

Abstract

The efficiency of Joule-Thomson (JT) coolers can be significantly improved by using a gas mixture instead of a pure gas. However, the application of gas mixtures in sorption compressors is seriously hampered by the selective adsorption and desorption behaviour of the mixture components. In order to study the dynamic sorption behaviour the composition of the gas-flow delivered by such a sorption compressor must be studied. Here a setup is present to accurately determine the composition of a binary mixture delivered by a sorption compressor as it flows from the high to low pressure side. This is accomplished by correlating the outputs of a Coriolis and a thermal flow sensor, and actively compensation for variations in the specific heat of the mixture components due to non-ideal behaviour.