

Anomalous Molecular Infiltration in Graphene Laminated

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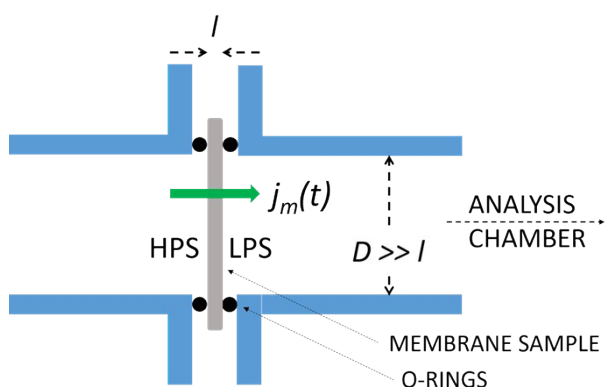


Fig. SM1 : Schematic picture of the sample holder. Vacuum sealing of the membrane sample is ensured by O-rings. $j_m(t)$: permeation flux, D : membrane diameter, l : membrane thickness. In the presents sample set-up, $D \gg l$ and the penetrant transport process can be described in a 1-imensional geometry as edge effects can be neglected, see ref. 13 in the manuscript.

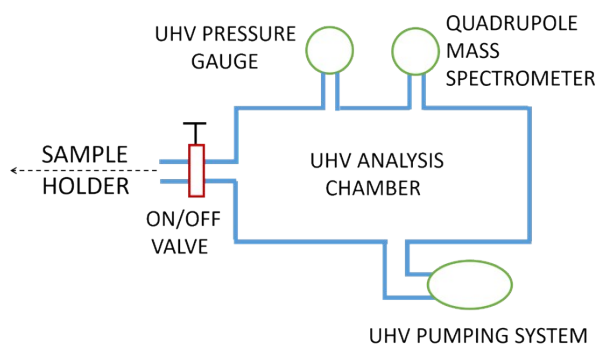


Fig. SM2 : Schematic picture of the experimental apparatus. Only the most important components are shown. In the permeation process, the permeation flux through the membrane sample, $j_m(t)$, gives rise to the increase of the penetrant partial pressure $p_{LPS}(t)$ which is measured, as a function of time, by the calibrated QMS. The transport process is monitored under continuous pumping conditions of the analysis chamber.

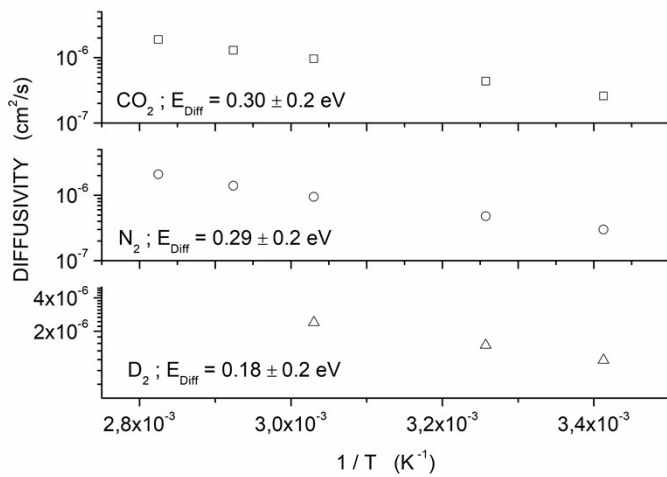


Fig. SM3 : CO₂ , N₂ and ²H₂ diffusivity values in the Low Density Polyethylene support. In the inset we report the activation energy values for penetrant diffusion.

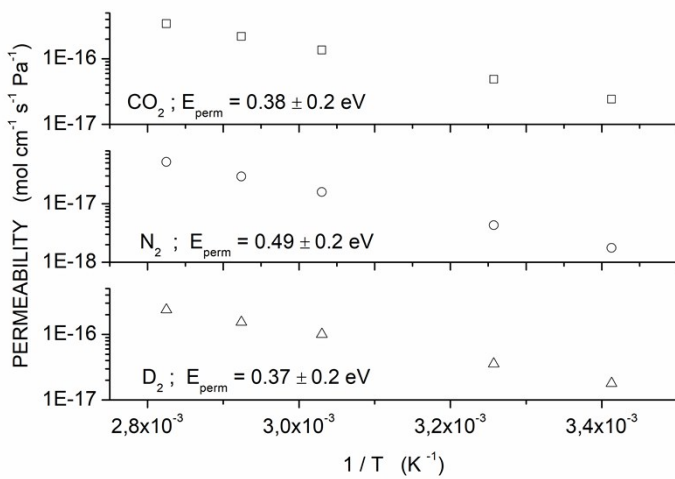


Fig. SM4 : CO₂ , N₂ and ²H₂ permeability values in the Low Density Polyethylene support. In the inset we report the activation energy values for penetrant permeation.