Supporting information for

Mineralization of Perfluorooctanesulfonate (PFOS) and Perfluorodecanoate (PFDA) from Aqueous Solution by Porous Hexagonal Boron Nitride: Adsorption Followed by Simultaneous Thermal Decomposition and Regeneration

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Totally six pages including one table and four figures

List of supporting information

Chemical properties

Table S1 Physico-chemical properties of PFOS and PFDA

Compound	Formula	Weight	Solubility (mg L^{-1})	pK_a [1]	Vapor pressure (Pa at 20 ºC)	CMC [a] (mg L^{-1}) [1]	K_{aw} [b]
PFOS	$C_8F_{17}SO_3^-$	499	570	-3.27	3.31×10^{-4}	3992.0	$< 2 \times 10^{-6}$
PFDA	$C_{10}HF_{19}O_2$	514	9, 500 [c]	1.05	~	462.6	~

[a] Critical micelle concentration with potassium ions as the dominant counterions.

[b] $K_{aw} = C_a/C_w$ (C_a and C_w represent air concentration and water concentration, respectively).

[c] Source: ALS Environmental (Houston, TX, USA).

Characterization of ch-BNs

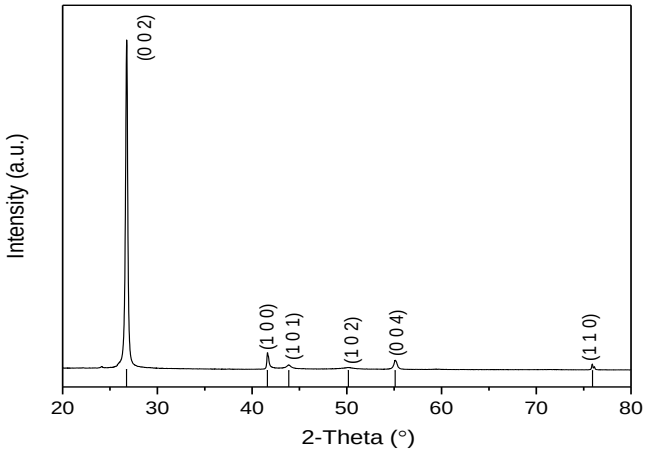

Figure S1. X-ray diffraction pattern of ch-BNs; standard hexagonal boron nitride (ICDD PDF #34-0421).

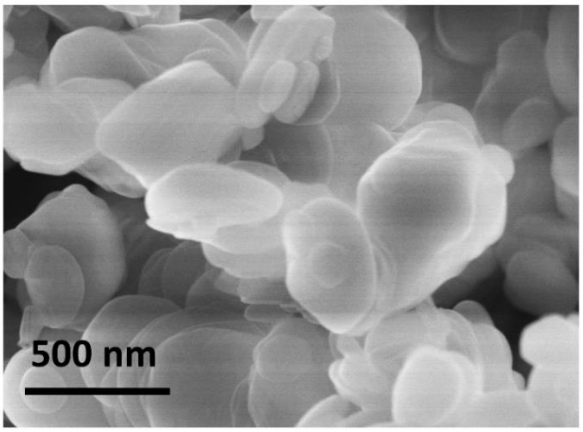

Figure S2. Scanning electron microscopy image of ch-BNs.

