The Prospective Use of FTIR and Surface Tension in Measuring Concentrations

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Goal
Provide evidence that Fourier transform infrared (FTIR) spectroscopy and surface tension can be used to confirm a mixture's concentration.

Approach

Materials
- Pure Oleic Acid (OA)
- Pure Hexane (HXN)
- Pure Acetonitrile (ACN)
- OA/HXN
- OA/ACN

FTIR

Surface Tension

Results

Success!
Calibration curve created for FTIR.
Preliminary calibration created for surface tension.

Application - Extraction

Discovery!
Two phase region B between single phase regions A. Confirmed after the fact by source in 1952 [2].

Success!
Tracked OA concentrations in each phase.

Future Work
The results show promise for a continuation in an independent study for Fall 2023.

References