Supplementary Figure S1

**XRD pattern of porous BN nanosheets using Cu Kα radiation.** X-ray powder diffraction analysis of the white final product reveals a typical hexagonal structure of BN with two broad diffraction peaks corresponding to the (002) and (100) planes, respectively.
Supplementary Figure S2

XPS spectra of the porous BN nanosheets. (a) Core-level B1s. (b) Core-level N1s. B1s and N1s spectra show main binding energies of 191.1 eV, and 398.6 eV, respectively. The shoulder peak at 192.5 eV in the B1s spectrum is assigned to B-O bonds, which could result from the exposure of the sample to air. The B/N ratio calculated from the XPS survey is about 1.
Supplementary Figure S3

**Nitrogen adsorption-desorption isotherm and contact angle measurements.** (a) Nitrogen adsorption–desorption isotherm of porous BN nanosheets. (b) Photograph of 2 mm diameter water droplet on non-porous nanosheets. (c) Photograph of 2 mm diameter water droplet on porous BN nanosheets with an increased contact angle of about 165°.
Supplementary Figure S4

FTIR spectra of porous BN nanosheets for the removal of oil. (a) Initial state, (b) after burning in air directly, and (c) after regeneration at 600 °C for 2h in air.
Supplementary Figure S5

Variation of the absorption capacity of pump oil. Oil can be taken up again at least 5 times with a slight decrease in capacity.
Supplementary Figure S6

The absorption capacities of pump oil. Porous BN nanosheets burnt in air and washed with organic solvents like ethanol or petroleum show recovery of the initial absorption capacity.
Supplementary Figure S7

Photographs of the porous BN nanosheets for the removal of oil. (a) Before absorption, (b) after 5 absorption cycles and (c) after regeneration at 600 °C for 2h in air.
Supplementary Figure S8

TEM picture of the porous BN nanosheets after regeneration for the removal of oil. Porous BN nanosheets regenerated at 600 °C for 2h in air, a highly porous structure can be seen clearly.
Supplementary Figure S9

**BY adsorption application.** (a) UV-vis absorption spectra of the aqueous solution of BY (130 mg L\(^{-1}\), 25 mL) in the presence of porous BN nanosheets at different intervals. The inset shows the molecular structures of BY. (b) Adsorption rates of BY with the corresponding photographs. (c) Adsorption isotherms of BY on porous layered BN nanosheets. The insets present the photographs of the porous BN nanosheets with BY composites before (upper) and after (bottom) recovering at 400 °C for 2 h in air, respectively.
Supplementary Figure S10

XRD patterns before and after absorption of oils. The patterns indicate a clear shift of the (002) diffraction peaks to low angles which is observed for both porous and non-porous BN nanosheets after oil absorption.
Supplementary Figure S11

**XRD patterns before and after absorption of ethanol.** The patterns indicate a slight shift of the (002) diffraction peaks to low angles which is observed for both porous and non-porous BN nanosheets after ethanol absorption.
Supplementary Figure S12

XRD patterns of commercial BN particles for the removal of oil. (a) Before, and (b) after oil absorption.
Supplementary References