

Performance of facilitated transport membranes containing SPEEK-AgNO<sub>3</sub> for isoprene/*n*-pentane separation

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The facilitated transport membranes with sulfonated poly(ether ether)ketone (SPEEK)-AgNO<sub>3</sub> is based on complexes between silver ions and olefin, these membranes were prepared and tested for separation of olefin/paraffin. The facilitated transport membranes showed high selectivity of isoprene over *n*-pentane and long-term stability. Depending on various reaction conditions, the degree of sulfonation (DS) of SPEEK was measured by <sup>1</sup>H NMR spectroscopy. In the membranes containing SPEEK-AgNO<sub>3</sub>, the performance of the membranes was affected by the DS of SPEEK. As the DS of SPEEK was increased, the selectivity of isoprene over *n*-pentane was increased and the stability of that was continued.