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 = 250mm | | | | |
| Trial | L1 (mm) | L2 (mm) | = L1 – L2 | γ = |
| 1 | 355 | 297 | 58 | 1.30 |
| 2 | 356 | 296 | 60 | 1.32 |
| 3 | 354 | 298 | 56 | 1.29 |
| 4 | 355 | 297 | 58 | 1.30 |
| 5 | 354 | 298 | 56 | 1.29 |
| 6 | 355 | 297 | 58 | 1.30 |
| 7 | 356 | 296 | 60 | 1.32 |
| 8 | 356 | 296 | 60 | 1.32 |
| 9 | 357 | 295 | 62 | 1.33 |
| 10 | 357 | 295 | 62 | 1.33 |

1. **Calculation of heat ratio of air**

We have:

We have the standard deviation:

= 0.02

The uncertainty of :

Hence:

1. **Theoretical result and comparison**

* The formula: γ =

Where i is the Degree of Freedom of ideal gas (in this case is air), which mean i=5. We got:

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