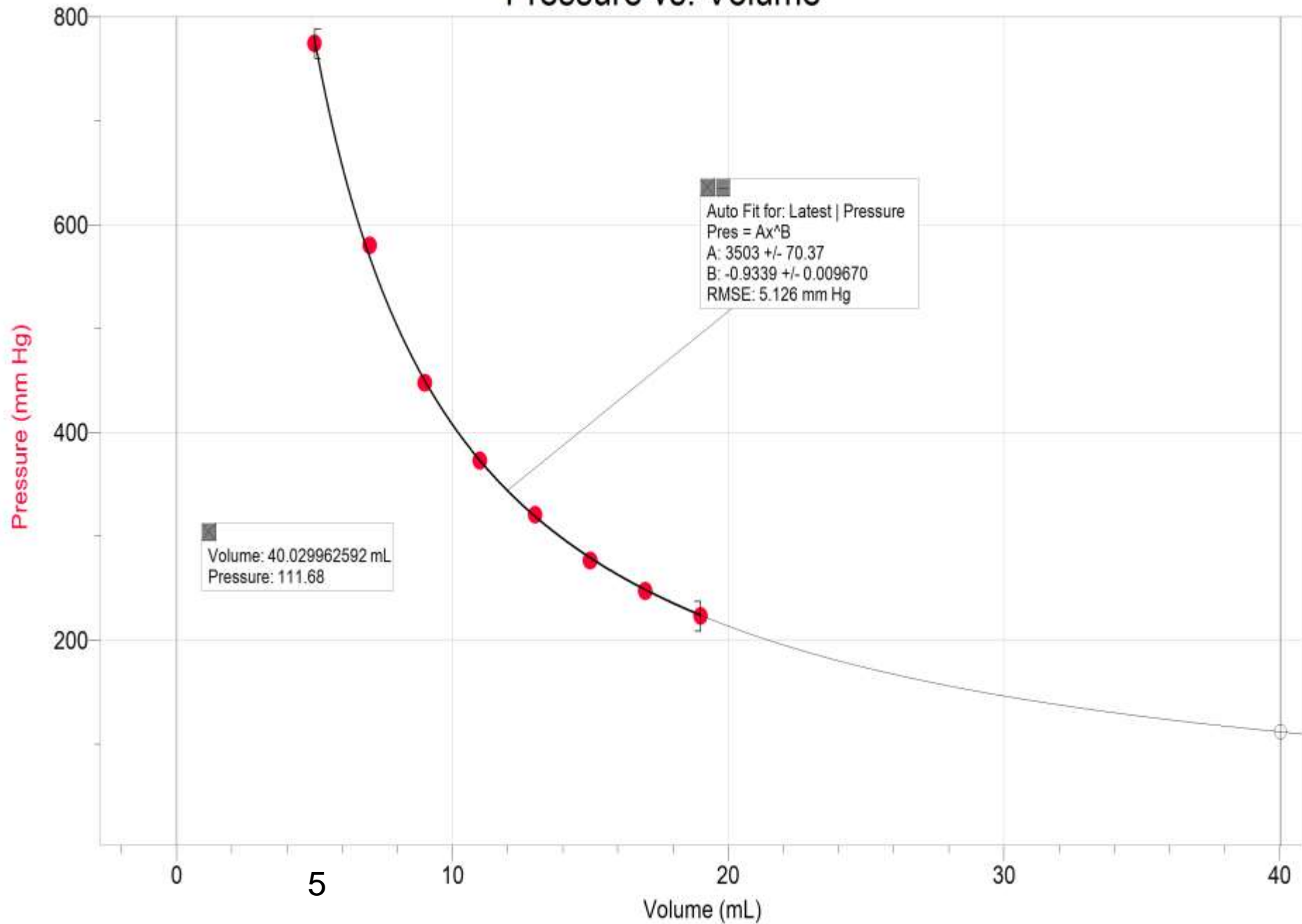
Heating Curve for Water



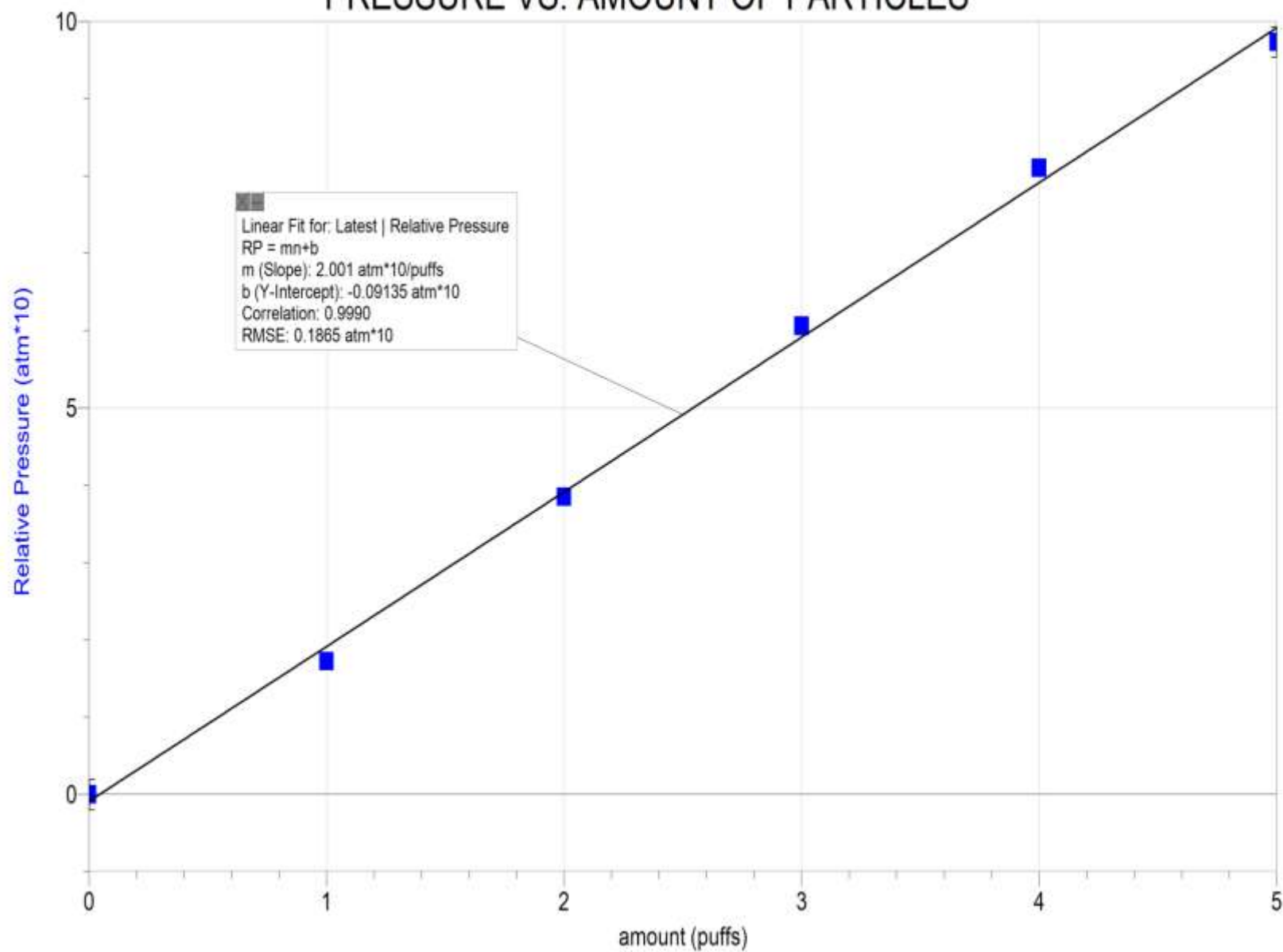
5, Blue, Icy Hot lab



