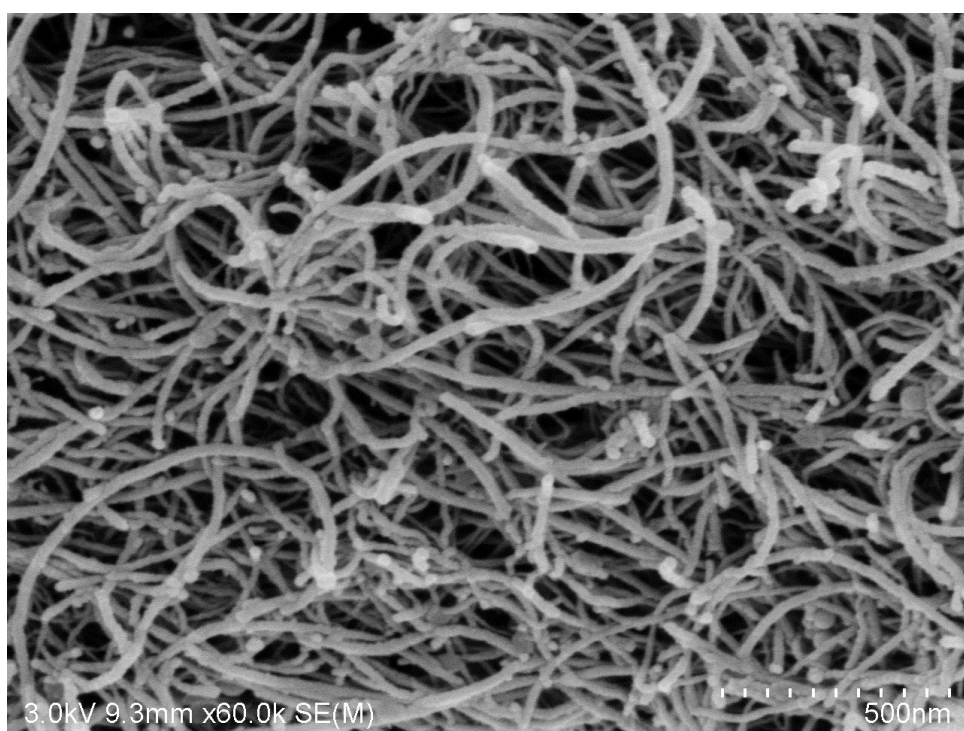
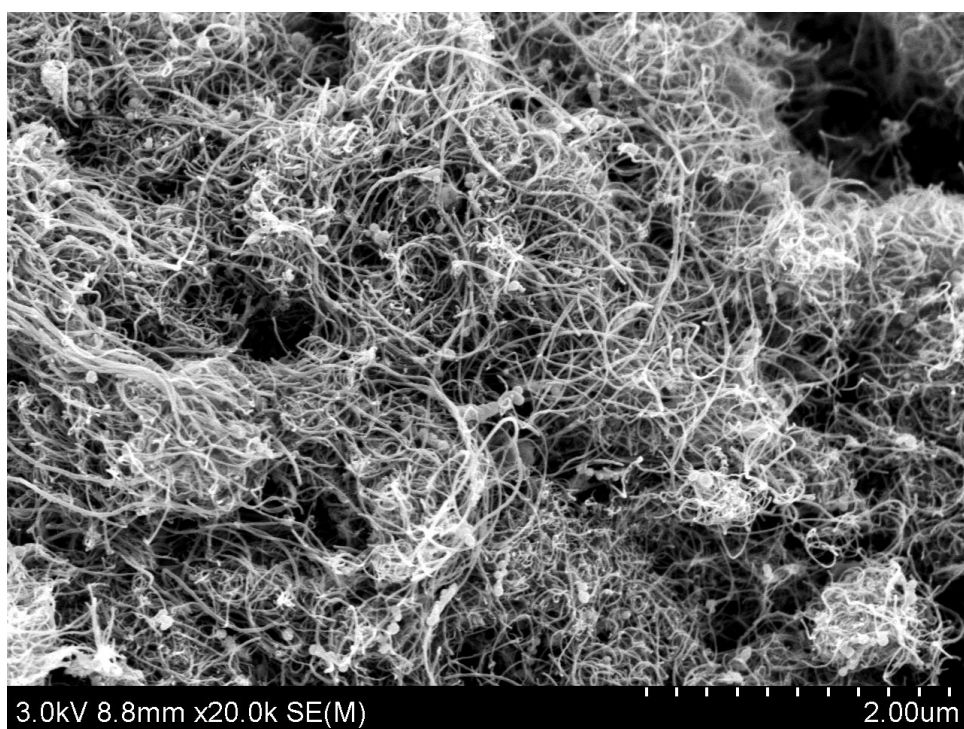


