

Introduction of reporter

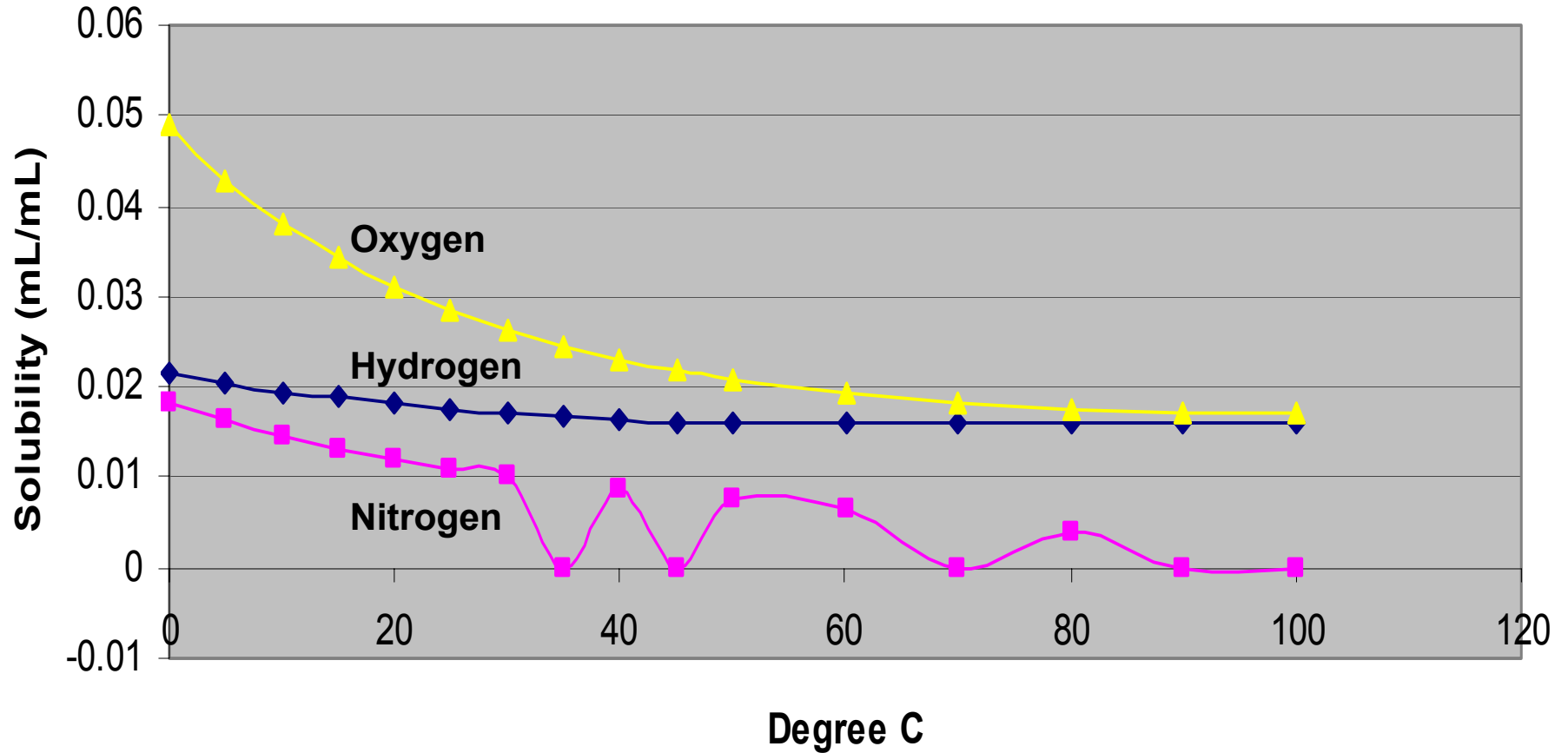
- Borned: 1952 in Vietnam
- Education:
 - 1969-1975: Physical Chemistry in Kishinev State University (former USSR)
 - 1990-1992: PhD in Adsorption & Catalysis in Hanoi University
- Since 1975: Lecturer and Researcher in HU
- Since 2000: HU Center for Environmental Technology and Sustainable Development (CETASD)

Proposal for ISS experiments:

Gas solubility in NG condition

- Air, especially Oxygen, plays the key role in living functions
- Target solvents:
 - Water
 - Organic Solvents
- Consequences, Application

Gases solubility in water



The first consequence:

What happens if we boil water?

