

Chapter 8

**WHY VAPOR PRESSURE OF A VOLATILE LIQUID
DECREASES BY ADDITION OF SOLUTES:
A NEW QUALITATIVE MODEL**

Hikmat S. Hilal^{1,} and Ali Cheknane²*

¹Department of Chemistry, An-Najah N. University, PO Box 7, Nablus, West Bank, Palestine

²Laboratoire d' Etudes et Développement de Matériaux Semiconducteurs et Dielectriques,
Université Amar Telidji de Laghouat, route de Ghardaia, BP 37G, Laghouat 03000, Algérie

ABSTRACT

While explaining vapor pressure lowering in solutions, many scholars mistakenly depend on rate of evaporation lowering, or on relative values of attraction forces between solvent and solute molecules. This is in spite of the correct explanations based on thermodynamics, as presented in physical chemistry references. Unfortunately, there seems to be no qualitative model available so far to explain vapor pressure lowering. The misconception is escalating, and an end needs to be made. A qualitative understandable model, to explain vapor pressure lowering, at least in solutions of nonvolatile solutes in volatile solvents, is needed. For this purpose, we propose here a *new qualitative model*, to explain vapor pressure lowering in such solutions. The new model is based on purely old thermodynamic concepts.

Keywords: Raoult's law, vapor pressure, ideal solution, entropy, rate of evaporation

* Corresponding author. Fax No.: +970-9-2387982; E-mail: hikmathilal@yahoo.com