Fig S1. TEM images of Fe<sub>2</sub>P(IL6)/CNTs



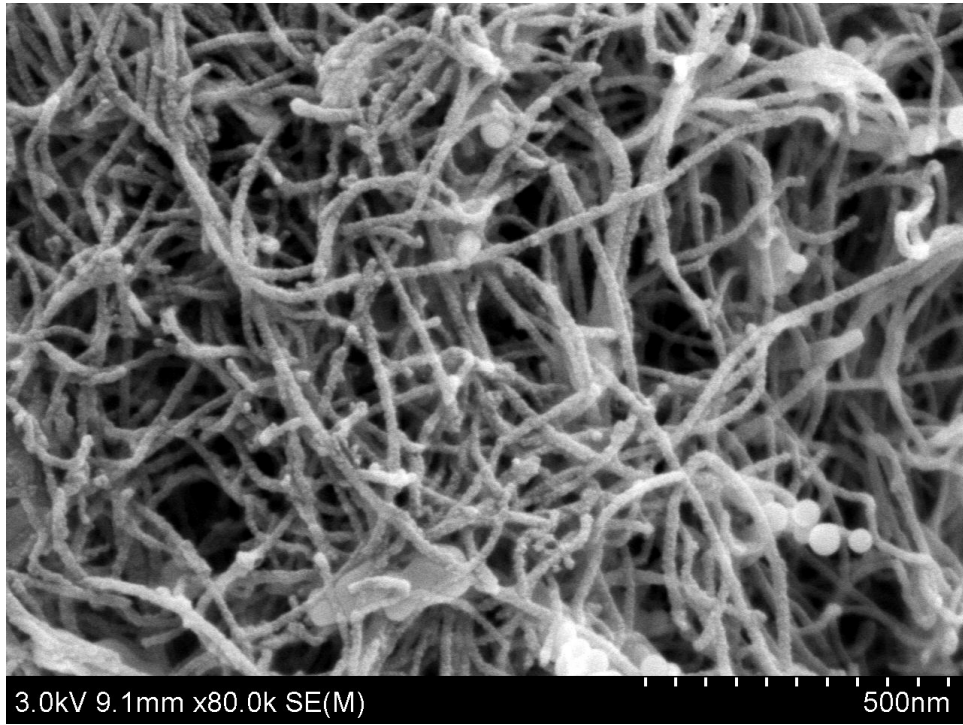
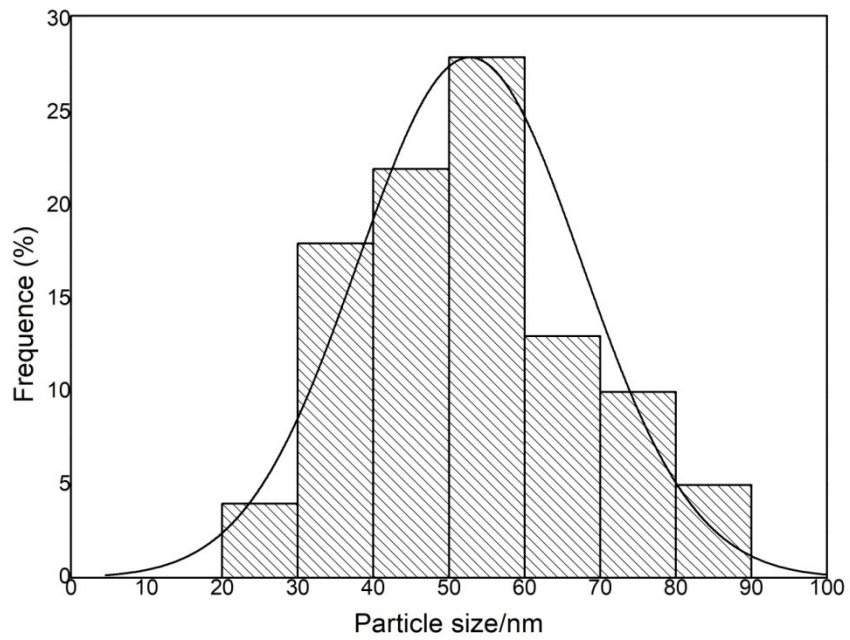


Fig S2. Distribution histogram and Scherrer analysis results of  $\text{Fe}_2\text{P}(\text{IL6})/\text{CNTs}$



Distribution histogram of  $\text{Fe}_2\text{P}(\text{IL6})/\text{CNTs}$

## Estimate Crystallite Size & Strain from Peak Broadening

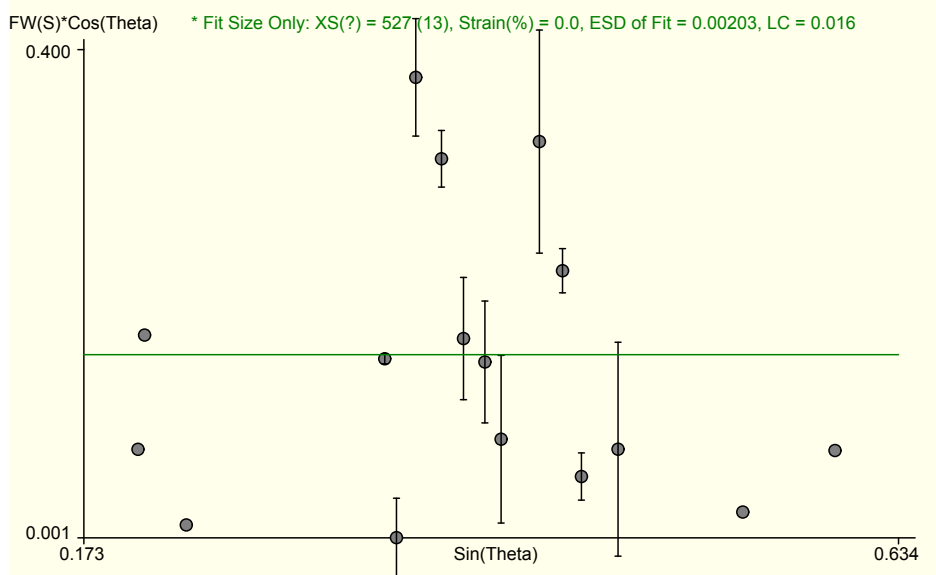
FILE: [C6.raw] Commander Sample ID

SCAN: 20.0001/80.0079/0.01949/20.88(sec), Cu(40kV,40mA), I(max)=643, 07/28/20 21:50

