Supporting Information

Preparation of Layered Carbon Nitride/Titanium based Metal Skeleton Materials and Study on Their Electrorheological Properties

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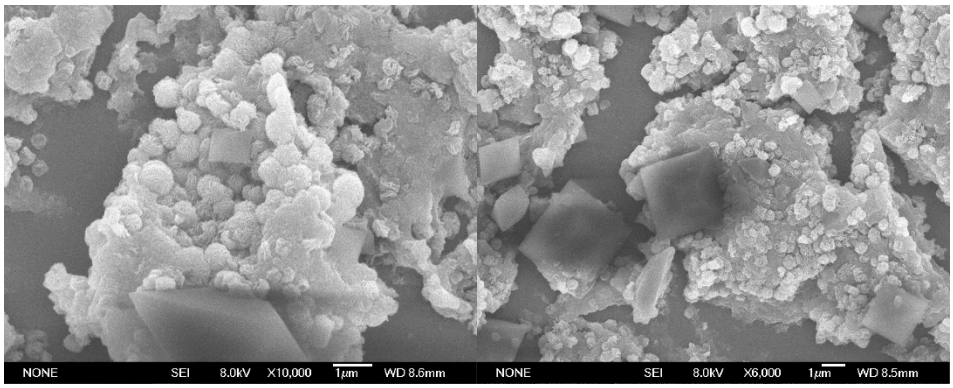


Fig.S1 SEM image of MOF/g-C_3N_4-0.6.

