NAME-SANCHIT JAIN

ENROLL-21103192

BATCH-B-7

Physics Lab-2

Experiment-1

AIM:

1. The aim of the experiment is to verify Newton's Law of Cooling of different materials and different liquids.
2. To draw the cooling curve.

FORMULA USED:

$$T(t) = T_A + (T_H - T_A)e^{-kt}$$

T(t)=Temperature at time t,

TA=Ambient temperature

TH=Temperature of hot object at time 0,

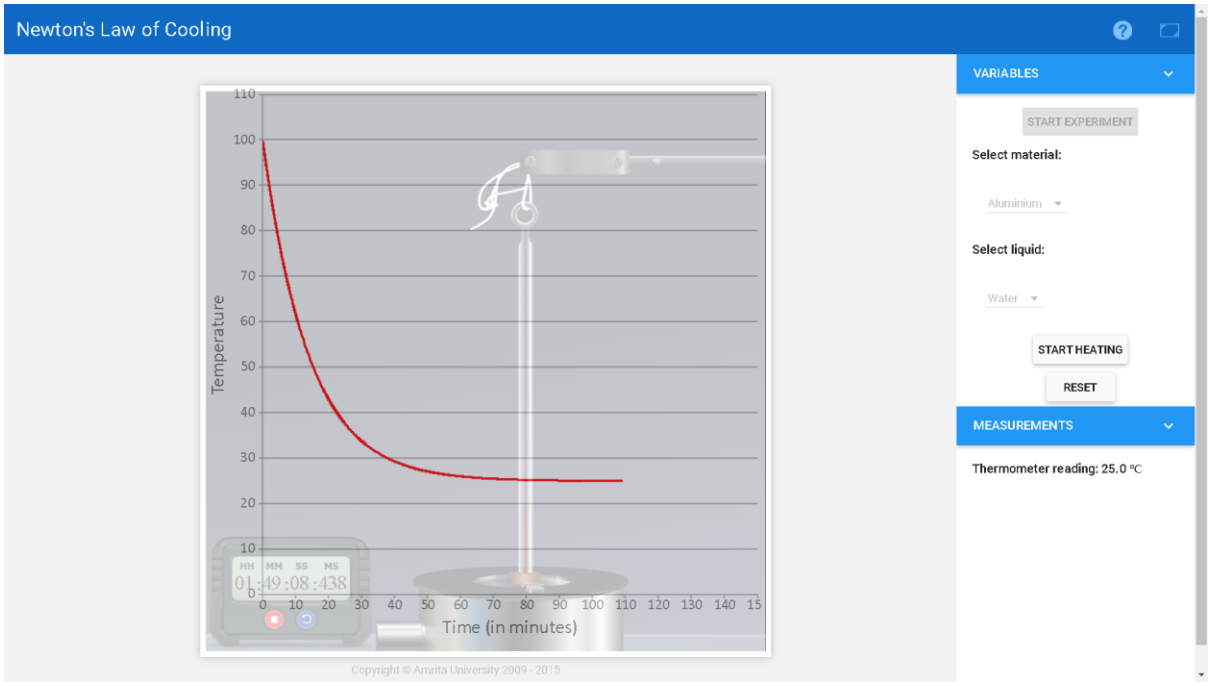
k=positive constant t=time.