NOTE: All Unrejected Peaks, FW(S) = Sample Broadening, Constant FWHM = 0.1

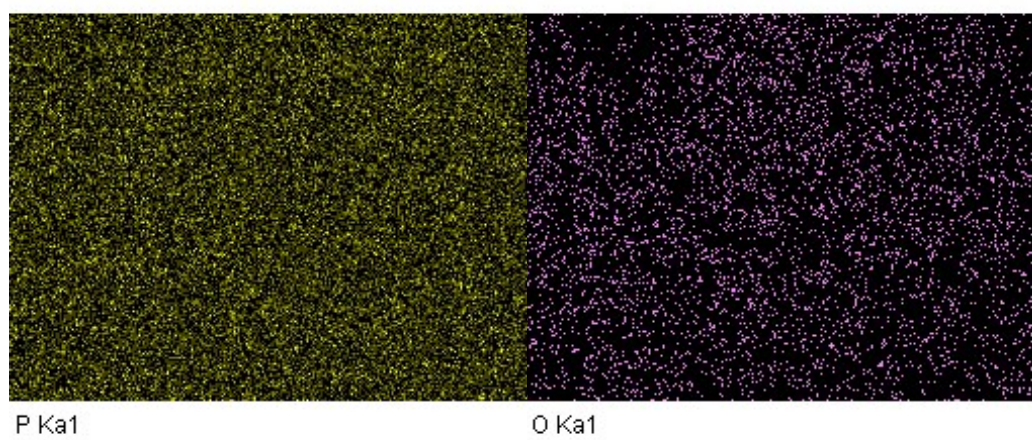
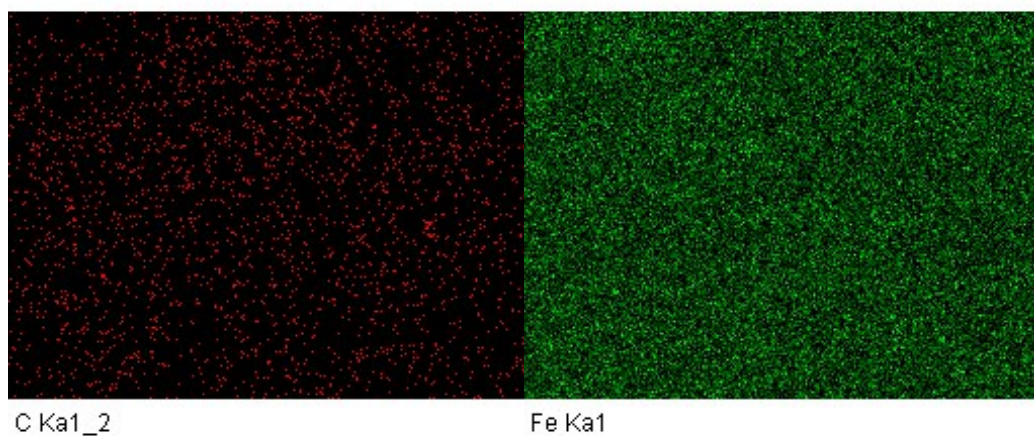
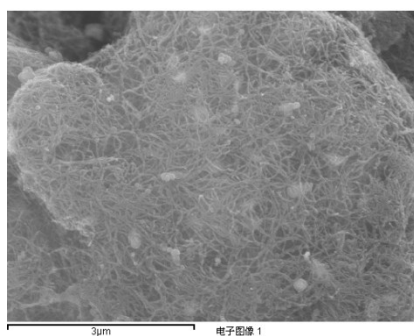
2-Theta	d(?)	Height	Shape	Skew	FWHM	FW(S)*Cos(Theta)	Sin(Theta)
23.553 (?)	3.7741 (?)	22 (?)	1.000v	-0.682	0.175 (?)	0.07348 (?)	0.2041
23.993 (?)	3.7059 (?)	26 (?)	0.500v	0.608	0.271 (?)	0.16679 (?)	0.2079
26.760 (?)	3.3287 (?)	100 (?)	0.500v	0.900	0.112 (?)	0.01173 (?)	0.2314
40.201 (0.004)	2.2413 (0.0004)	641 (11)	0.221v	0.234	0.257 (0.004)	0.14747 (0.00412)	0.3437
41.009 (0.013)	2.1990 (0.0014)	34 (6)	1.000v	0.605	0.101 (0.034)	0.00131 (0.03217)	0.3503
42.348 (0.018)	2.1325 (0.0018)	58 (3)	1.000v	-0.869	0.505 (0.051)	0.37736 (0.04799)	0.3612
44.142 (0.010)	2.0500 (0.0009)	165 (5)	1.000v	0.468	0.435 (0.025)	0.31082 (0.02311)	0.3758
45.682 (0.033)	1.9844 (0.0027)	24 (2)	0.000v	-0.449	0.278 (0.054)	0.16395 (0.04991)	0.3882
47.193 (0.017)	1.9243 (0.0013)	72 (25)	0.138v	-0.761	0.258 (0.054)	0.14483 (0.04981)	0.4003
48.341 (0.023)	1.8812 (0.0017)	19 (4)	1.000v	0.897	0.190 (0.075)	0.08174 (0.06851)	0.4095
51.080 (0.033)	1.7866 (0.0022)	20 (2)	1.000v	-0.892	0.460 (0.101)	0.32487 (0.09108)	0.4311
52.748 (0.019)	1.7340 (0.0012)	58 (3)	0.000v	0.094	0.345 (0.020)	0.21939 (0.01805)	0.4442
54.117 (0.012)	1.6933 (0.0007)	72 (12)	0.000v	0.651	0.158 (0.022)	0.05128 (0.01931)	0.4549
56.796 (0.037)	1.6196 (0.0019)	13 (3)	0.301v	0.899	0.184 (0.099)	0.07356 (0.08737)	0.4756
66.212 (?)	1.4103 (?)	18 (?)	1.000v	0.527	0.127 (?)	0.02228 (?)	0.5462
73.503 (?)	1.2873 (?)	17 (?)	0.000v	-0.714	0.190 (?)	0.07251 (?)	0.5983