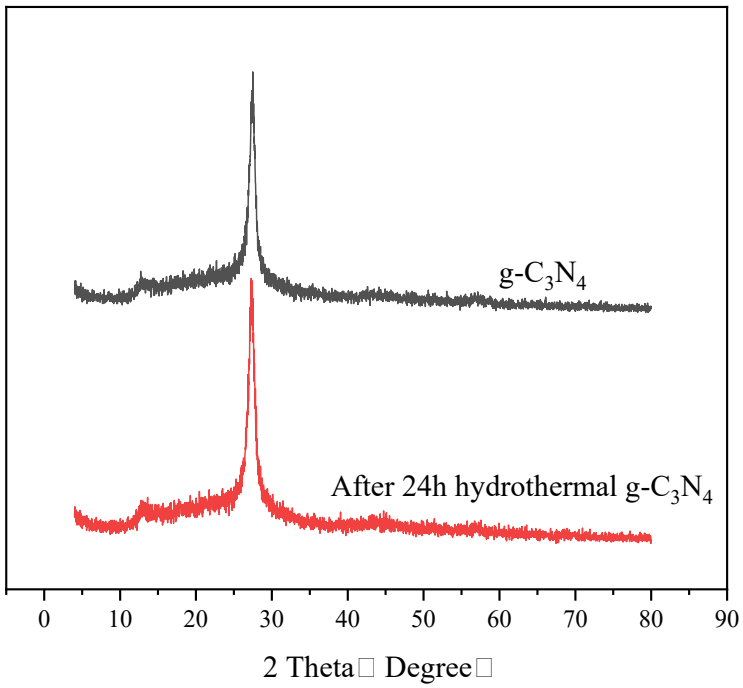
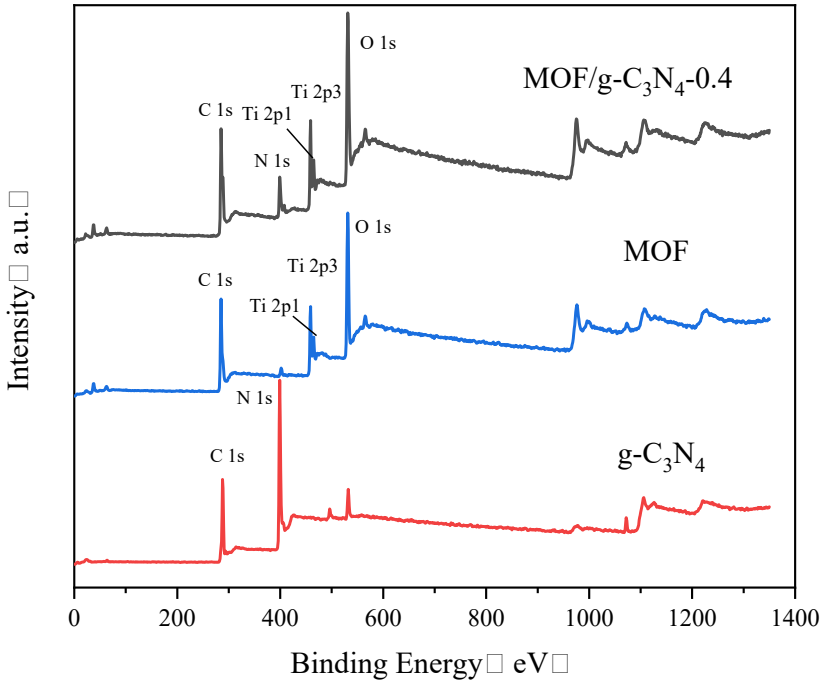
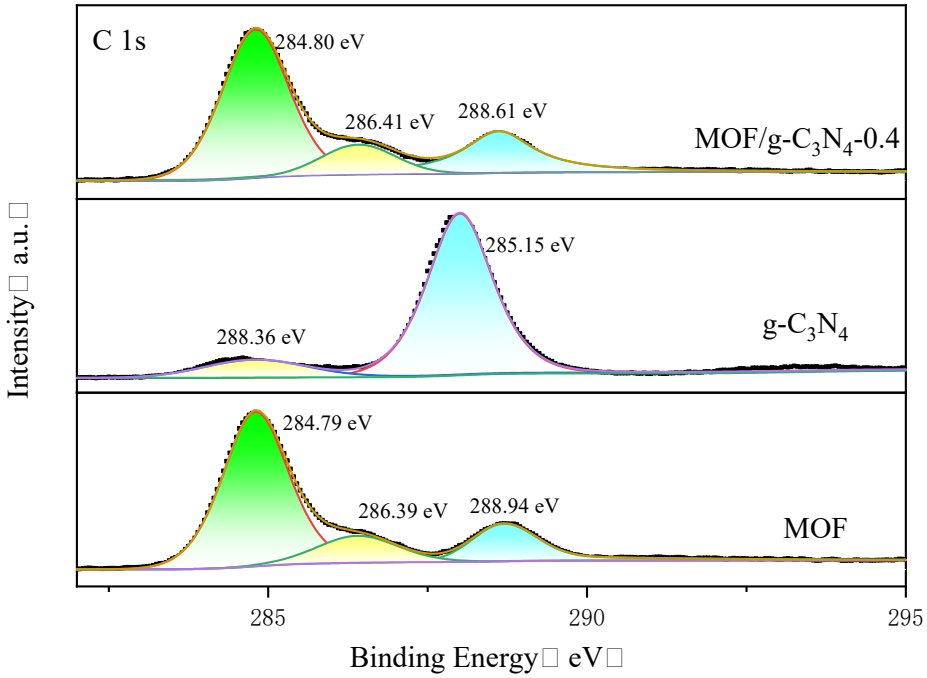
