



**Fig. S1.** Scheme of the membrane condenser process for the recovery of evaporated “waste” water from a gaseous stream .

**Table S1.** Operating Conditions Utilized in the Experiments

Relative humidity, %	from 105 to 150
Plume temperature, °C	from 25 to 45
Feed flow rate, mL min <sup>-1</sup>	from 0.03 to 0.07
Feed flow rate/membrane area, m h <sup>-1</sup>	1.2 ; 2.7
NH <sub>3</sub> concentration in the plume, ppm	from 0 to 650

**Table S2.** Experimental and Simulated Water Recovery at Various  $Q^{\text{Feed}}/A^{\text{Membrane}}$  ( $T^{\text{plume}} \approx 25^\circ\text{C}$ ,  $\Delta T = 11.6^\circ\text{C}$ )

$Q^{\text{Feed}}/A^{\text{Membrane}}$ , $\text{m h}^{-1}$	$\text{RH}^{\text{Plume}}$ , %	Water recovery, %	
		Experimental	Simulation
1.2	146.4	55.7	66.6
2.7	142.2	68.5	65.4

**Table S3.**  $\text{NH}_3$  Concentration in the Recovered Liquid Water at Various  $\text{NH}_3$  Concentration in the Feed.  $T_{\text{plume}} \approx 30^\circ\text{C}$ ,  $Q/A = 2.7$ ,  $\text{RH}_{\text{plume}} \approx 105\%$ ,  $6.4^\circ\text{C} < \Delta T < 1.4^\circ\text{C}$

$\text{NH}_3$ concentration in the feed	$\approx 300$ ppm		$\approx 100$ ppm	
	$\Delta T$ [ $^\circ\text{C}$ ]	Ammonia residue recovered water, ppm	$\Delta T$ [ $^\circ\text{C}$ ]	Ammonia residue recovered water, ppm
		6.39	44.1	6.40
	3.87	38.8	4.09	18.1
	1.37	7.08	1.47	0.59