HFC-152a + Prapane 혼합냉매의 기-액 평형에 관한 실험적 연구

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Vapor-Liquid Equilibrium for 1,1-Difluoroethane (R-152a) + Propane (R-290) Refrigerant mixtures

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Key Words: interaction parameter, propane, R-152a, refrigerant, vapor-liquid equilibrium

Abstract : The equilibrium data of binary systems 1,1-Difluoroethane (R-152a) + Propane (R-290) were measured. Forty-Five equilibrium data for 1,1-Difluoroethane (R-152a) + Propane (R-290)system were measured over the temperature range 273.15~313.15 K at 10 K interval and the composition range 0.2~0.8, respectively. Vapor-liquid equilibrium data were calculated by using equation of state and compared with the present data. CSD, PR, RKS, equation were used as equation of state. We found positive homoazeotropes for 1,1-Difluoroethane (R-152a) + Propane (R-290) at a composition x_1=0.73.

광열편향법을 이용한 단층 및 복층재료의 열전도 측정

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The Measurement of Thermal Conductivity for the Single and Bi-layer Materials using Photothermal Deflection Method

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Key Words: Photothermal Deflection(광열편향), Photothermal Effect(광열효과), Thermal Conductivity(열전도), Non-contact Method(비접촉식),

Abstract : In the present study, using photothermal effect, the photothermal deflection method is applied to measure the thermal conductivity of bulk and thin film metals. The experimental setup is equipped much more accurately than the previous photothermal deflection methods in the view of optical alignment. The used specimens are the pure and bulk metals with the purity over 99.98%, the thin film metal deposited in fused silica, and the oxide thin film deposited in silicon wafer. The difference of thermal conductivity between thin film and bulk of same material is shown within 2% when the thin film materials are optically thick. When the thin film is optically thin, it is difficult to measure it. However, the thermal conductivity of the p and n type silicon wafer used as the substrate can be measured, which has not existed previously.