Air bubbles forms, and because air density is less than that of water the bubbles rise.

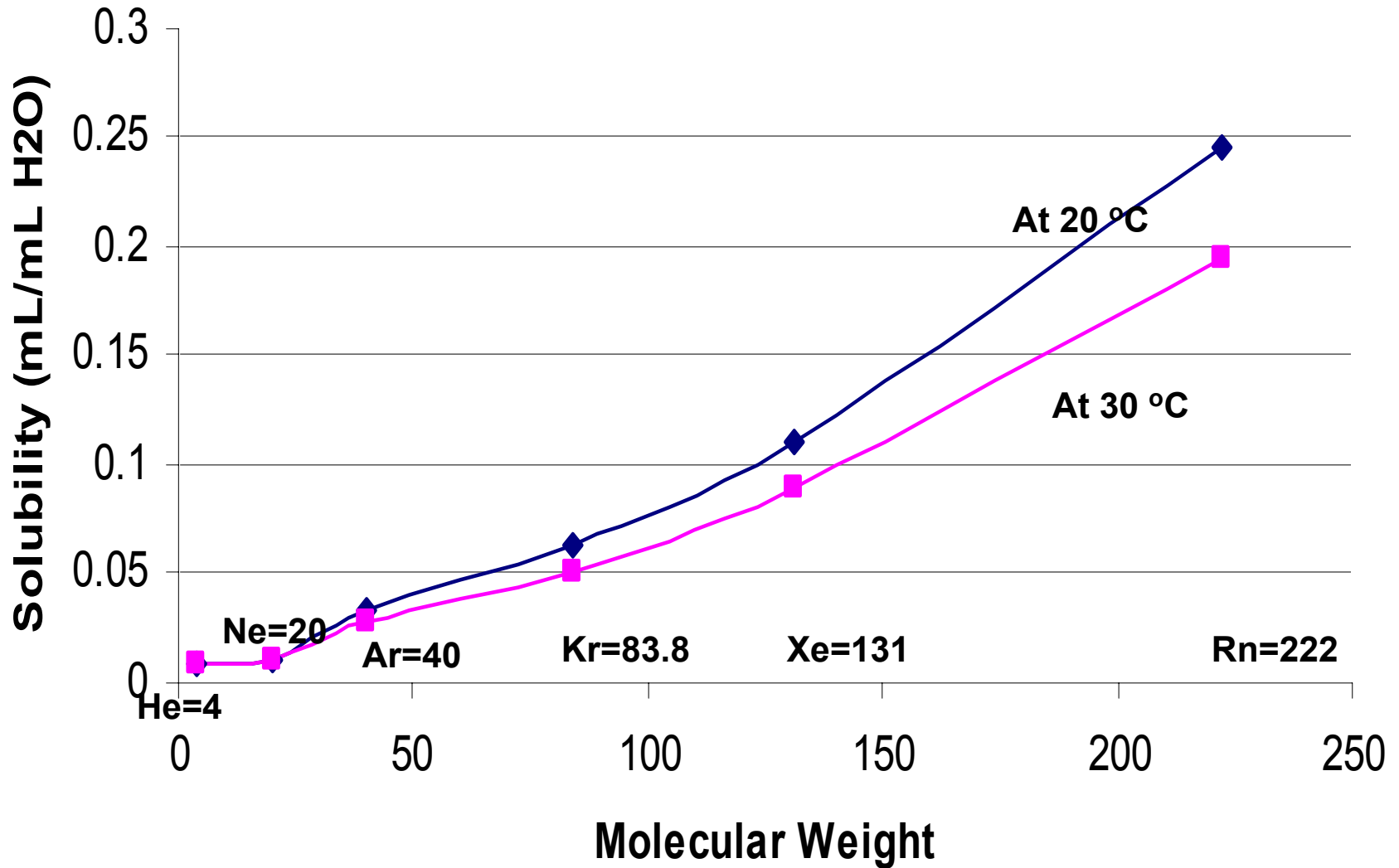
What happens if we conduct the same action in NG condition, that means no difference in densities?

