Supporting Information:

	OD/ID [μm]	Lp(CO_2 gas) [$NLh^{-1}m^{-2}bar^{-1}$]	Lp(N_2 gas) [$NLh^{-1}m^{-2}bar^{-1}$]	Selectivity $\alpha_{CO2/N2}$	Lp(H_2O liquid)* [$L.h^{-1}m^{-2}bar^{-1}$]
Oxyphan®	380/280	23000	19800	1.2 *(+/- 0.4)*	110
MicroPES®	500/300	77700	83700	0.9 *(+/- 0.5)*	1600

Table S1: Characteristics of fibres as received (*: values at 20°C).
Accuracy error for Lp(CO_2 gas) = 16%; Accuracy error for Lp(N_2 gas) = 26%

Hollow fiber Porous support	Polymer Dense layer (Solvent)	Name	Polymer mass fraction [w/w]	Velocity [$m.min^{-1}$]
MicroPES®	PTMSP (Cyclohexane)	PES_PTMSP	0.02-0.1	4-18
	TeflonAF2400® (Fluorinert)	PES_TF	0.01	14.5
Oxyphan®	PTMSP (Chloroform)	Oxy_PTMSP	0.01	7
	TeflonAF2400® (Fluorinert)	Oxy_TF	0.01	14.5

Table S2: Conditions of coating.

Coating n°	[PTMSP] (w/w in cyclohexane)	Withdrawal velocity [m.min^{-1}]	Coating thickness [µm]
1	0.02	4	Not measurable
2		6	0.4
3		10	0.7
4		18	2.09
5	0.03	6	0.826
6		8	0.922
7		10	1.19
8		12	1.2
9		14	1.42
10		18	1.56
11	0.04	4	1.5
12		6	1.42
13		8	1.87
14		10	2.06
15		12	2.72
16		14	Droplet
17		18	Droplet
18	0.05	4	2.6
19		6	2.7
20		8	Droplet
21		10	Droplet
22	0.1	4	Droplet
23		6	Droplet

Table S3: Coating conditions and resulting coating thickness of PTMSP on MicroPES®.

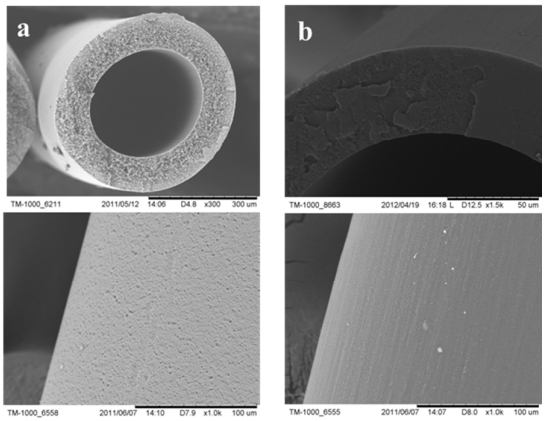

Figure S1: Cross-section and surface of fibres as received (a):MicroPES®, (b): Oxyphan®