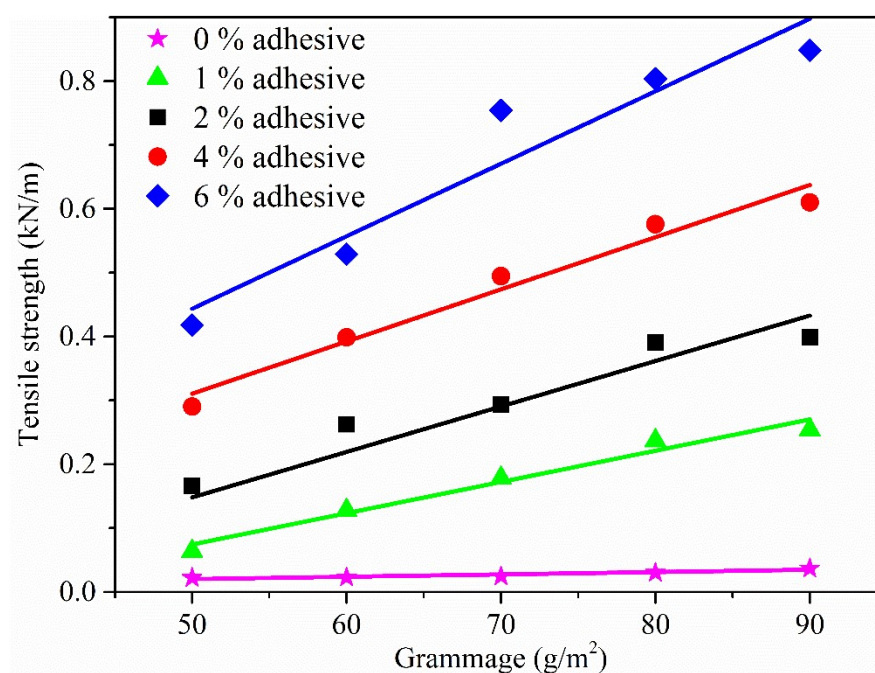


Figure S1. (a) FE-SEM image and EDS spectral result of all the elements of SD-AFP;
(b) EDS diagram



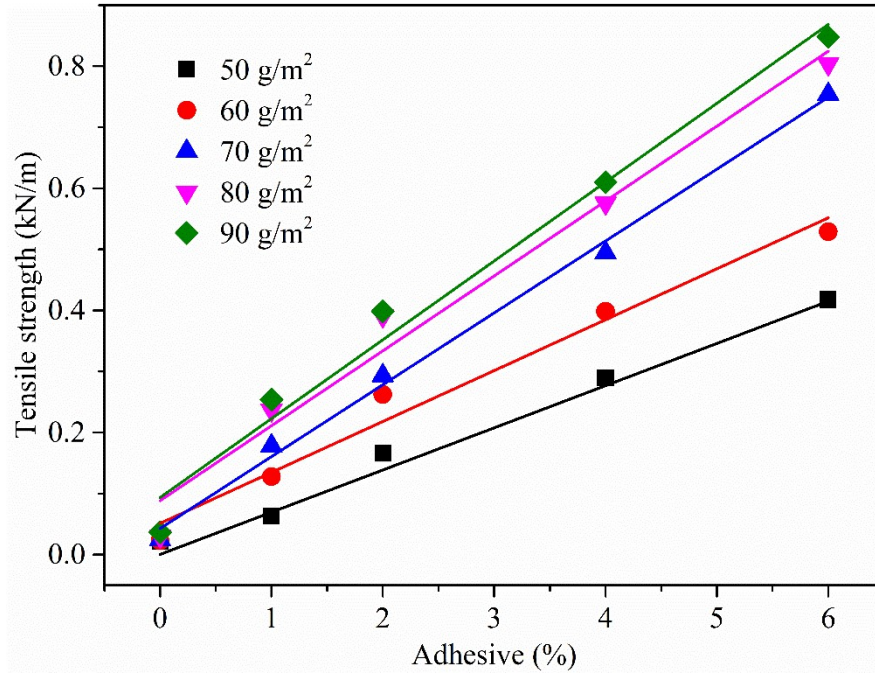


Figure S2. Tensile strength of SD-AFP: (a) tensile strength varies with fiber grammage; (b) tensile strength varies with the amount of adhesive

Table S1. Linear parameters of the tensile strength change varies with the fiber grammage

Adhesive/%	Slope	Intercept	R ²
0	3.66E-4	1.66E-3	0.8794
1	4.90 E-3	-0.17	0.9725
2	7.10 E-3	-0.21	0.8999
4	8.20 E-3	-0.10	0.9705
6	1.14 E-2	-0.12	0.9196