How are air bubbles separated from water?

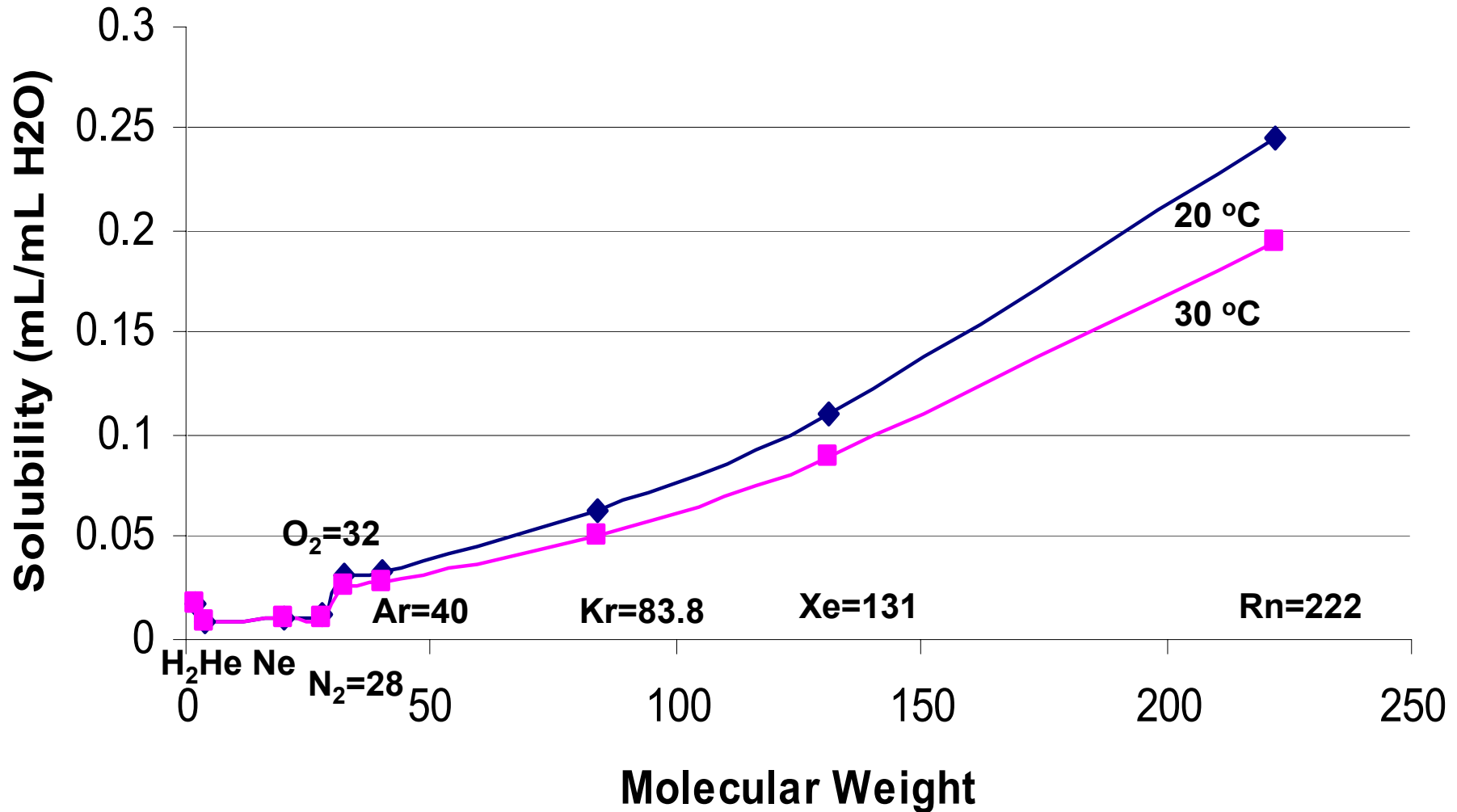
What happens with the solubility during heating?