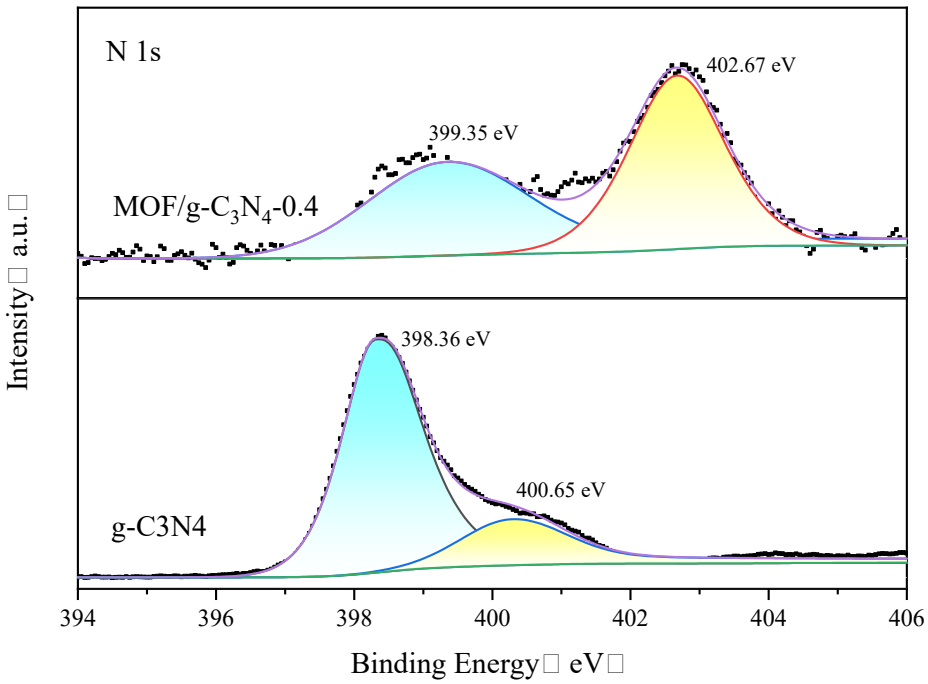
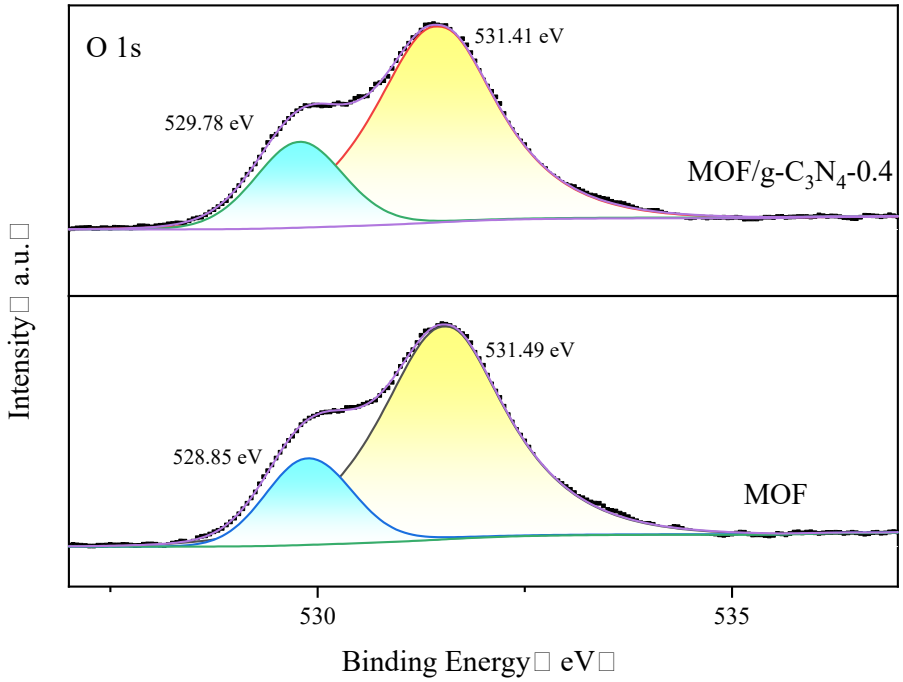


