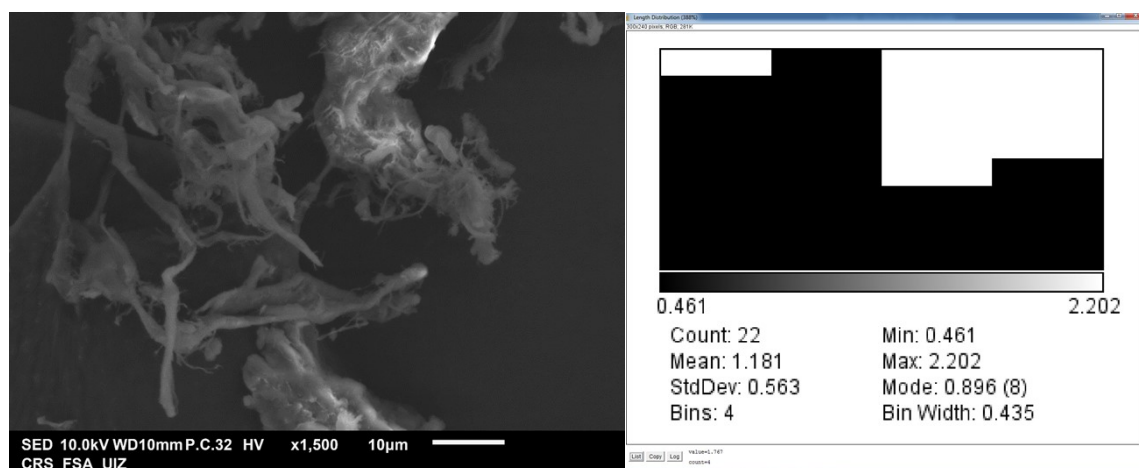


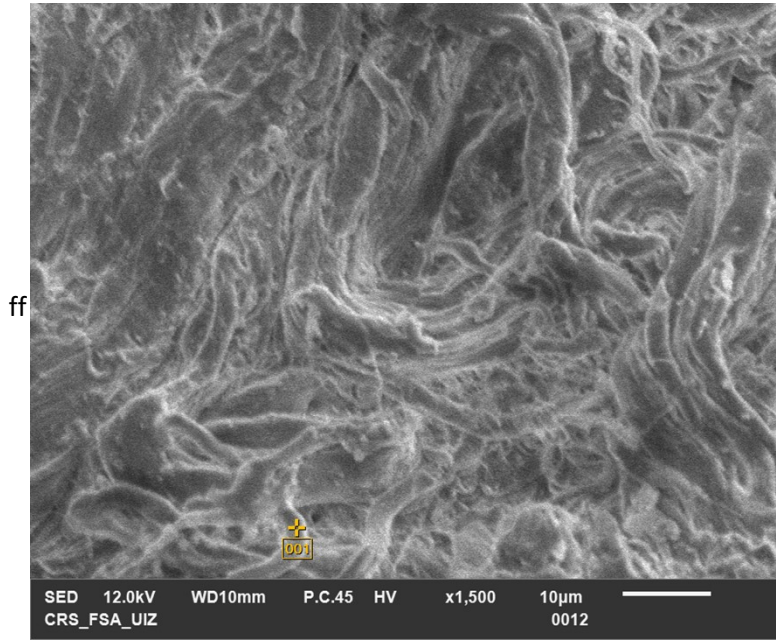
## Supporting material



Results						
File	Edit	Font	Results			
	Area	Mean	Min	Max	Angle	Length
1	0.039	90.881	49	108.630	135	1.131
2	0.071	99.672	88	115.000	180	2.100
3	0.039	63.918	58.747	69.723	-135	1.131
4	0.074	66.583	60.785	75.000	-129.472	2.202
5	0.054	79.884	41.000	98.000	-119.745	1.612
6	0.052	74.838	66.792	82.200	-140.356	1.527
7	0.067	90.626	54.217	104.260	176.121	1.959
8	0.017	61.160	48.109	70.864	135.000	0.461
9	0.017	61.160	48.109	70.864	135.000	0.461
10	0.037	82.076	60.936	90.199	-157.521	1.053
11	0.048	83.362	69.987	93.801	-146.689	1.410
12	0.024	63.696	54.342	73.554	138.814	0.693
13	0.026	54.926	39.978	62.439	180.000	0.717
14	0.042	63.012	44.070	73.195	161.565	1.237
15	0.037	84.153	72.145	92.578	-154.231	1.079
16	0.040	89.557	78.291	101.455	-124.592	1.175
17	0.026	78.443	67.426	86.595	-95.194	0.720
18	0.032	53.974	39.452	63.810	157.068	0.933