The effect of NG must be more obvious if we use noble gases instead of oxygen

Gases solubility in water

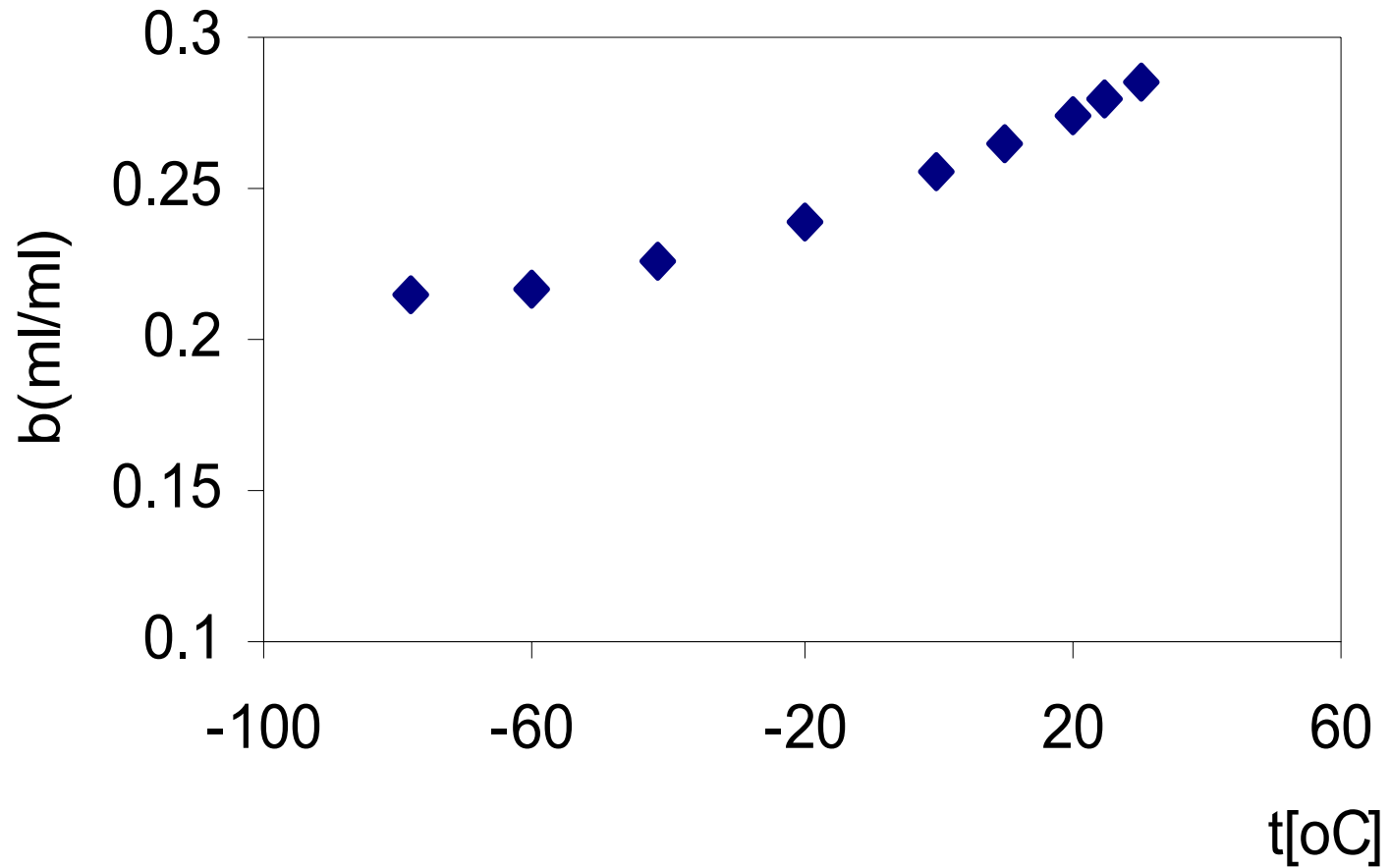


Gases solubility in water