Fig.S2 XRD patterns of g-C_3N_4 before and after secondary hydrothermal treatment.


O 1s
MOF/g-C3N4-0.4
Ti 2p3
C 1s
Ti 2p1
N 1s
O 1s
MOF
Ti 2p3
C 1s
Ti 2p1
N 1s
C 1s
g-C3N4
Intensity□ a.u.□
0
200
400
600
800
1000
1200
1400
Binding Energy□ eV□


C 1s
284.80 eV
286.41 eV
288.61 eV
MOF/g-C3N4-0.4
285.15 eV
288.36 eV
g-C3N4
284.79 eV
286.39 eV
288.94 eV
MOF
Intensity□ a.u.□
285
290
295
Binding Energy□ eV□


N 1s
402.67 eV
399.35 eV
MOF/g-C3N4-0.4
398.36 eV
400.65 eV
g-C3N4
Intensity□ a.u.□
394
396
398
400
402
404
406
Binding Energy□ eV□


O 1s
531.41 eV
529.78 eV
MOF/g-C3N4-0.4
531.49 eV
528.85 eV
MOF
Intensity□ a.u.□
530
535
Binding Energy□ eV□

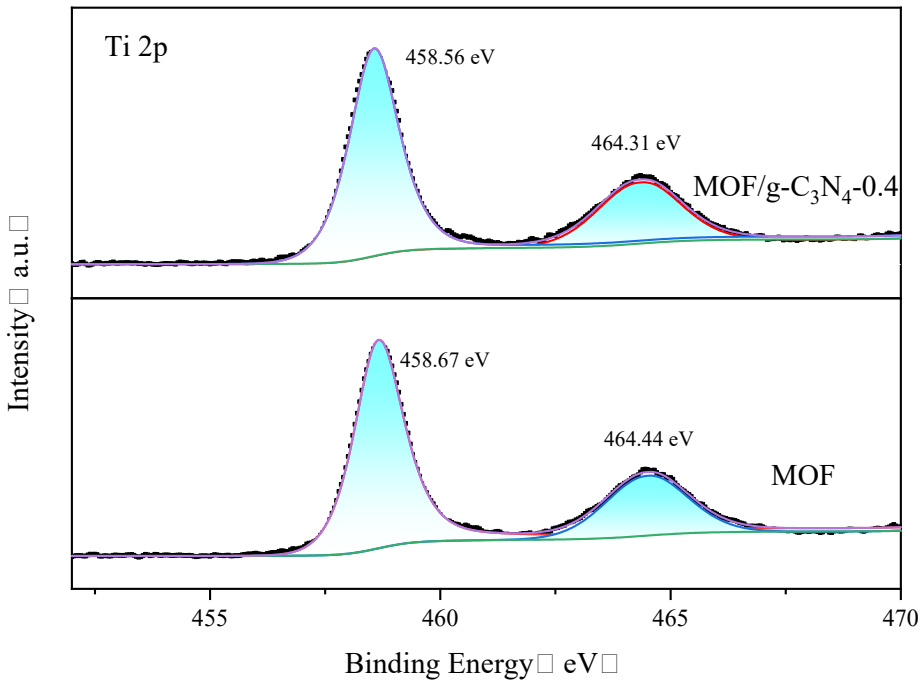


Fig. S3 XPS spectra of g-C_3N_4, MOF/g-C_3N_4-0.4, and MOF nanoparticles: (a) the overall analysis of the sample, (b) C 1s , (c) N 1s, (d) O 1s and (e) Ti 2prespectively.

