# Effect of the Process Parameters in 4-bed Pressure Swing Adsorption

양세일, 박주용, 장성철, 최도영, 최대기*, 김성현[1]
한국과학기술연구원; [1]고려대학교
(dkchoi@kist.re.kr*)

It is well known that more than three adsorption beds in the pressure swing adsorpiton (PSA) processes are requried to efficiently separate gaseous impurities from hydrogen mixture. The separation efficiency in such processes depends on various kinds of parameters including the feed pressure, the regeneration pressure, the cycle step, the cycle time, the dimensions of the adsorption beds, the system temperature. Three kinds of processes with different cycle time and cycle step are experimentally set up and then compared. The first is 4-bed 9-step PSA process where a product storage vessel was installed at the product end from which the product backfill gas was supplied, based on the Batta cycle. The second process utilized a short cycle time compared to the first, which is called as rapid cycle PSA process. Different from two above-mentioned processes, the final one, 4-bed 10-step PSA process, did not contain the product storage vessel since the backfill gas of one bed is supplied from product gas of another bed. We will present the results obtained using such PSA processes.