

electronic supplementary information

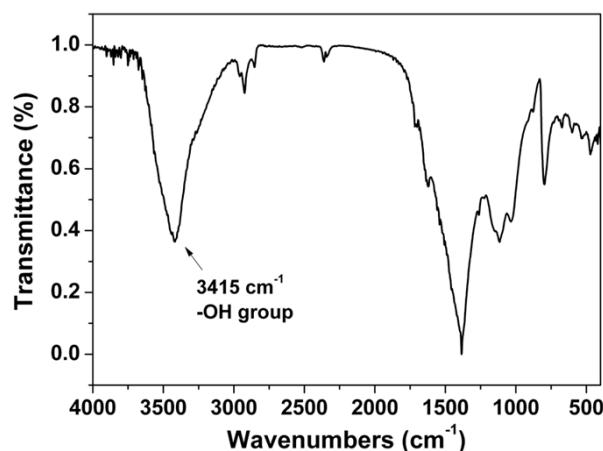
## Free-Standing Membranes Made of Activated Boron Nitride for Efficient Water Cleaning

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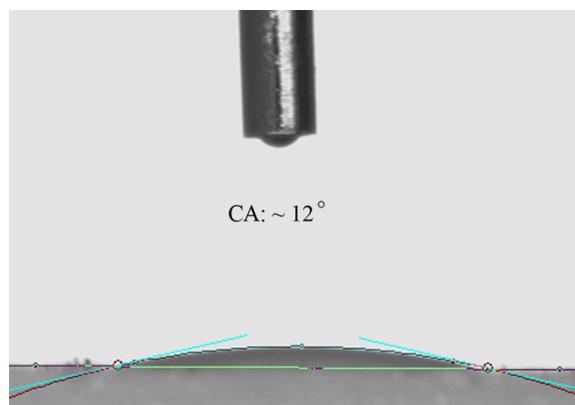
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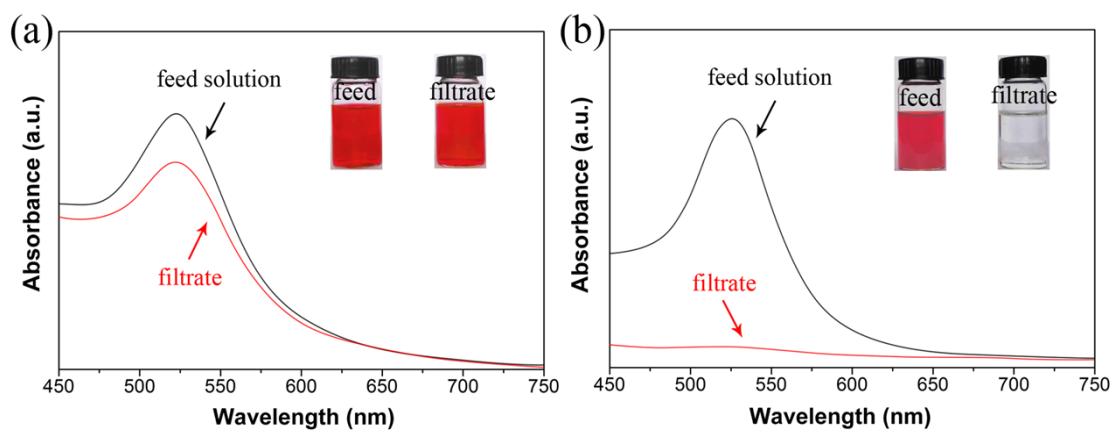
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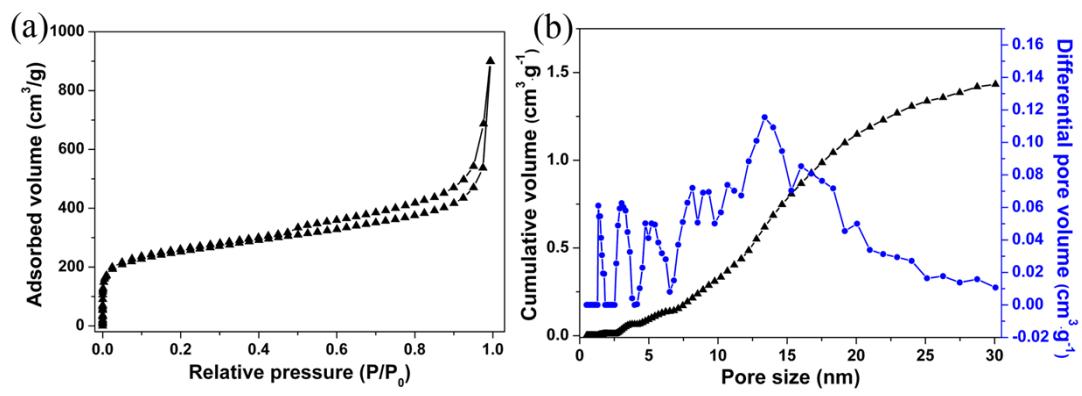
**Figure S1** FTIR spectrum of the ABN/MFC-70.



**Figure S2** Water contact angle (AC) on the ABN/MFC-70.



**Figure S3** UV-vis spectra of the feed and filtrate Au nanoparticles solutions showing the filtration performance of the ABN/MFC-70. (a) Filtration of 15 nm Au nanoparticles, inset presents the photos of the 15 nm Au nanoparticles solutions before and after filtration through the ABN/MFC-70; (b) Filtration of 35 nm Au nanoparticles, inset presents the photos of the 35 nm Au nanoparticles solutions before and after filtration through the ABN/MFC-70.



**Figure S4** Characterization of pore structure of the ABN/MFC-70. (a) Nitrogen adsorption/desorption isotherm, (b) the corresponding pore size distribution (spherical symbol) and cumulative pore volume (triangular symbol).

**Table S1** Comparison between the water contact angles of the different membranes.

membrane	<i>ABN/MFC-70</i>	<i>ABN/MFC-40</i>	<i>ABN/MFC-10</i>	<i>pure MFC membrane</i>
the AC	~ 12 °	~ 5 °	~ 2 °	~ 0 °