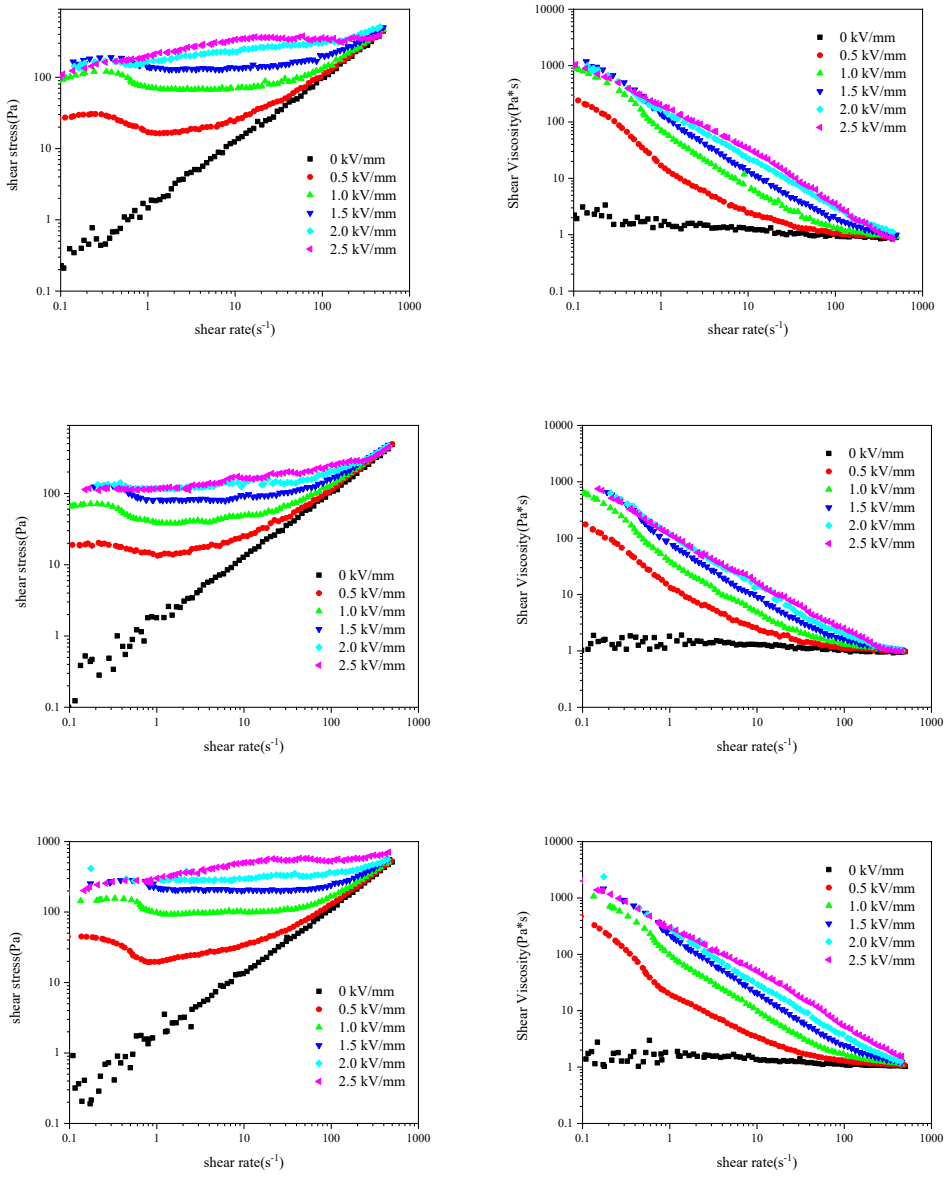
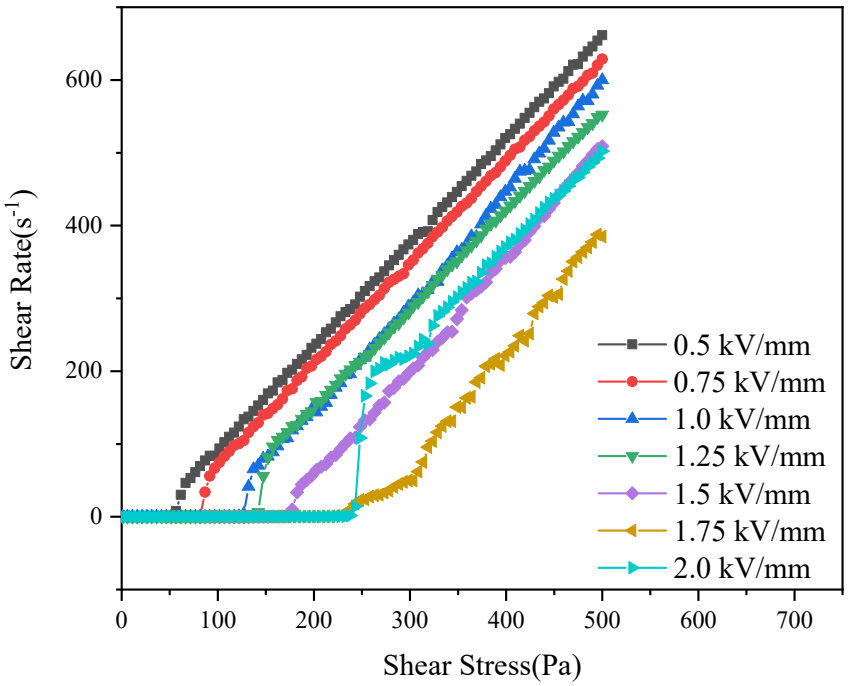