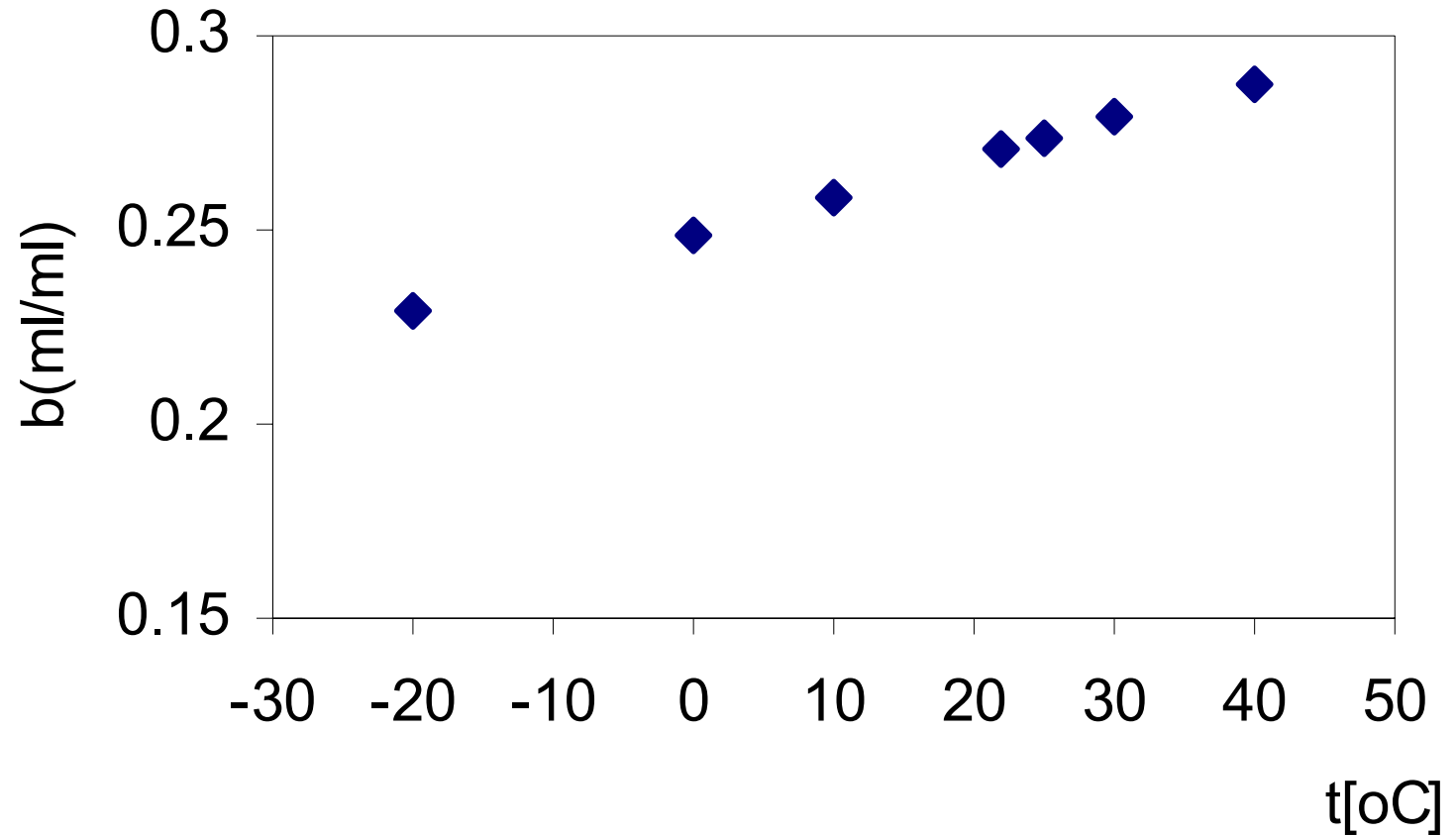


It is more interesting if we replace water by organic solvents

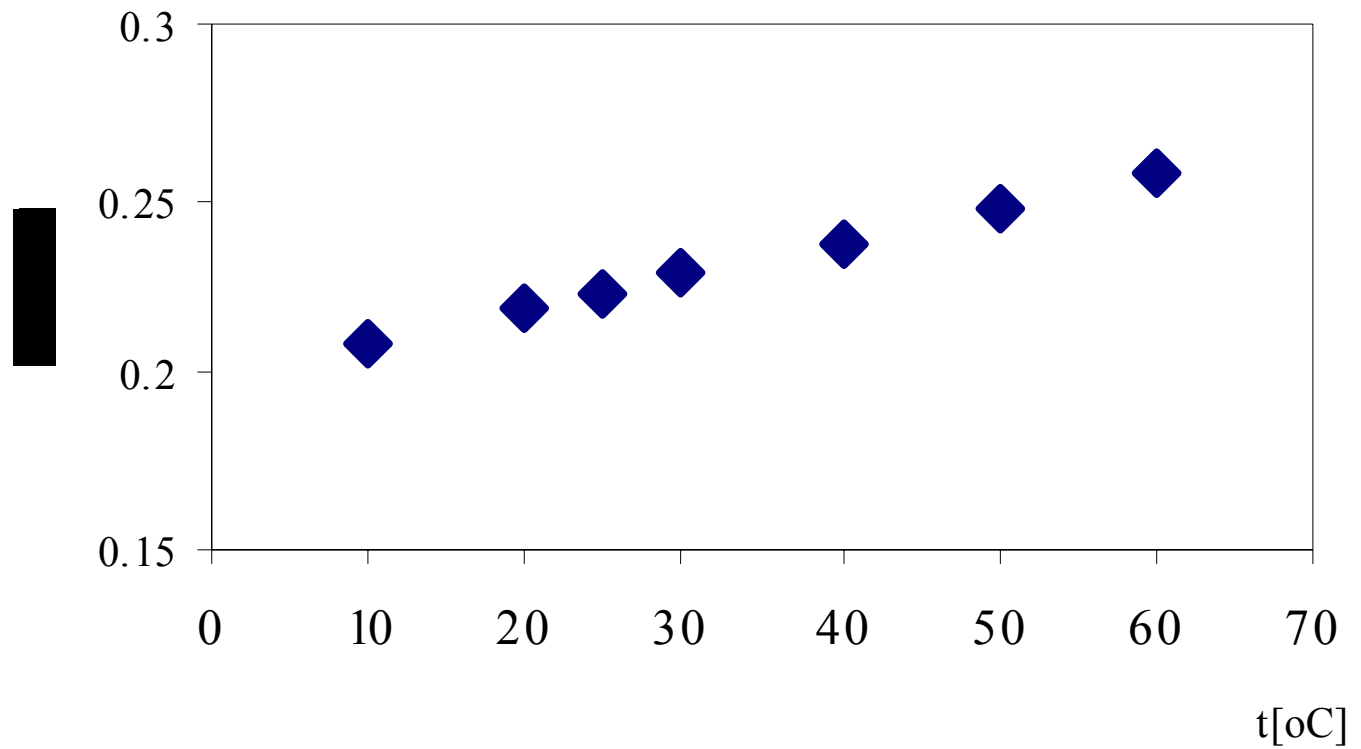
O₂ in acetone



O₂ in methyl acetate

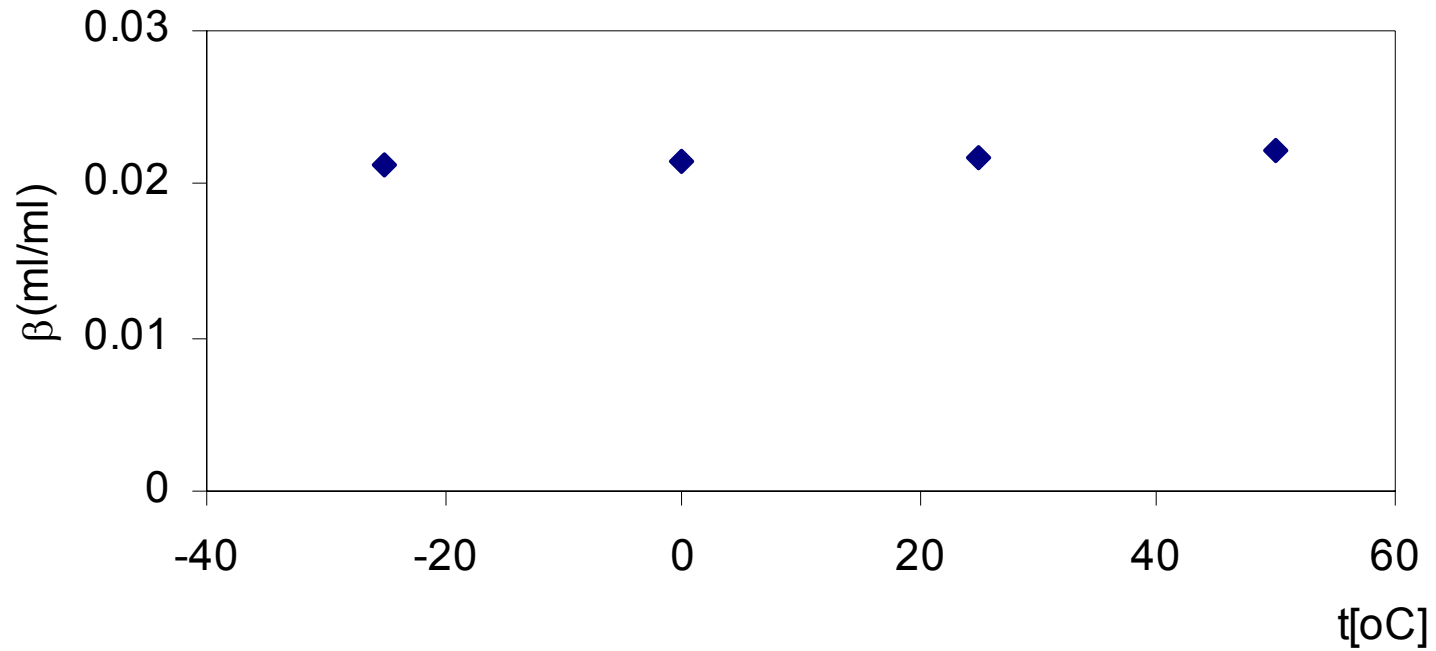


