

THE PRINCIPLES OF THERMODYNAMICS

Ezahri M.^{1*}, Mançour billlah S.², Naciri Y.¹

¹*Materials and Environment Laboratory LME, Faculty of Sciences, Ibn Zohr University,
BP 8106, Cité Dakhla, Agadir, Morocco.*

²*Laboratory of process engineering Faculty of Sciences, Ibn Zohr University,
BP 8106, Cité Dakhla, Agadir, Morocco.*

**Corresponding author: m.ezahri @edu.uiz.ac.ma*

Classical thermodynamics studies are the laws that govern the transfer of energy. On the hand, it allows to evaluate the energy exchanged during a reaction and, on the other hand to study reaction evolution.

It is essentially based on two assumptions :

- **The energy** of the universe remains **constant**.
- **The entropy** of the universe **increases**.

These two compositions are respectively the bases of the first and the second thermodynamics principle.

The objectives of thermochemistry are :

- **To determine** the amount of heat involved during a reaction.
- **To Predict** if a reaction is thermodynamically possible under the same conditions,

According to the 3rd principle of thermodynamics, the entropy of pure substances, perfectly crystallized, is null, at zero absolute: ($S_i = 0$ at $T = 0$ K). This implies the existence of a perfect order at this temperature.

The application of this principle makes it possible to assign absolute entropy to all pure substance at a precise temperature.