\* Fit Size Only: XS(?) = 527 (13), Strain(%) = 0.0, ESD of Fit = 0.00203, LC = 0.016



Scherrer analysis results of Fe<sub>2</sub>P(IL6)/CNTs

Fig S3. EDS analysis result of Fe<sub>2</sub>P(IL6)/CNTs



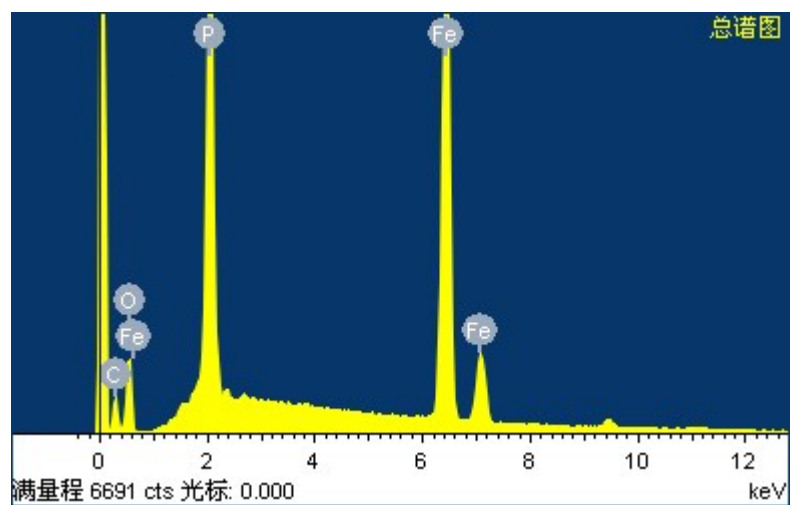
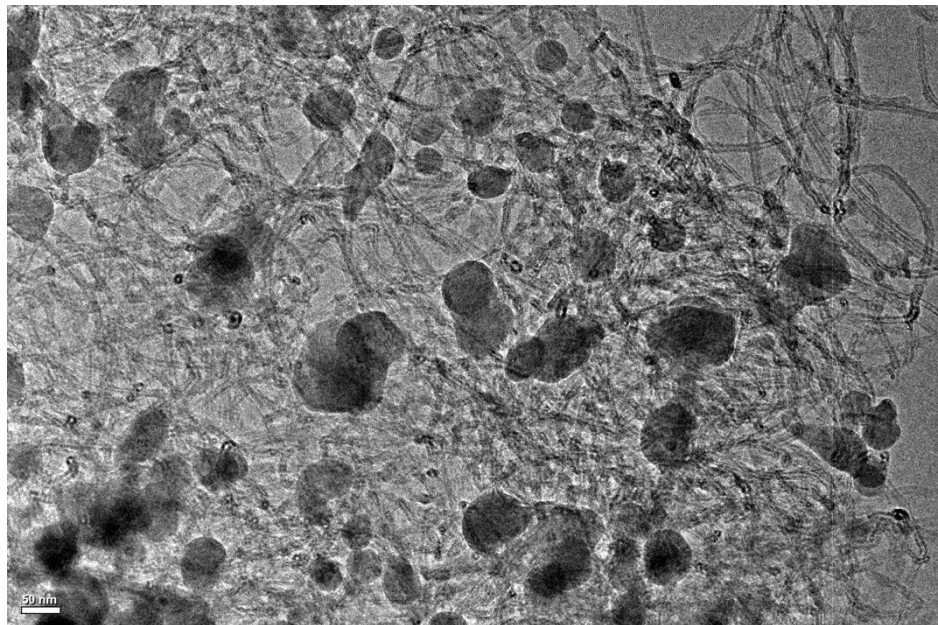
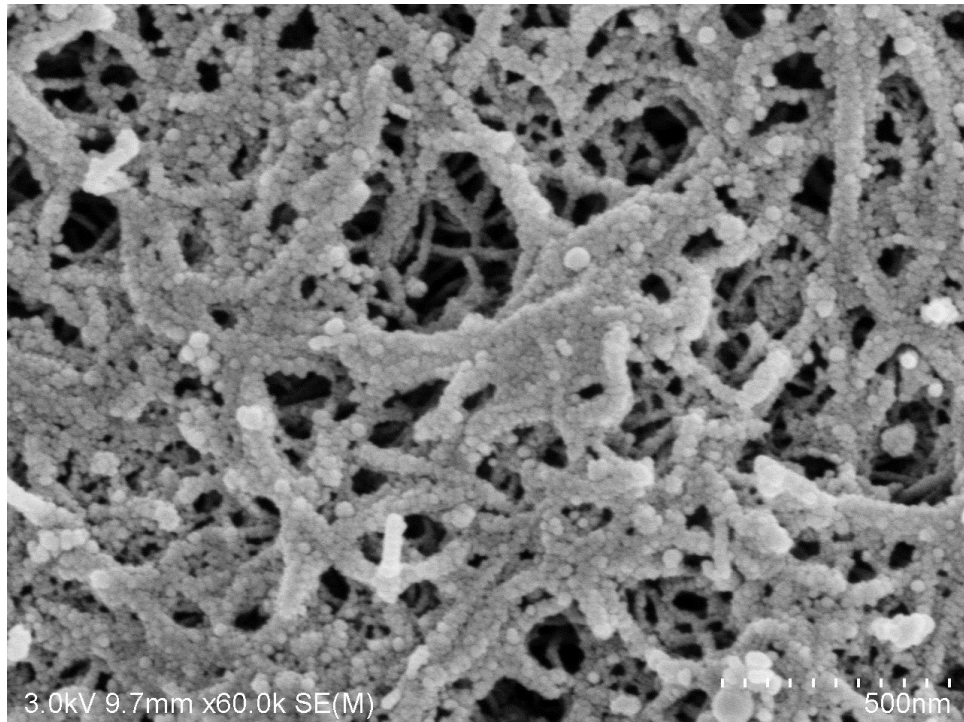
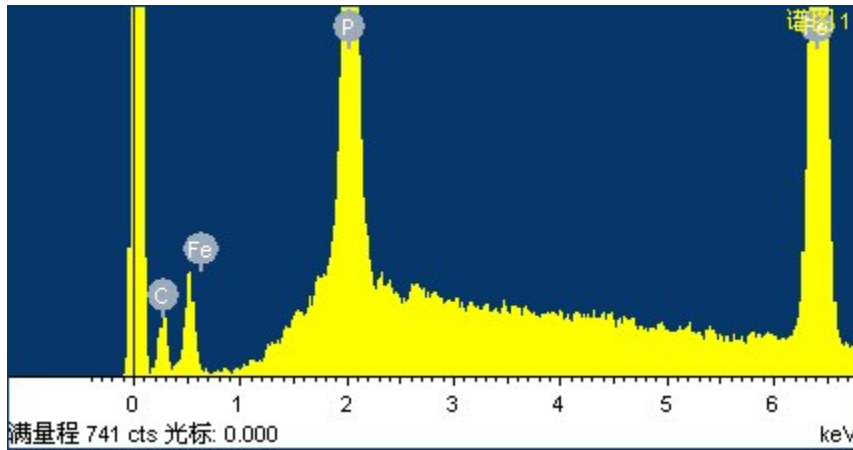
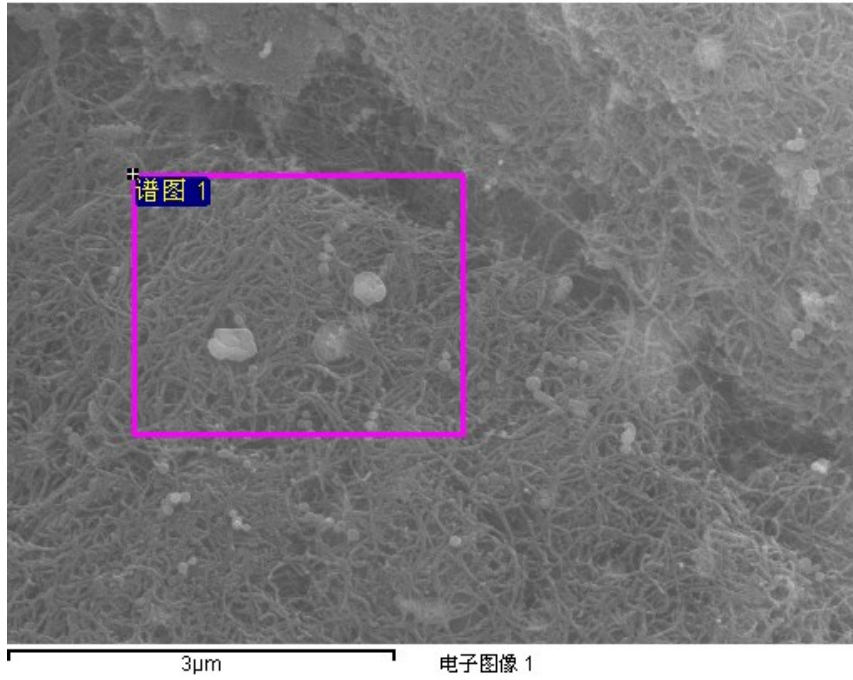