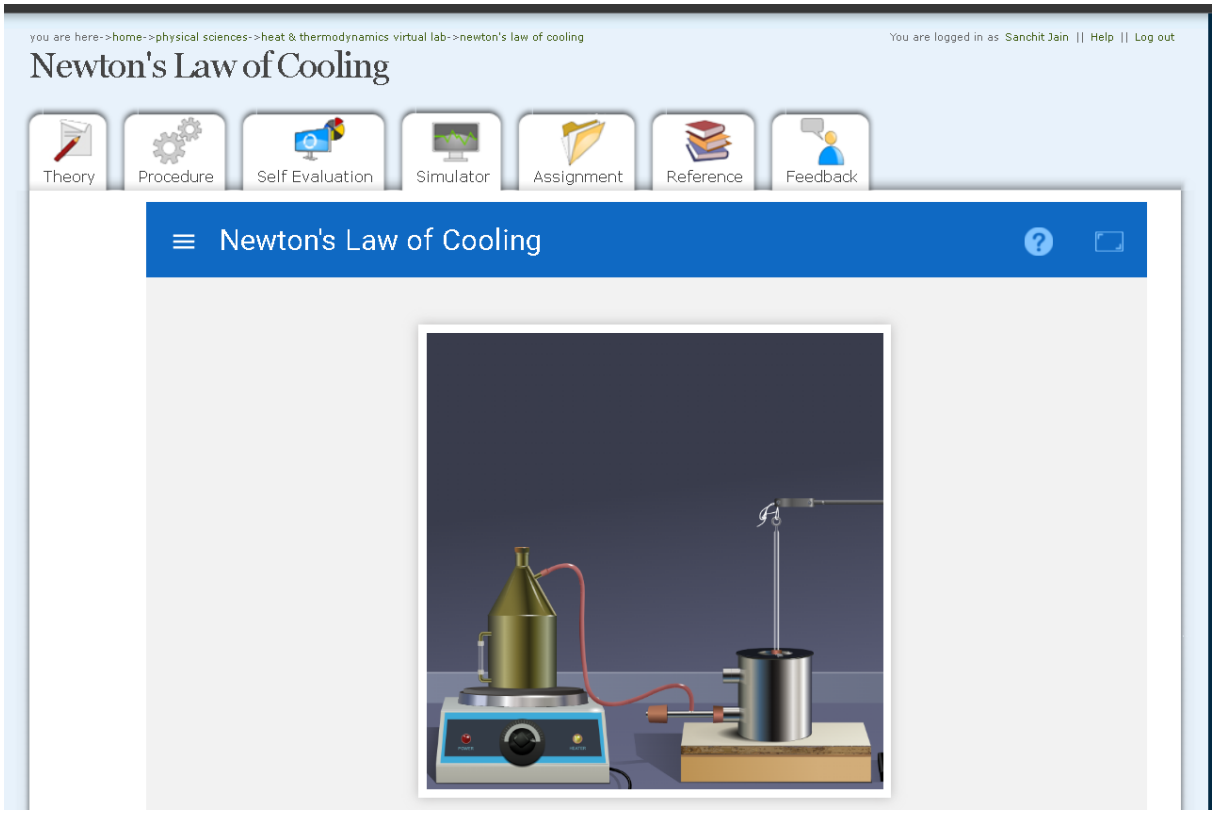
Observation Table:

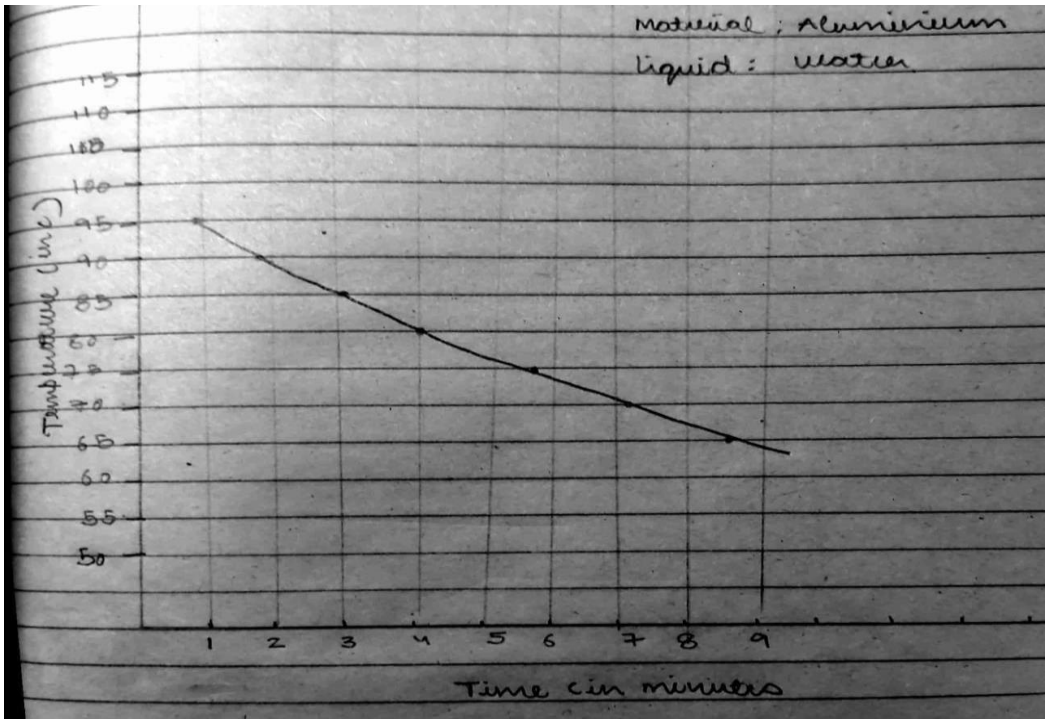
Material: Aluminium

Liquid: Water

S.NO.	TEMPERATURE(IN C)	TIME(IN M)
1	95	0.95
2	90	1.98
3	85	3.19
4	80	4.21
5	75	5.63
6	70	7.10
7	65	8.89


Newton's Law of Cooling
VARIABLES
START EXPERIMENT
Select material:
Aluminium
Select liquid:
Water
START HEATING
RESET
MEASUREMENTS
Thermometer reading: 25.0 °C
Temperature
Time (in minutes)
Copyright © Amrita University 2009 - 2015

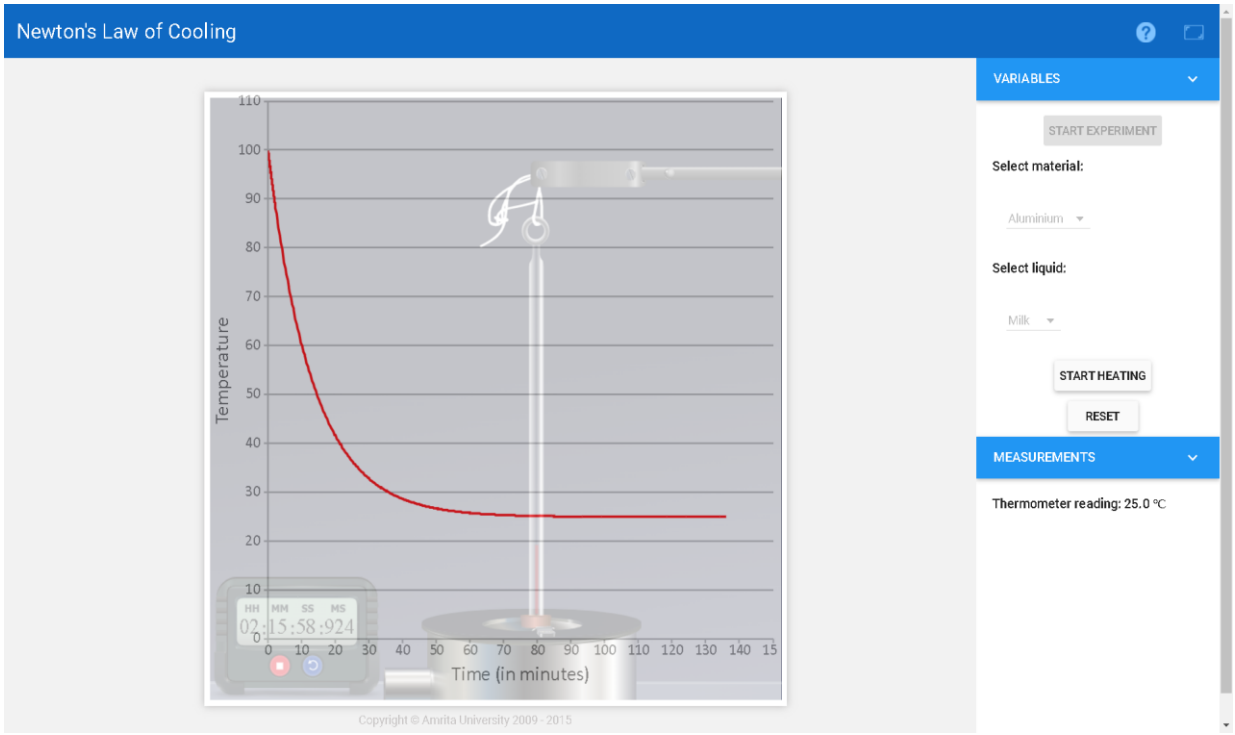

you are here->home->physical sciences->heat & thermodynamics virtual lab->newton's law of cooling
You are logged in as Sanchit Jain || Help || Log out
Newton's Law of Cooling
Theory
Procedure
Self Evaluation
Simulator
Assignment
Reference
Feedback
Newton's Law of Cooling