Table S2. Linear parameters of the tensile strength change varies with the amount of adhesive

Grammage/g·m ⁻²	Slope	Intercept	R ²
50	0.07	4.00E-04	0.9848
60	0.08	0.05	0.9786
70	0.12	0.04	0.9960
80	0.12	0.09	0.9782
90	0.13	0.09	0.9828

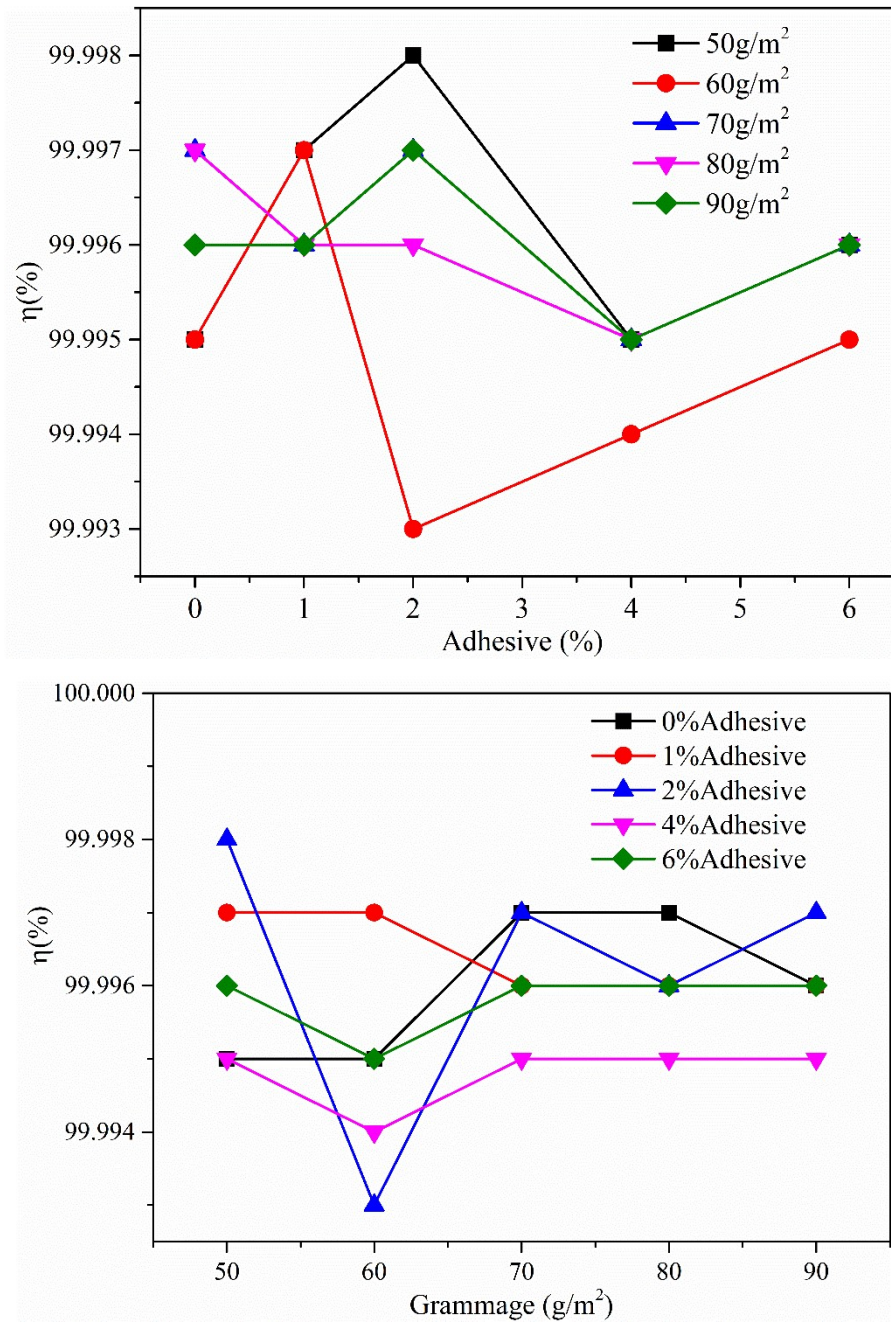


Figure S3. Filtration efficiency of SD-AFP: (a) filtration efficiency varies with the amount of adhesive; (b) filtration efficiency varies with the fiber grammage