Fig S4. SEM, TEM and EDS analysis result of Fe<sub>2</sub>P(IL<sub>4</sub>)/CNTs





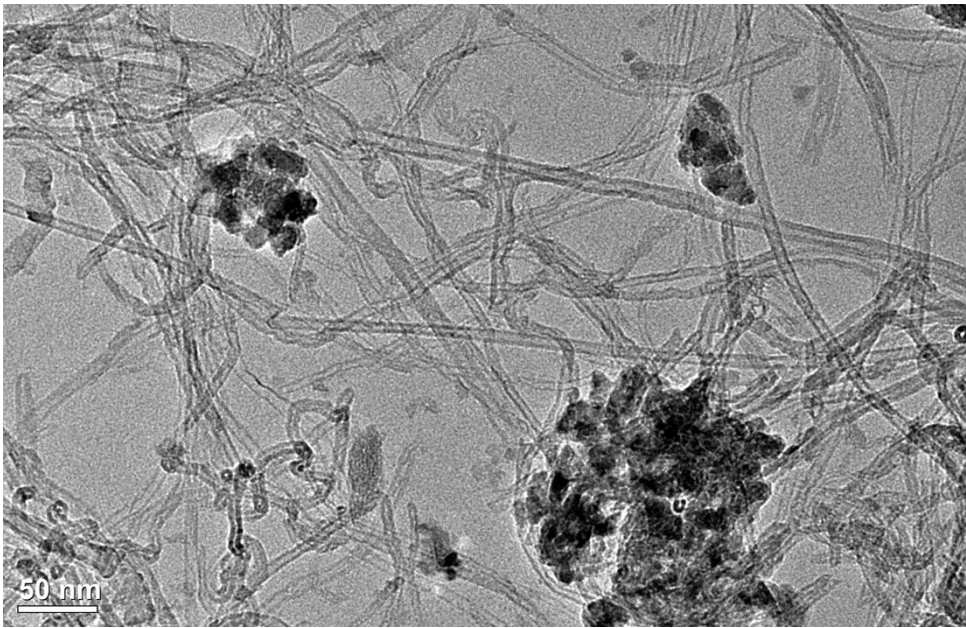
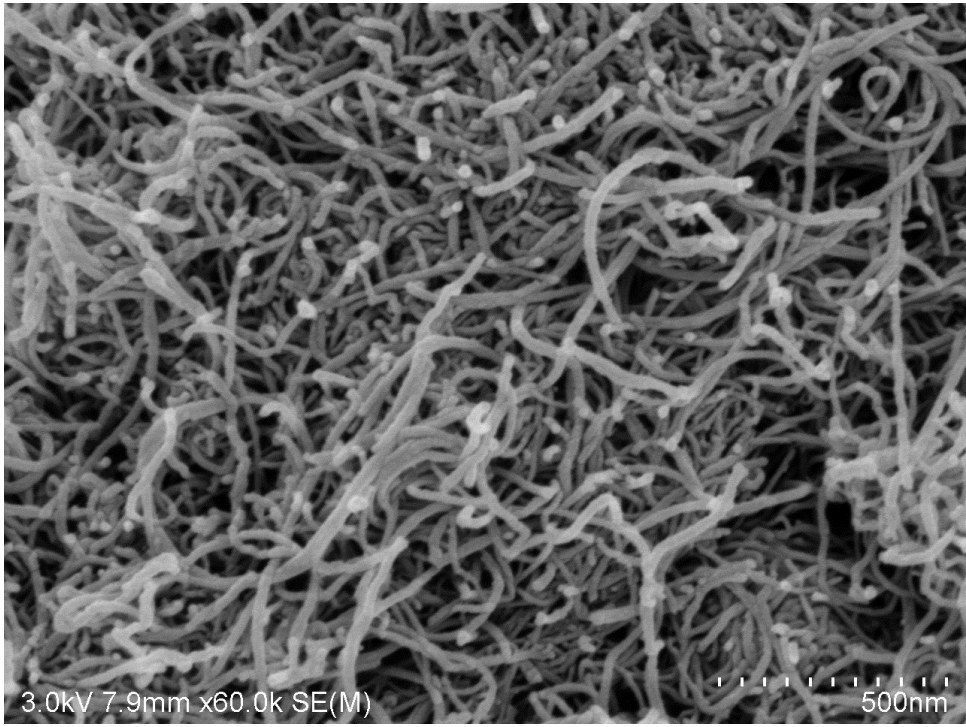
Analysis time = 4

Standard:

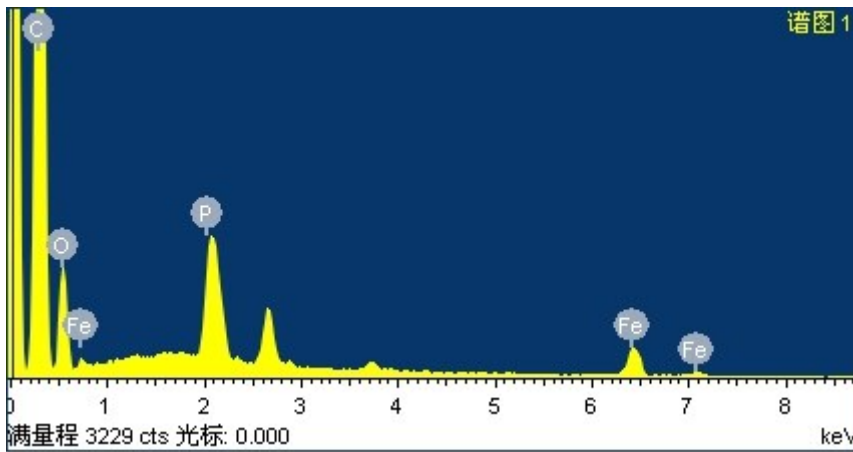
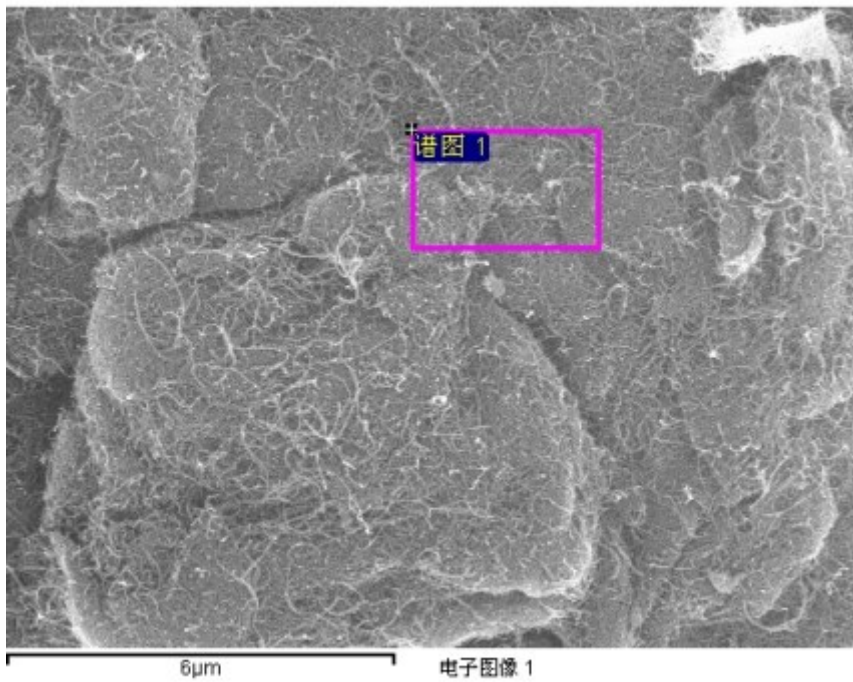
- C CaCO<sub>3</sub>
- O SiO<sub>2</sub>
- P GaP
- Fe Fe

element	Weight percentage	Atom percentage
C K	15.33	37.46
O K	8.63	15.82
P K	16.05	15.20
Fe K	59.99	31.52
total	100.00	

Fig S5. SEM, TEM and EDS analysis result of FeP/CNTs







Analysis time = 4

Standard:

C CaCO<sub>3</sub>

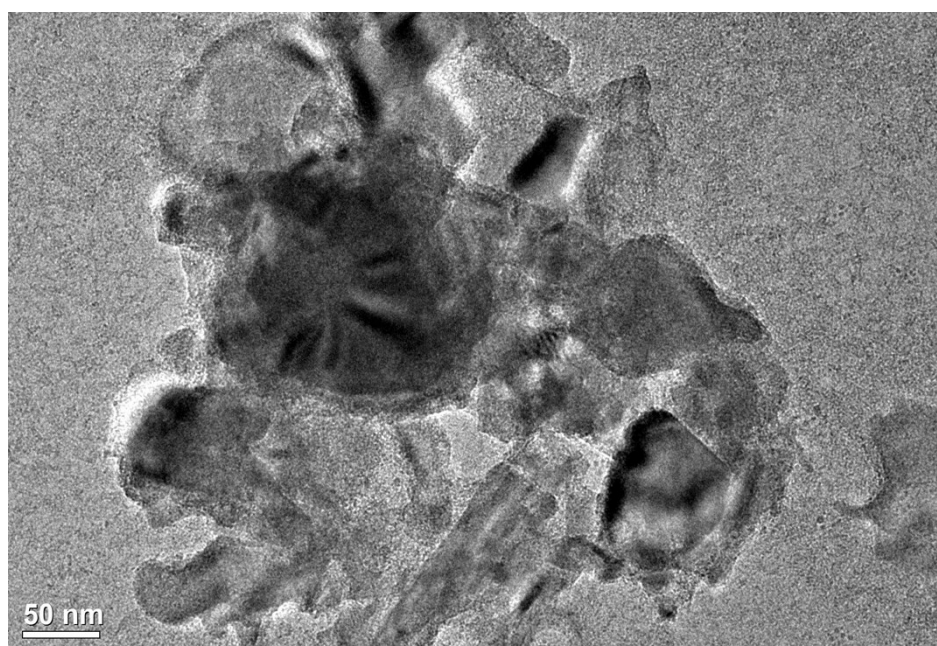
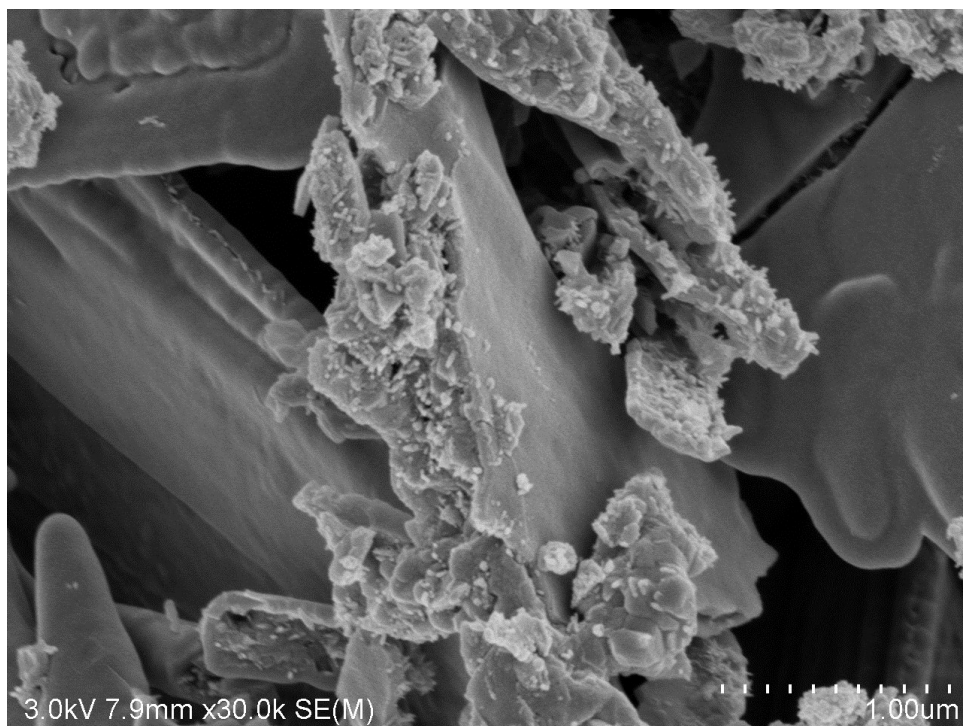
O SiO<sub>2</sub>