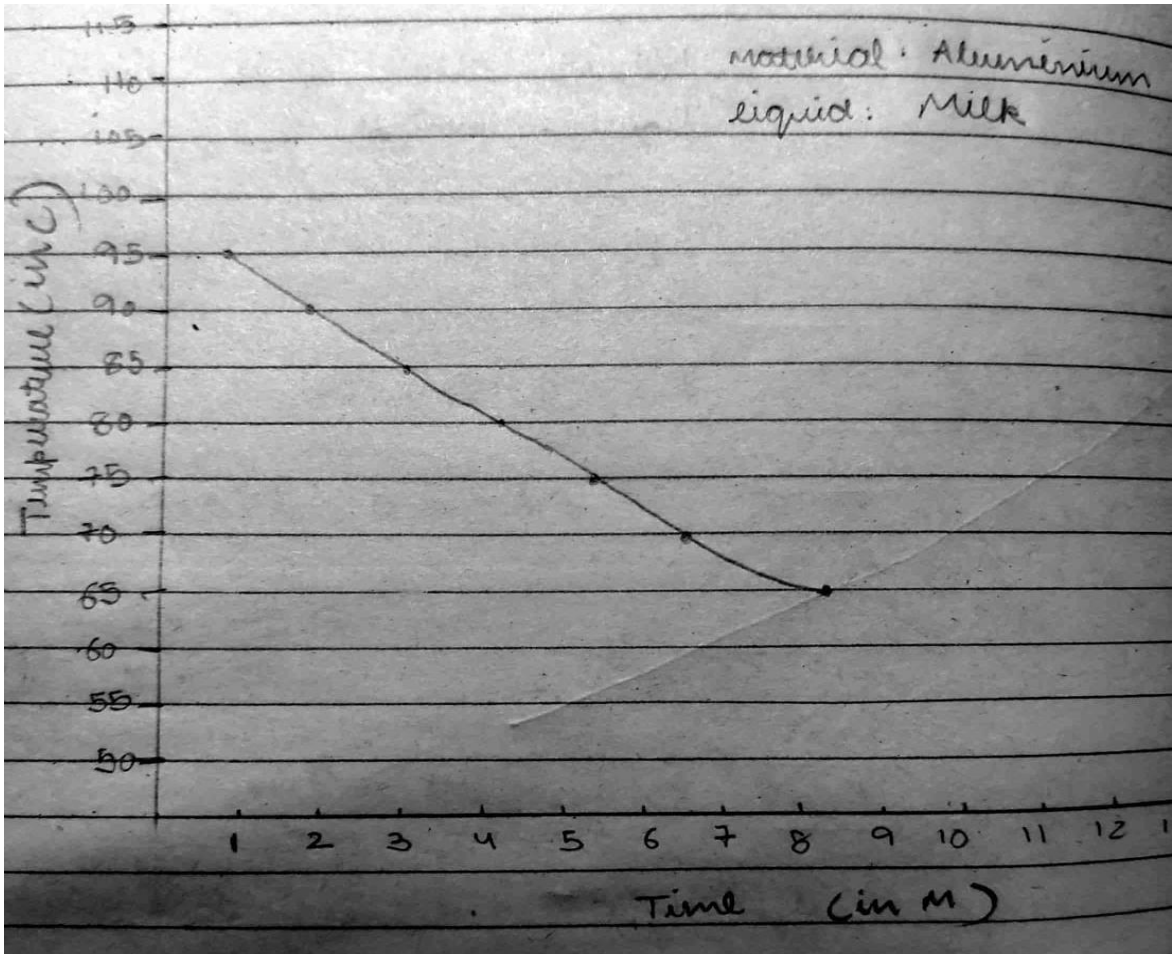


Material: Aluminium

Liquid: Milk

S.no	TEMPERATURE(IN C)	TIME(IN M)
1	95	0.883
2	90	1.866
3	85	2.88
4	80	4.19
5	75	5.41
6	70	6.61
7	65	8.23


Newton's Law of Cooling
VARIABLES
START EXPERIMENT
Select material:
Aluminium
Select liquid:
Milk
START HEATING
RESET
MEASUREMENTS
Thermometer reading: 25.0 ℃
Temperature
Time (in minutes)
HH MM SS MS
02:15:58:924
Copyright © Amrita University 2009 - 2015



Result:

From the Equation, we can say that Temperature decreases exponentially with time from the observation of the e-kt term. The cooling curve of the liquid is plotted. The temperature falls quickly in the beginning and then slowly as the difference of temperature goes on decreasing and we obtain an exponentially decreasing graph from the experimental values.

Hence Newton‘s law of cooling is verified.