

# Study of propylene like refrigerant in a cycle with absorption - diffusion

Nessrine SOLI <sup>\*1</sup>

*Department of Genius Chemical-Processes*

*\*UR11ES83.Environnement, Catalyzes and Analyzes Processes,*

*National school of Engineers de Gabès*

*Rue Omar Ibn El Khattab - Zrig - 6029 - Gabès, Tunisia*

[nesrine.soli.tn@gmail.com](mailto:nesrine.soli.tn@gmail.com)

**Abstract :** *The 21e conference of the United Nations on climate change (COP 21) was held in Paris from November 30th to December 11th, 2015. It should make it possible to lead to an international agreement on the applicable climate as from 2020, date of arrival in the term of the protocol of Kyoto.*

*Yamar Own way, in charge of program in Unep (program of the United Nations for the environment), declared: "In the field of energy today, more than 17 % of the consumption of electricity is devoted to the sector of the cold and air-conditioning. Any energy saving thus has an inevitable impact on the cold. Consumption also depends on the type and the quantity of the refrigerant used".*

*In this con text, we propose the study of propylene like refrigerant in a cycle with absorption-diffusion. It is about a refrigerating machine of low power (300 W).*

*Two mixtures were considered and compared while using a cooling with the level of the condenser and absorber by the ambient air with 35 °C. As inert gas, helium is used. The total pressure of operation is of about 17.5 bar. A simulation on suitable software was made for the two binary following the system propylene /hexane and propylene/heptane.*

**Key words - machine with absorption diffusion; Propylene; Hexane; Heptane, Helium.**