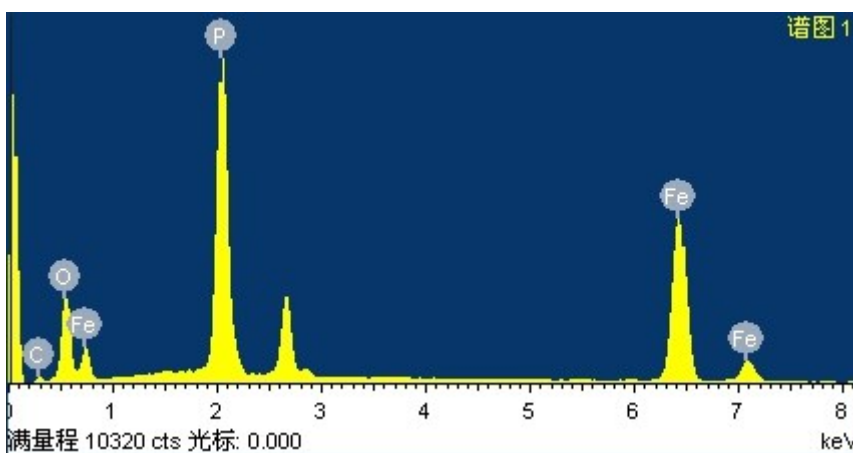
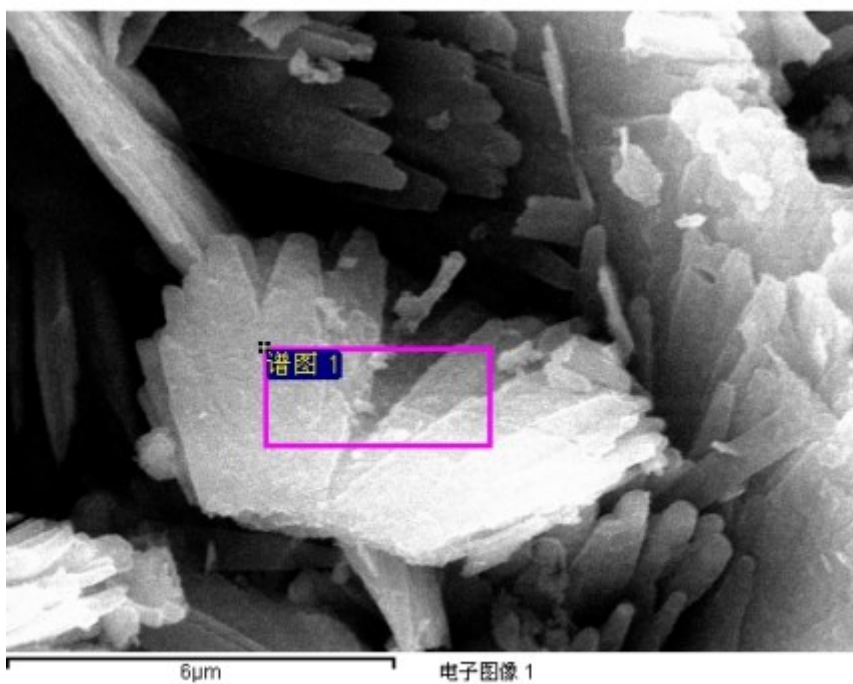
P GaP

Fe Fe

element	Weight percentage	Atom percentage
C K	72.86	79.87
O K	22.86	18.81
P K	1.60	0.68
Fe K	2.69	0.63
total	100.00	

Fig S6. SEM, TEM and EDS analysis result of  $\text{Fe}_2\text{P}(\text{IL6})$





Analysis time = 4

Standard:

C CaCO<sub>3</sub>

O SiO<sub>2</sub>

P GaP

Fe Fe

element	Weight percentage	Atom percentage
C K	6.31	15.02
O K	21.45	39.42
P K	15.18	14.40
Fe K	57.23	30.04
total	100.00	