O₂ in benzen



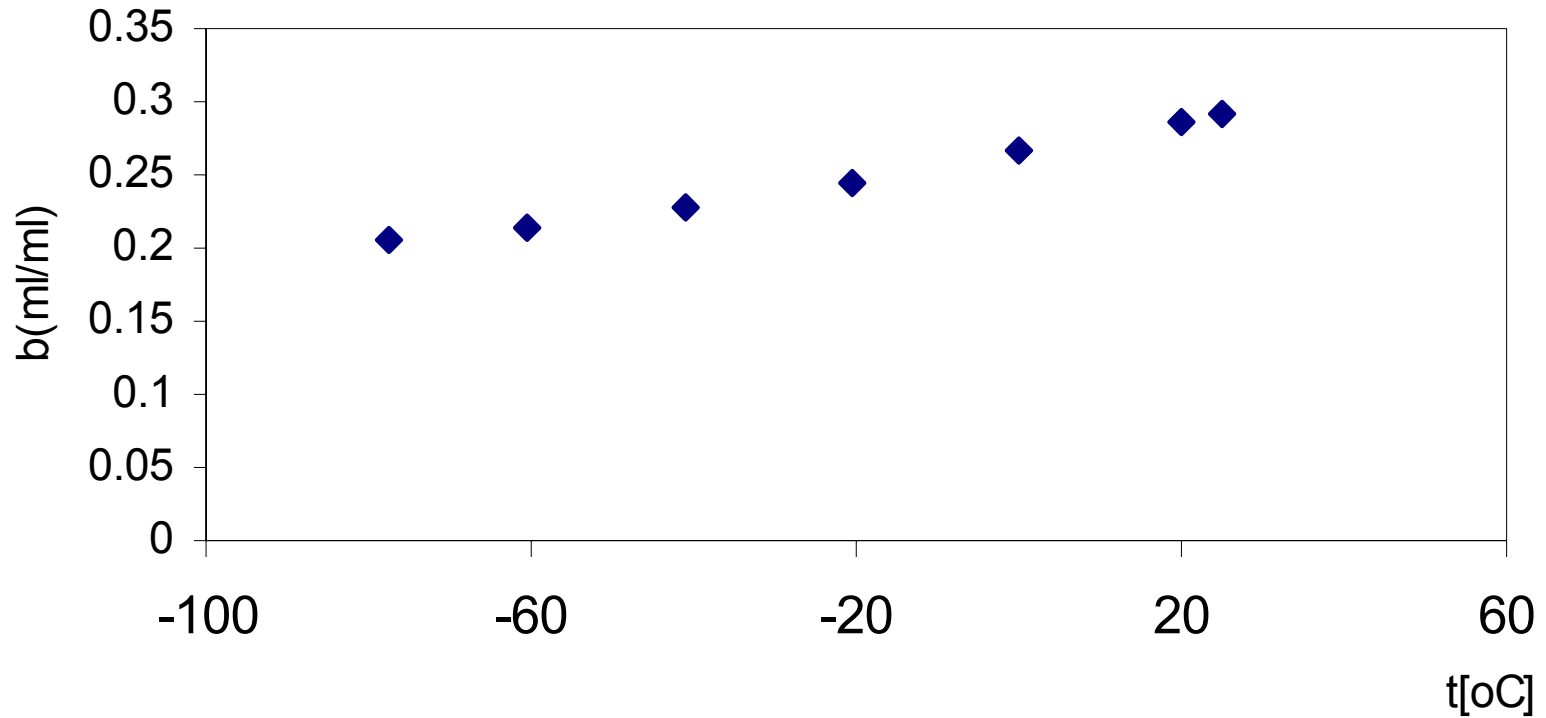
N₂ in alcohols

Ethanol



N₂ in Ether

Ethyl ether



The expected consequences-Application

- If air bubbles are difficult to be separated from water, then how does this phenomenon influence on the work of pumps, head loss created by water flow in water pipes?
- What influence of gas solubility change in water surface tension?
- Then, what about capillary action? And membrane separation processes?
- In the case of making oxygen from water by electrolysis/or by what ever how to separate water from oxygen gas?