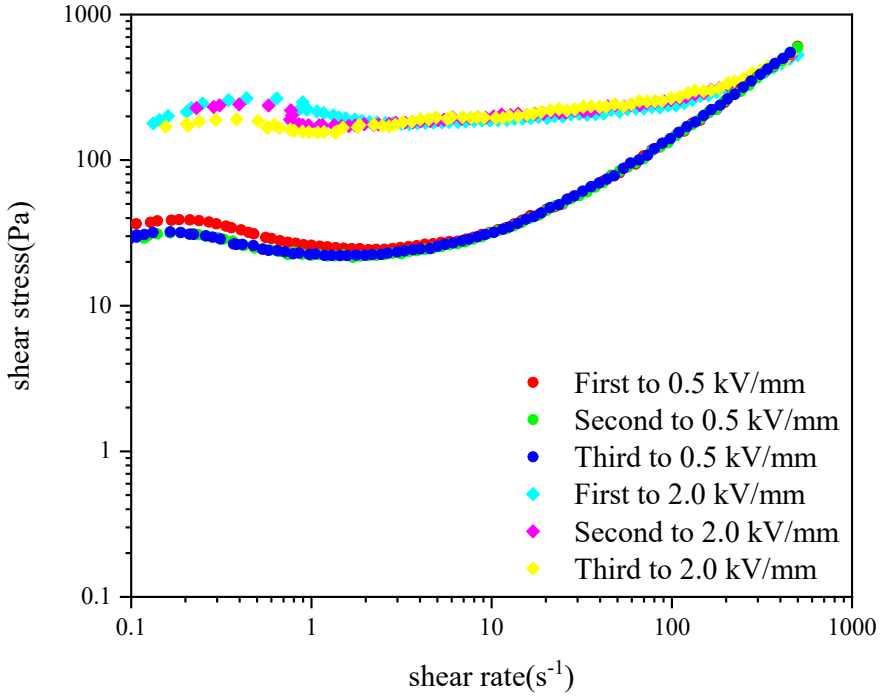


