**Figure captions**

Figure S1. The effective fitting training of heat of hydration, electronegativity, electron charge-mass ration, ionic radius, temperature, concentration by Matlab.

Figure S2. The effective fitting validation of heat of hydration, electronegativity, electron charge-mass ration, ionic radius, temperature, concentration by Matlab.

Figure S3. The performance and goal of heat of hydration, electronegativity, electron charge-mass ration, ionic radius, temperature, concentration.

Figure S4. The effective fitting training of heat of hydration, electronegativity, electron charge-mass ration, ionic radius, temperature, swelling capacity by Matlab.

Figure S5. The effective fitting validation of the heat of hydration, electronegativity,

electron charge-mass ration, ionic radius, temperature, swelling capacity by Matlab.

Figure S6. The performance and goal of heat of hydration, electronegativity, electron charge-mass ration, ionic radius, temperature, swelling capacity.

Figure S7. The effective fitting training of heat of hydration, electronegativity, electron charge-mass ration, ionic radius, temperature, slice gap by Matlab.

Figure S8. The effective fitting validation of heat of hydration, electronegativity,

electron charge-mass ration, ionic radius, temperature, slice gap by Matlab.

Figure S9. The performance and goal of heat of hydration, electronegativity, electron charge-mass ration, ionic radius, temperature, slice gap.

Figure S10. The effective fitting training of heat of hydration, electronegativity, electron charge-mass ration, ionic radius, temperature, pH by Matlab.

Figure S11. The effective fitting validation of heat of hydration, electronegativity,

electron charge-mass ration, ionic radius, temperature, pH by Matlab.

Figure S12. The performance and goal of heat of hydration, electronegativity, electron charge-mass ration, ionic radius, temperature, pH.

Figure S13. The effective fitting training of heat of hydration, electronegativity, electron charge-mass ration, ionic radius, temperature, specific surface area by Matlab.

Figure S14. The effective fitting validation of the heat of hydration, electronegativity,

electron charge-mass ration, ionic radius, temperature, specific surface by Matlab.

Figure S15. The performance and goal of heat of hydration, electronegativity, electron charge-mass ration, ionic radius, temperature, specific surface area.

Figure S1

图表

描述已自动生成

Figure S2



Figure S3



Figure S4



Figure S5



Figure S6



Figure S7



Figure S8



Figure S9



Figure S10



Figure S11



Figure S12



Figure S13



Figure S14



Figure S15



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