Purification of flue gases by swollen TFC membrane

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A stricter legislation in the field of gas purification might be a defining element which technology would be used. This increasing pressure has to do with Directive 2010/75/EU - Industrial emissions. This general framework should avoid pollution shifted from one medium such as air, water and land to another. Above mentioned legislations rapidly increase the investment costs across the industry especially for desulfurization technologies. The research and design of new separation technologies is necessary. Membrane processes seem to be very promising and powerful purification technology to separate SO_2, CO_2 and NO_x contained in flue gases. In comparison with classical industrial processes, the membranes technology offer low cost, high efficiency and energy saving. Our project is based on application of water-swollen thin composite membranes developed at ICPF Czech Republic. The unique lab-scale separation unit was designed to achieve superior experimental data (Fig. 1). As can be seen on Fig 2. we are able to decrease by this method the content of SO_2 in flue gas significantly.

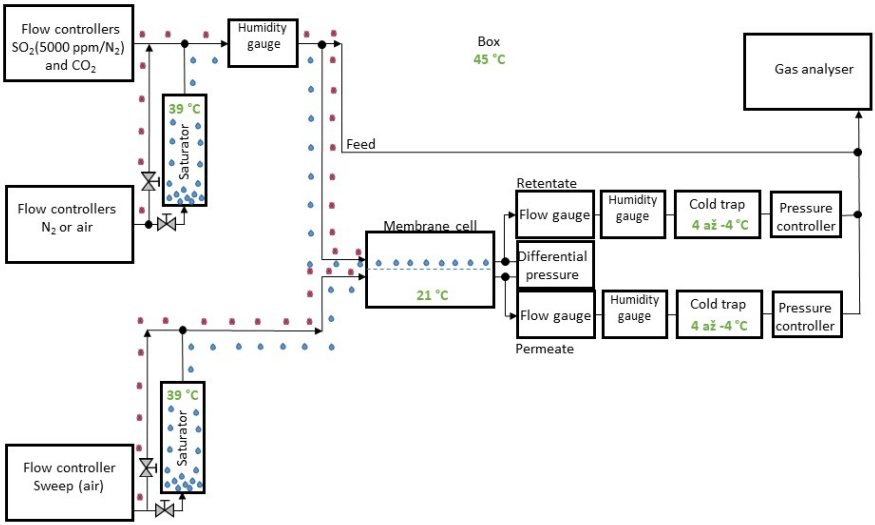


Figure 1. Scheme of the gas permeation apparatus

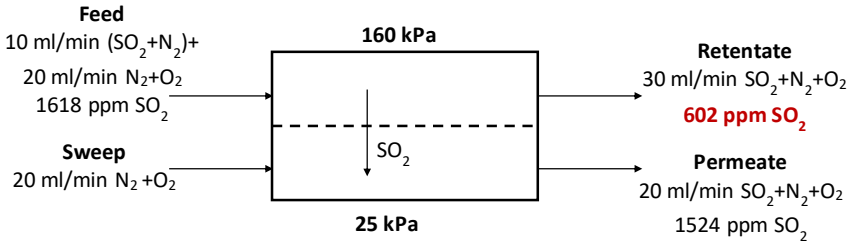


Figure 2. Schema of the separation

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