**Selective recovery of lanthanum from magnesium-containing solution via phosphoric acid modified** **kaolin prepared by a simple mechanochemical process**

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**Fig. S1** Crystalline phase of raw kaolin.

Table S1 Main components of raw kaolin

|  |  |  |  |
| --- | --- | --- | --- |
| Component | Kaolinite | Quartz | Other minerals (Fe, Ti and so on) |
| Content (%) | 90 | 8 | 2 |



**Fig. S2** The N2 adsorption-desorption isotherms and pore size distribution curves for raw kaolin and P-K.



**Fig. S3** The relationship between the zeta potential of P-K and pH.