Electronic Supplementary Material (ESI) for Nanoscale.


Supporting Information for the manuscript

# Adsorption-assisted transport of water vapour in super-hydrophobic membranes filled with multilayer graphene platelets

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## S1. Raman spectroscopy on graphene platelets

Figure S1 reports the Raman spectrum in the region of the 2D peak acquired for our own graphene platelets, as compared with reference spectra for different thicknesses of graphene (taken from Ref. [S1]). It is evident that our sample of multilayer graphene platelets has a thickness distribution peaked around 5 layers. As a matter of fact, Raman signal in the region of 2D peak in our sample nicely fits the reference spectrum for 5 layers graphene, taken from Ferrari et al. [S1], concerning both line-shapes and frequencies of Raman peaks. This feature is preserved when graphene platelets are confined at various concentrations in polymeric matrix as well.

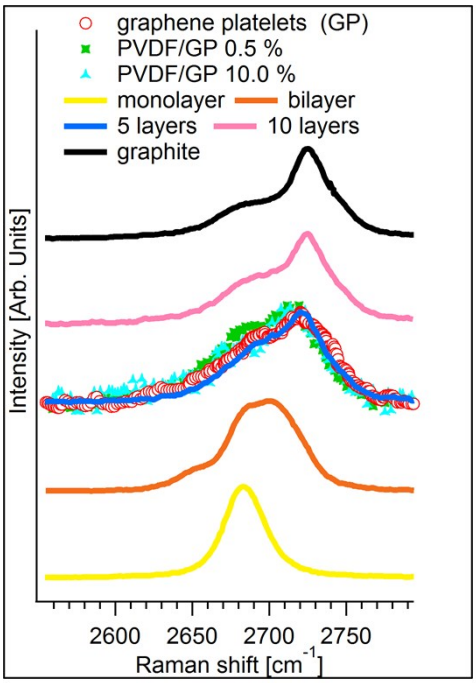


Figure S1: Evolution of Raman spectra at 514 nm for bulk graphite and for graphene. Raman spectra are scaled to have similar height of the 2*D* peak. Continuous curves are reference spectra taken from Ref. [S1], while the empty red circles denote the Raman spectrum of our own graphene sample, which is evidently well matching with the reference spectrum of 5 layers.

BIBLIOGRAPHY

S1. A. C. Ferrari, J. C. Meyer, V. Scardaci, C. Casiraghi, M. Lazzeri, F. Mauri, S. Piscanec, D. Jiang, K. S. Novoselov, S. Roth and A. K. Geim, *Phys. Rev. Lett.*, 2006, **97**, 187401.