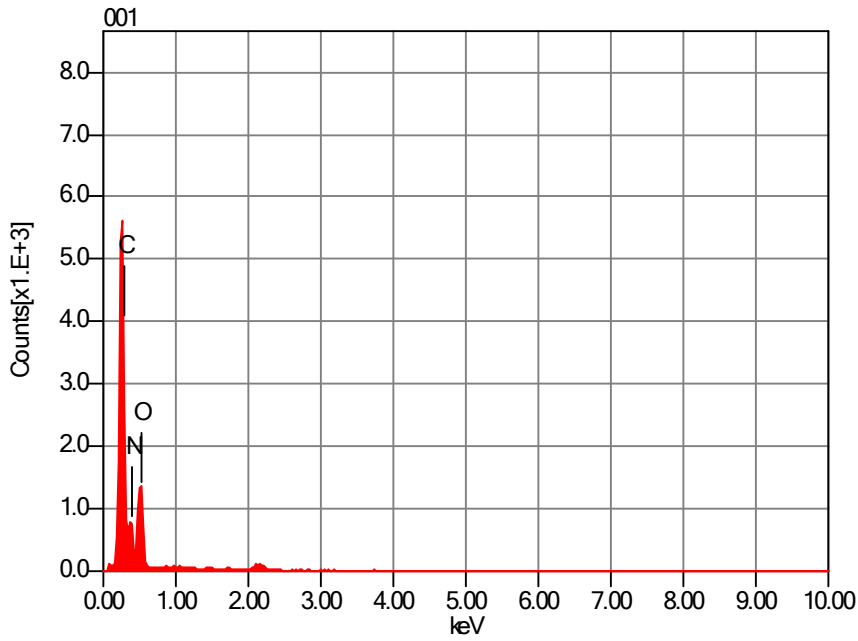
Figure A1. SEM image, results and size distribution histogram from ImageJ software

001



Volt : 12.00 kV  
 Mag. : x 1,500  
 Date : 2021/03/30  
 Pixel : 1280 x 960

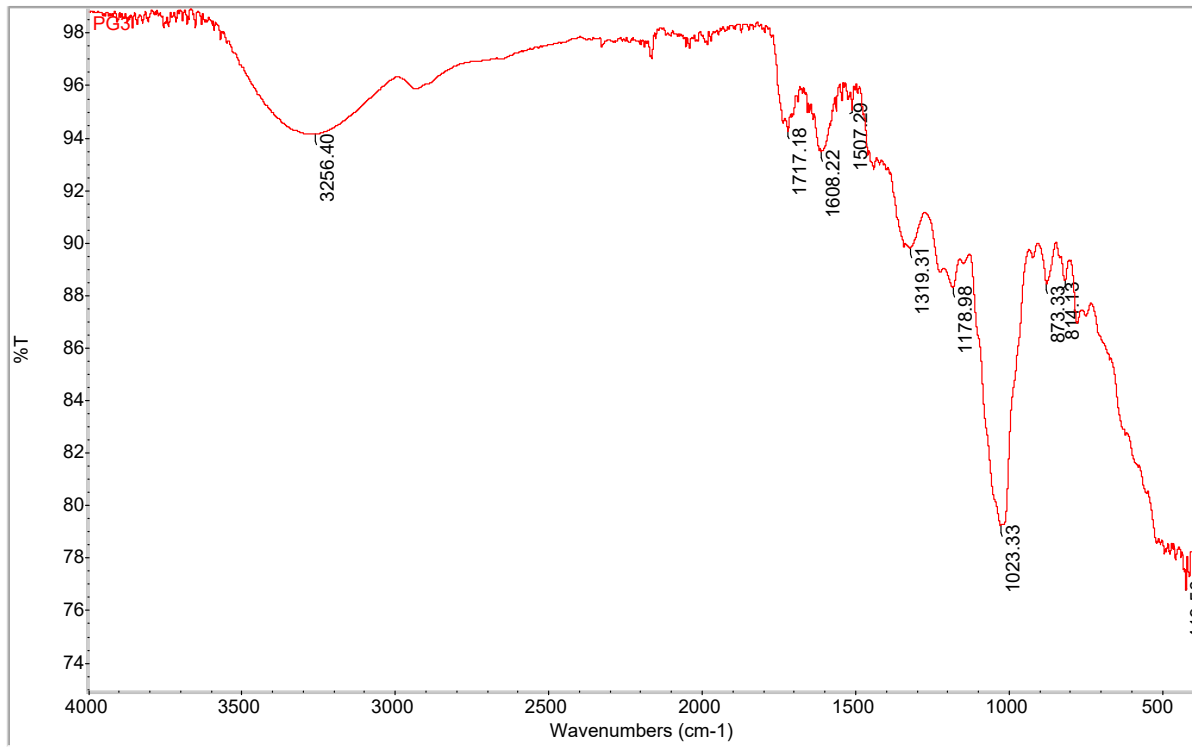
ff



Acquisition Condition  
 Instrument : IT100  
 Volt : 12.00 kV  
 Current : ---  
 Process Time : T4  
 Live time : 60.00 sec.  
 Real Time : 61.53 sec.  
 DeadTime : 3.00 %  
 Count Rate : 1251.00 CPS

Formula	mass%	Atom%	Sigma	Net	K ratio	Line
C	54.35	60.72	0.05	60625	0.0101507	K
N*	8.36	8.01	0.04	13904	0.0145691	K
O	37.29	31.27	0.17	22736	0.0151051	K

**Figure A2. SEM image and EDS results**



**Figure A3. FTIR of phenolic extract (PE) : the crosslinker agent**