*Electronic supplementary Information*

**Optimized purification procedure on Iranian calcium bentonite for producing montmorillonite nanosheets**

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**Table S1**

Experimental conditions and the results of zeta potential measurement.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **pH** | **Holder Temperature (℃)** | **Viscosity of the Dispersion medium (mPa.s)** | **Conductivity**  **(ms/cm)** | **Electrode voltage**  **(v)** | **Zeta potential**  **(mv)** | **Electrophoretic mobility (cm2/Vs)** |
| 6 | 24.9 | 0.897 | 0.183 | 3.3 | -37.5 | -0.000290 |
| 7 | 24.9 | 0.897 | 0.165 | 3.4 | -44.2 | -0.000342 |
| 8 | 24.8 | 0.898 | 0.229 | 3.3 | -42 | -0.000324 |
| 9 | 25 | 0.896 | 0.235 | 3.3 | -44 | -0.000340 |
| 10 | 24.8 | 0.898 | 0.285 | 3.3 | -43.6 | -0.000337 |

**S1. Purification step**

**Table S2**

The d001 spacing and full-width at half-maximum (FWHM) for raw material, purified samples, and synthesized nanoclay.

|  |  |  |
| --- | --- | --- |
| **Sample code** | **d001 (Å)** | **FWHM** |
| RB | 15 | 0.8 |
| PB5 | 12 | 1.2 |
| PB5-washed | 14 | 0.2 |
| SB | 21 | 0.2 |
| SRB | 19 | 0.4 |