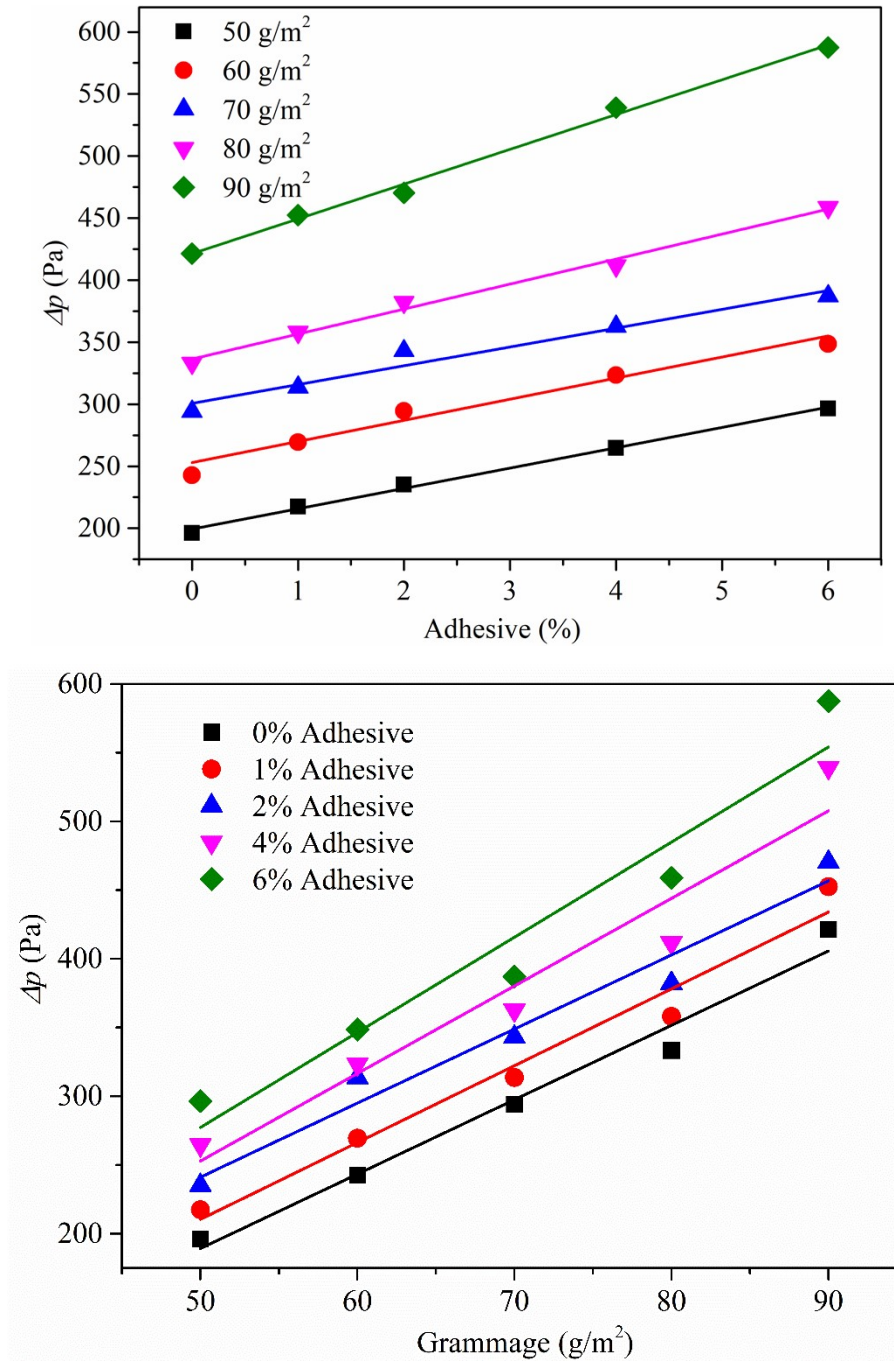


Figure S4. Pressure drop of SD-AFP: (a) resistance varies with the amount of adhesive; (b) resistance varies with the fiber grammage

Table S3. Linear parameters of the resistance change varies with the amount of adhesive

Grammage/g·m ⁻²	Slope	Intercept	R ²
50	16.38	199.36	0.9848
60	17.02	252.93	0.9475
70	15.16	300.63	0.9609
80	20.14	336.40	0.9922
90	28.03	421.29	0.9828

Table S4. Linear parameters of the resistance change varies with the fiber grammage

Adhesive/%	Slope	Intercept	R ²
0	5.41	-81.45	0.9785
1	5.59	-69.03	0.9727
2	5.39	-28.42	0.9658
4	6.37	-65.66	0.9414
6	6.92	-68.79	0.9412

Table S5. Linear parameters of the resistance change varies with the retention rate of ZH

No.	Slope	Intercept	R ²
a	0.64	197.50	0.9795
b	0.99	215.67	0.9280
c	0.51	255.83	0.9280
d	0.90	249.27	0.9963