Hanoi University of Science and Technology

School of Engineering Physics

LAB REPORT

For Electrics and Thermodynamics

**Experiment 6**

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**Experiment 6**

**DETERMINATION OF SPECIFIC HEAT RATIO OF AIR BASED ON CLEMENT DESORME'S METHOD**

**I. Experiment Motivation**

**-** To determine the specific heat ratio for air.

**II. Experimental Results**

**1. Measurement result:**

|  |  |  |  |
| --- | --- | --- | --- |
| H = 240mm | | | |
| Trial | L1 (mm) | L2 (mm) | = L1 – L2 |
| 1 | 355 | 297 | 58 |
| 2 | 356 | 296 | 60 |
| 3 | 354 | 298 | 56 |
| 4 | 355 | 297 | 58 |
| 5 | 354 | 298 | 56 |
| 6 | 355 | 297 | 58 |
| 7 | 356 | 296 | 60 |
| 8 | 356 | 296 | 60 |
| 9 | 357 | 295 | 62 |
| 10 | 357 | 295 | 62 |
|  | 355.5 |  |  |

**2. Calculation average value and uncertainly measuring**

The uncertain of L1:

ΔL1= s.d =

The uncertain of L2:

ΔL2 = s.d = 1.02

The uncertain of h:

Δh = = 1.44 (mm)

Hence:

**3. Calculation of heat ratio of air**

* The formula: γ =
* We have:

Hence:

1. **Theoretical result and comparison**

* The formula: γ =

Where is the Degree of Freedom of ideal gas (in this case is air), which mean . We got:

The theoretical result is a little higher than the directly measured result.