Chromatograms of standard short-chain PFSAs and PFCAs

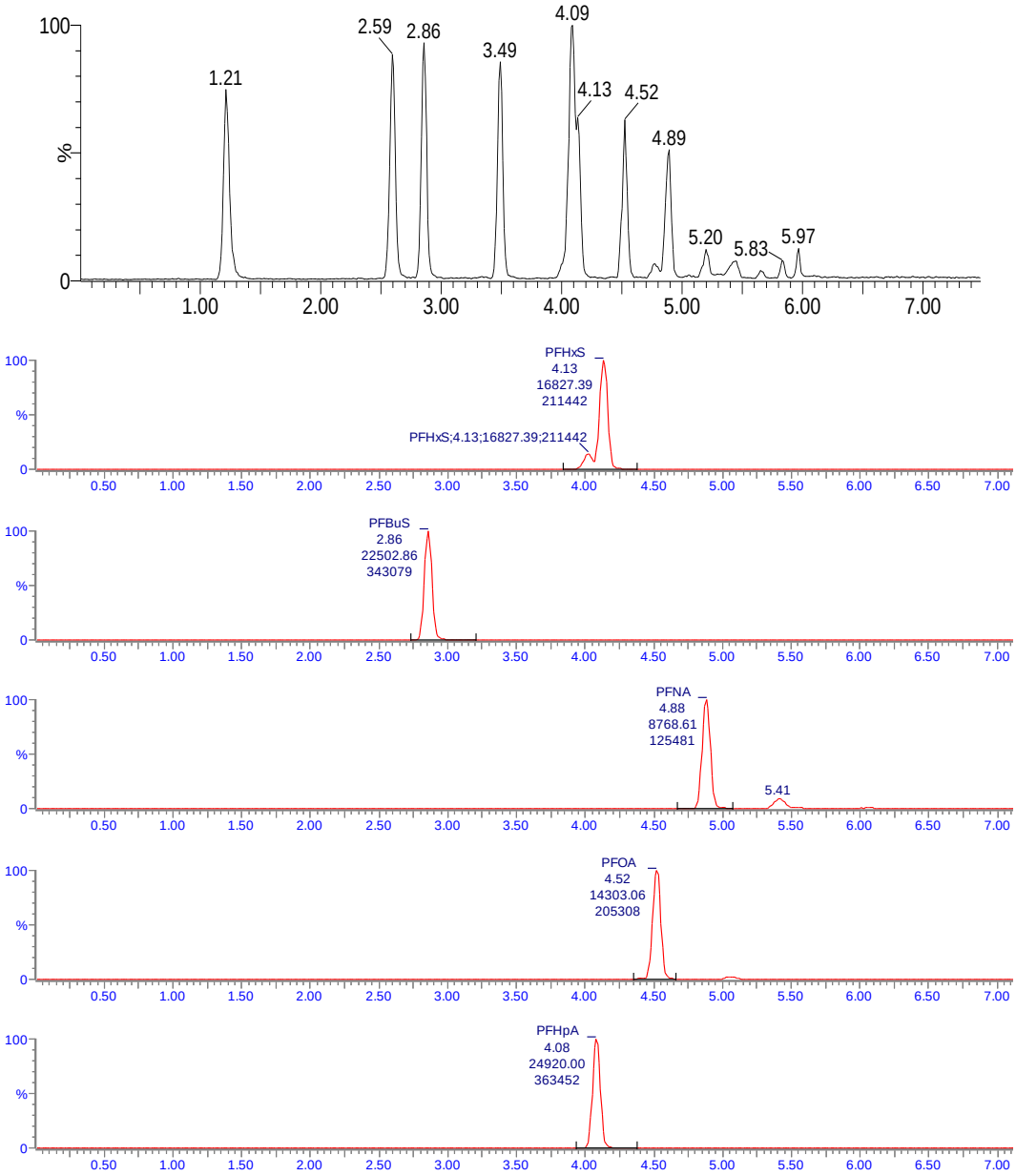

Figure S3. UPLC-MS/MS total ion current chromatogram of standard PFASs (top, each with a concentration of 10 μg L^{-1}); detailed conditions can be found in our previous publication.[2] Multiple-reaction monitoring chromatogram of PFHxS, PFBuS, PFNA, PFOA, and PFHpA.

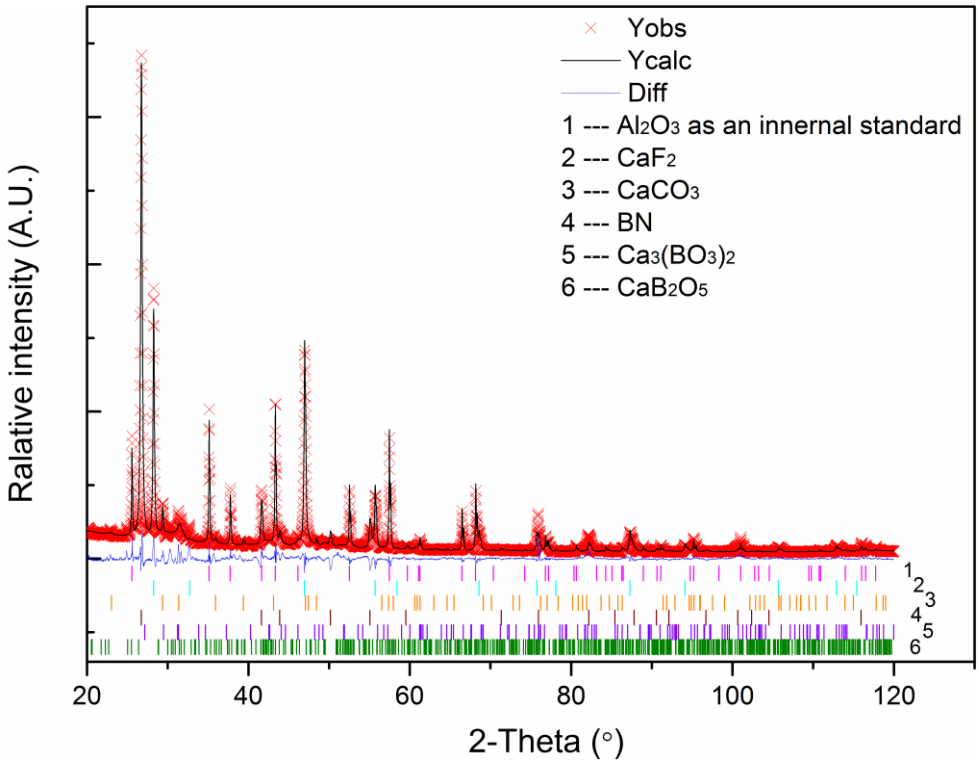

Figure S4. Quantification results of the mixture after calcination at 600 °C for 20 min. Alumina powders were added to the resulting product as an internal standard (wt. 20%).

References

1 E. Kissa, *Fluorinated surfactants and repellents*, CRC Press, 2001.

2 R. Ma and K. Shih, *Environ. Pollut.*, 2010, **158**, 1354-1362.