Fig. S4 Shear stress curves and shear viscosity curves for MOF/g-C_3N_4-0.15(a, b), MOF/g-C_3N_4-0.2(c, d), MOF/g-C_3N_4-0.3(e, f)


Shear Rate(s-1)
600
400
200
0
0
100
200
300
400
500
600
700
Shear Stress(Pa)
0.5 kV/mm
0.75 kV/mm
1.0 kV/mm
1.25 kV/mm
1.5 kV/mm
1.75 kV/mm
2.0 kV/mm


shear stress(Pa)
1000
100
10
1
0.1
0.1
1
10
100
1000
shear rate(s-1)
First to 0.5 kV/mm
Second to 0.5 kV/mm
Third to 0.5 kV/mm
First to 2.0 kV/mm
Second to 2.0 kV/mm
Third to 2.0 kV/mm

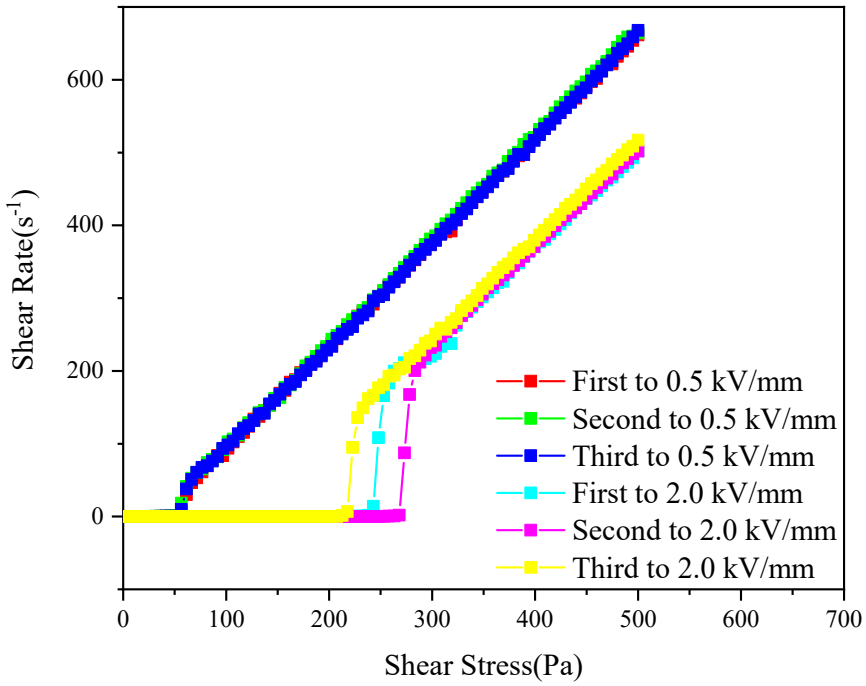
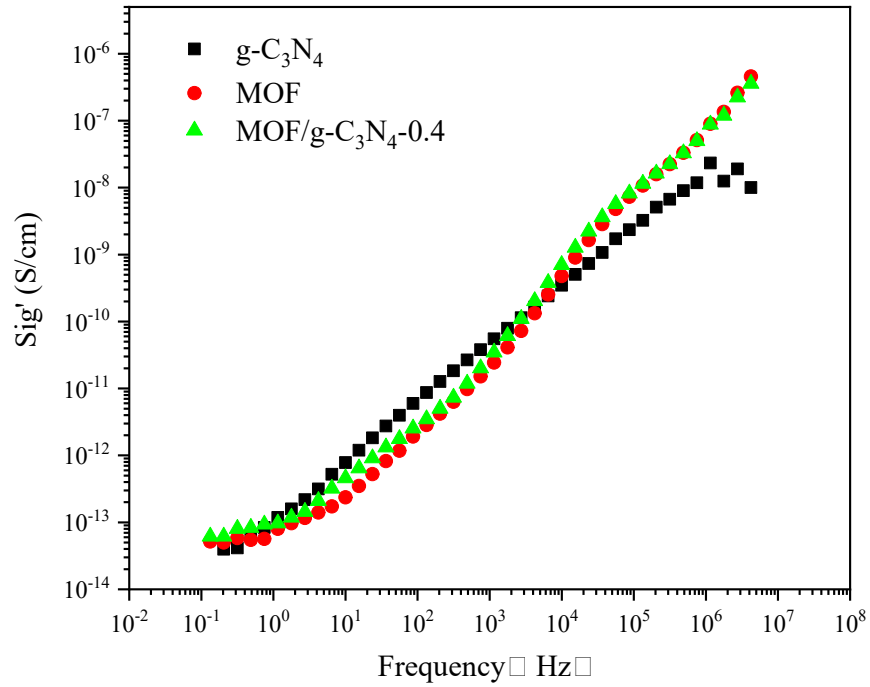


Fig.S5 Curves of shear rate vs. shear stress for MOF/g-C_3N_4-0.4(a),three repeating experiments for CSR(b) and CSS(c) model.



