

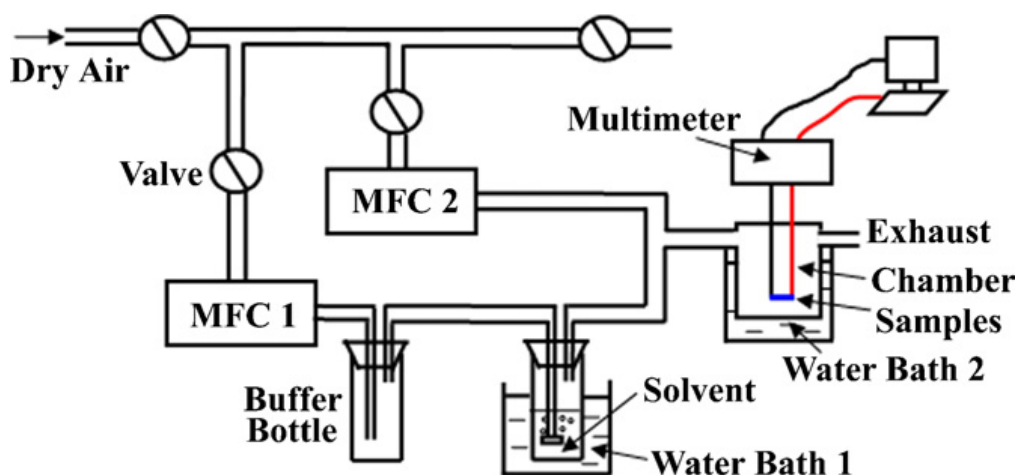
# Supporting Information

## 1. Experimental Part for Vapor Sensing Test

According to Ref [17], a bubbler evaporation system (shown in Scheme S1) was used to deliver the controlled concentration of volatile vapour to the detection chamber (25 mL) using dry air as carrier and diluting gas. The temperature of the bubbler evaporation system was set to 25 °C if not otherwise noted. The total flow rate was kept constant at 500 cm<sup>3</sup> min<sup>-1</sup> by two mass flow controllers (MFC1 and MFC2) during the measurements. The concentrations of the volatile vapor, which were carefully controlled by two MFCs, were calculated by Equation (1), where  $P$  is the input air pressure (which is atmospheric pressure in our system), and  $P_i$  is the saturated partial pressure of solvent at 25 °C,  $f$  and  $F$  are the mass flow rate of MFC1 and MFC2, respectively.

$$C (\%) = \left( \frac{P_i}{P} \times \frac{f}{f + F} \right) \times 100 \quad (1)$$

**Scheme S1.** Experimental set-up for the investigation of the vapor sensing behavior of MWCNT-coated cellulose fibers.



## 2. Saturated Vapor Concentration of VOCs at 25 °C

**Table S1.** Saturated partial pressure ( $P_i$ ) and saturated vapor concentration ( $C_i$ ) of solvent at 25 °C.

VOC	$P_i$ (25 °C) (kPa) *	$C_i$ (25 °C) (%)
Ethanol	8.00	7.9
Methanol	28.00	27.6
Acetone	30.56	30.2
Chloroform	26.54	26.2
Tetrahydrofuran (THF)	23.46	23.2

\* 1 atm = 101.33 kPa.