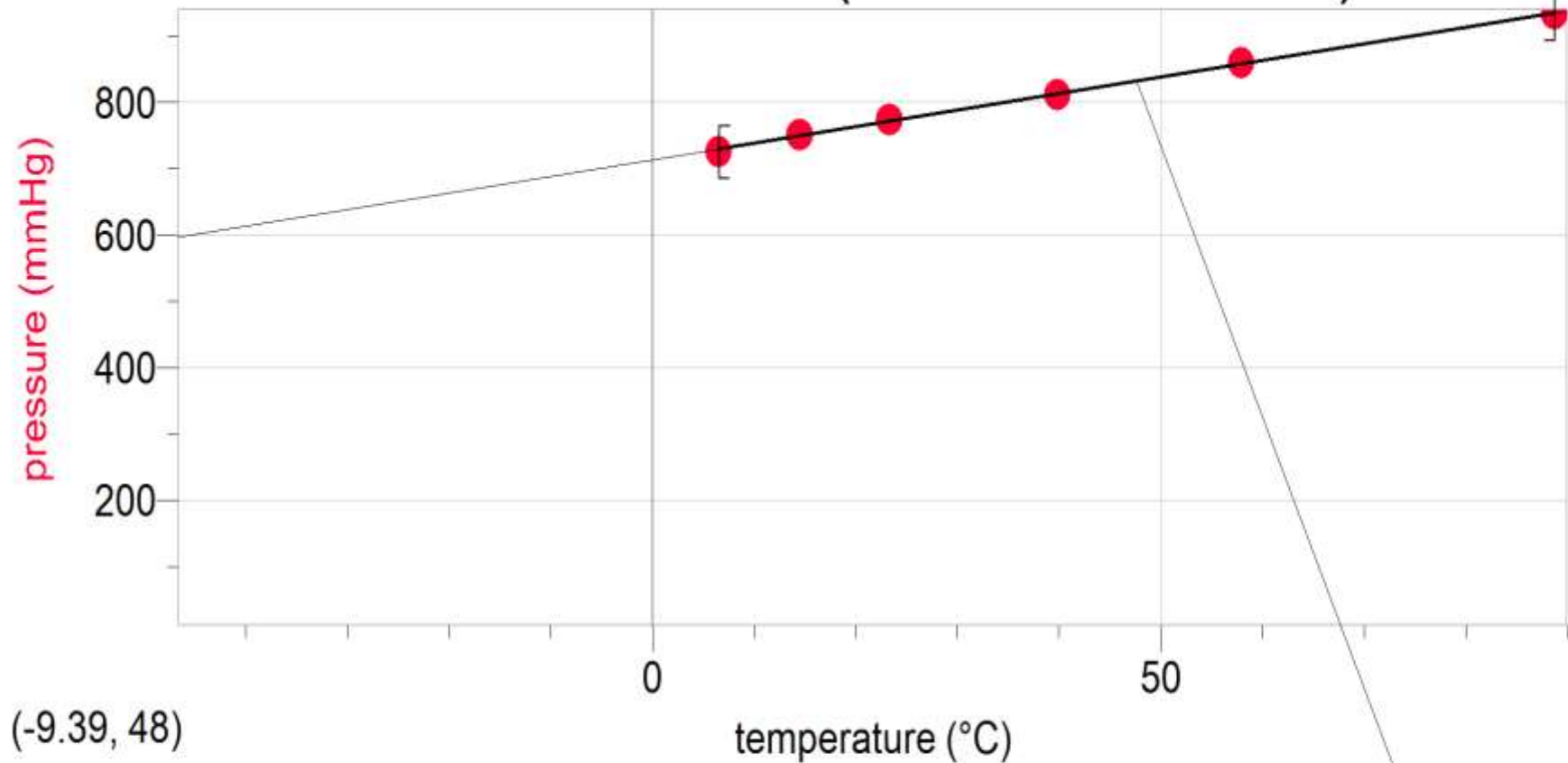
Pressure vs. Volume



PRESSURE VS. AMOUNT OF PARTICLES



Pressure vs. Volume (find absolute zero)



Linear Fit for: Data Set | pressure
 $P = mT + b$
m (Slope): 2.495 mmHg/°C
b (Y-Intercept): 713.3 mmHg
Correlation: 0.9995
RMSE: 2.802 mmHg