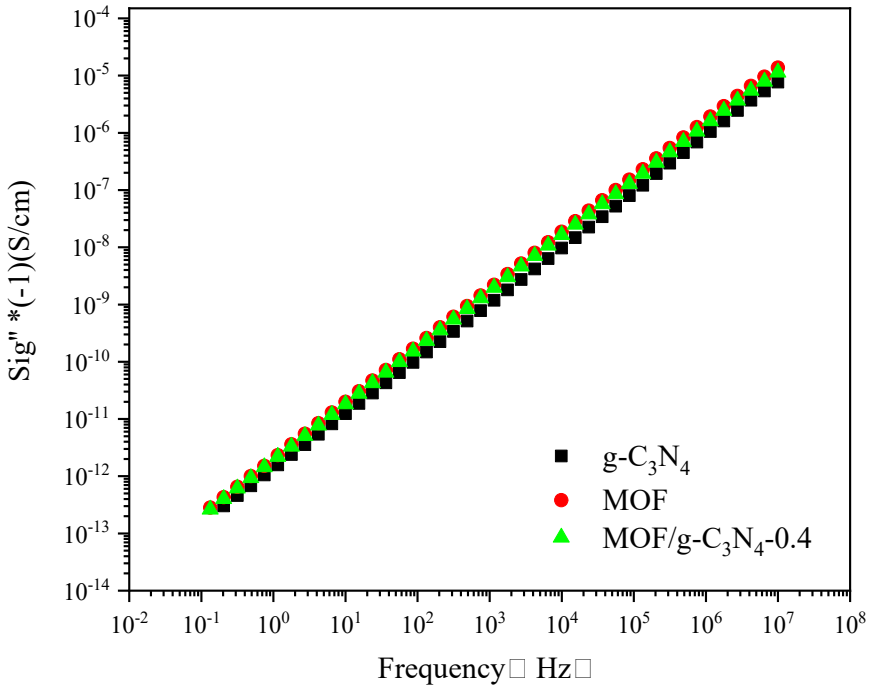


Fig. S6 real(a) and imaginary(b) dielectric permittivity spectra for the MOF/g-C_3N_4-based ER fluid.

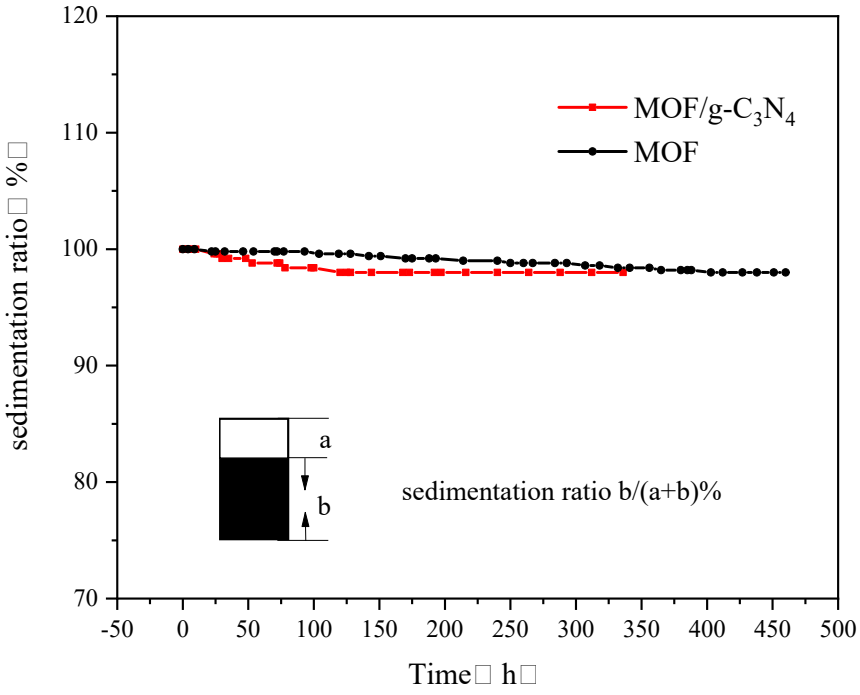


Fig. S7 The sedimentation rate of the MOF and MOF/g-C_3N_4 based electrorheological fluid.