

WEEK 24

PRESENTER

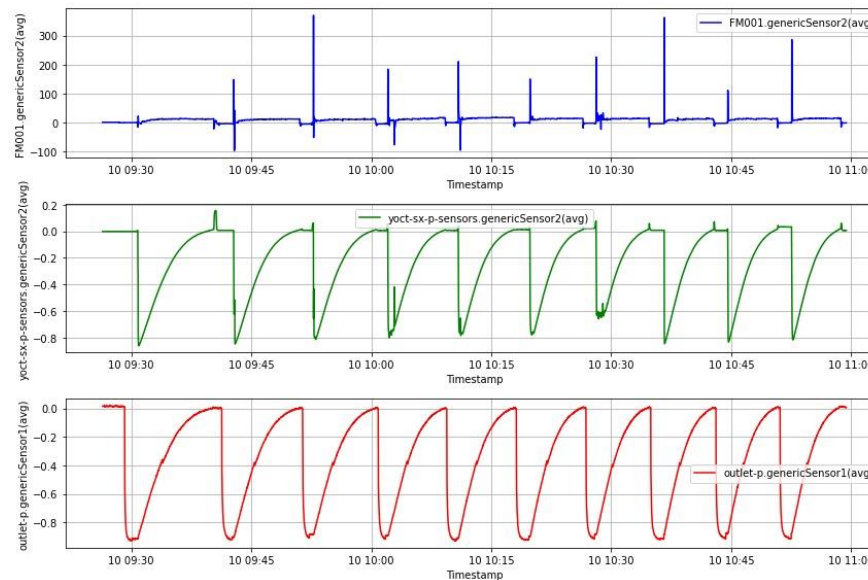
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Goal

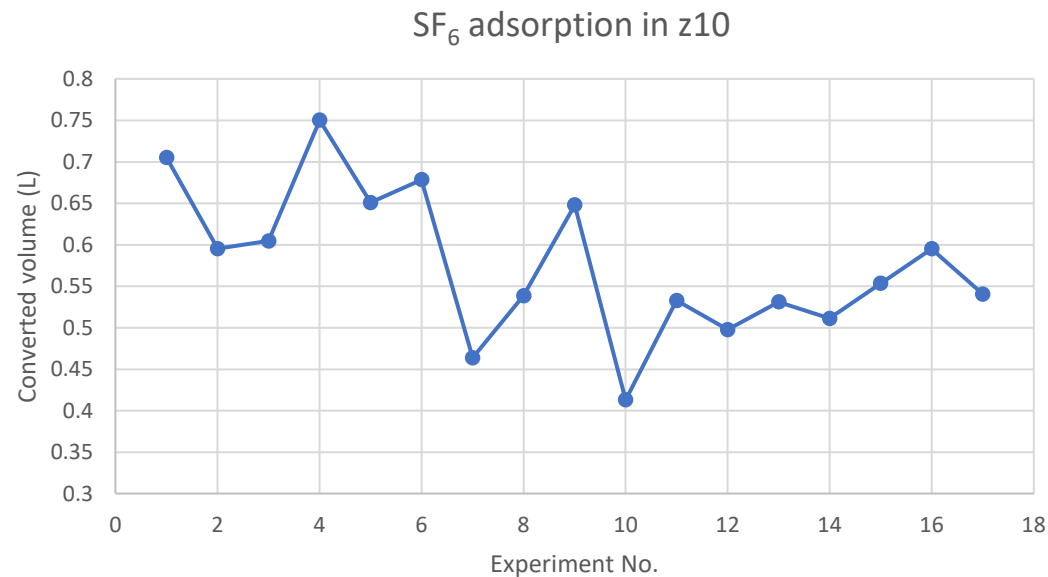
- Using the gas loading difference in terms of volume, between SF₆ and R134a to recover SF₆.
- To measure the volume of gas adsorbed in different molecular sieves, several experiments for SF₆ adsorption in molecular sieves z10 and z5 were done.

Experimental design

- Conditions
 - Flowrate: 10L/h calibrated in air (conversion factor ~ 2.3) at room temp with gas supply pressure 0,5 barg
- Procedures (with cycles)
 - Using vacuum pump to keep the cartridge nearly vacuum
 - Insert SF_6 with gas supplier
 - As the pressure of the cartridge increases to 0 barg, stop inserting gas, and turn on the vacuum pump



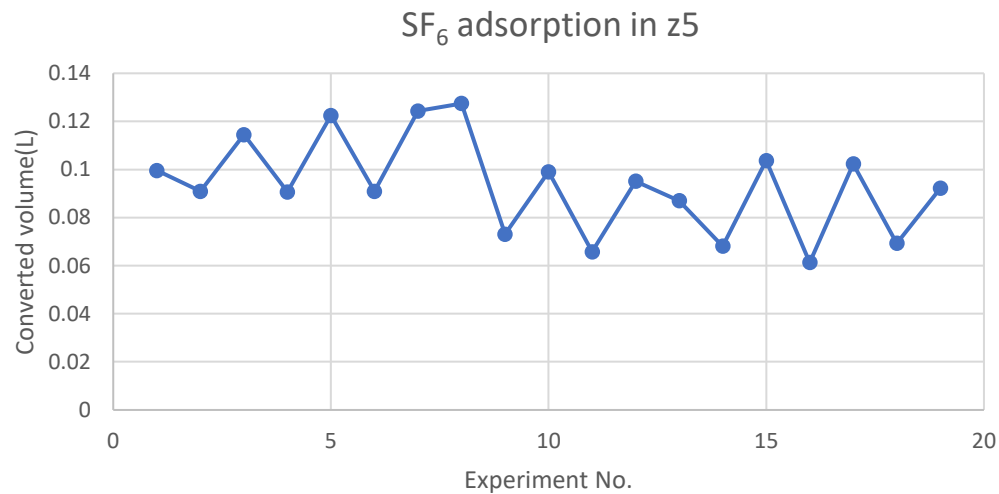
Results (z10 experiments)



- Within first 10 experiments, the volume of SF₆ decreases → some SF₆ are adsorbed in the molecular sites of the sieve
- After the 10th experiment, the volume of SF₆ remains nearly constant → the adsorbent is saturated

Converted volume = Volume measured by the flowmeter calibrated in air/ conversion factor

Results (z5 experiments)



- Since z5 has smaller effective pore opening (5Å) which is smaller than the kinetic diameter of SF₆, the volumetric flowrate of the SF₆ decreases.
- The decrease of the volume is not significant, therefore, more experiments are needed