

## Density measurement with the vibrating tube densimeter at high pressure

오경실, 배 원, 김화용\*  
서울대학교 응용화학부  
(hwayongk@snu.ac.kr\*)

A reliable knowledge of the P- $\rho$ -T behavior of pure compounds and mixtures is of great importance in many fields of research as well as in industrial practice. The densities of fluids as a function of temperature and pressure are particularly important for the design of industrial plants, pipelines, and pumps.

The aim of this work was to calibrate Anton Paar DMA 512P vibrating tube densimeter. This remote cell is a special type for density measurement under high pressure (up to 700bar) and temperature (up to 420K). Calibration was performed with nitrogen and water as reference fluids at temperature from 313K to 363K, and pressure up to 300bar. And The density carbon dioxide and dimethyl ether were measured to show the validity of the calibration equation, which correlated oscillation period and density.