

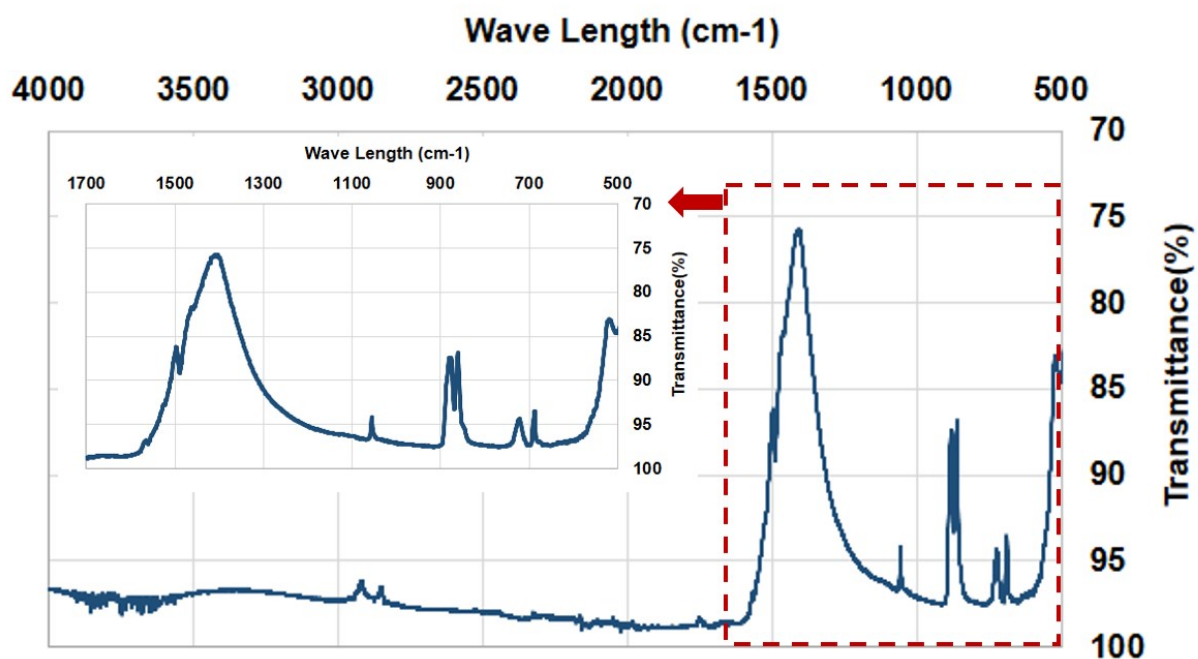


Figure S1- Solid FTIR of alkali ternary eutectic salts (Li_2CO_3 : 43.5%, Na_2CO_3 : 31.5%, K_2CO_3 : 25 % mole)

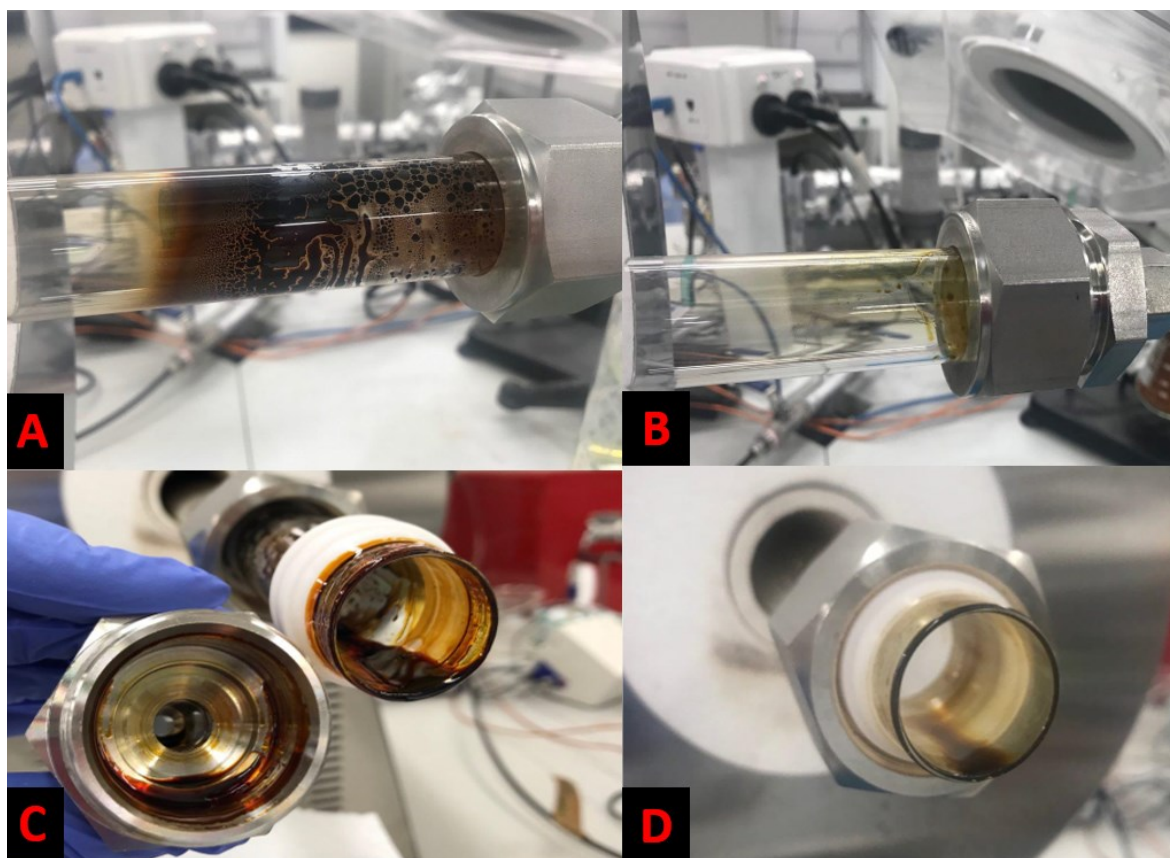


Figure S2- Reduced amount of tar generation during pyrolysis of cellulose at two temperatures under N₂ (Cel-350 (A), Cel50-350 (B), Cel-600(C), Cel50-600(D))

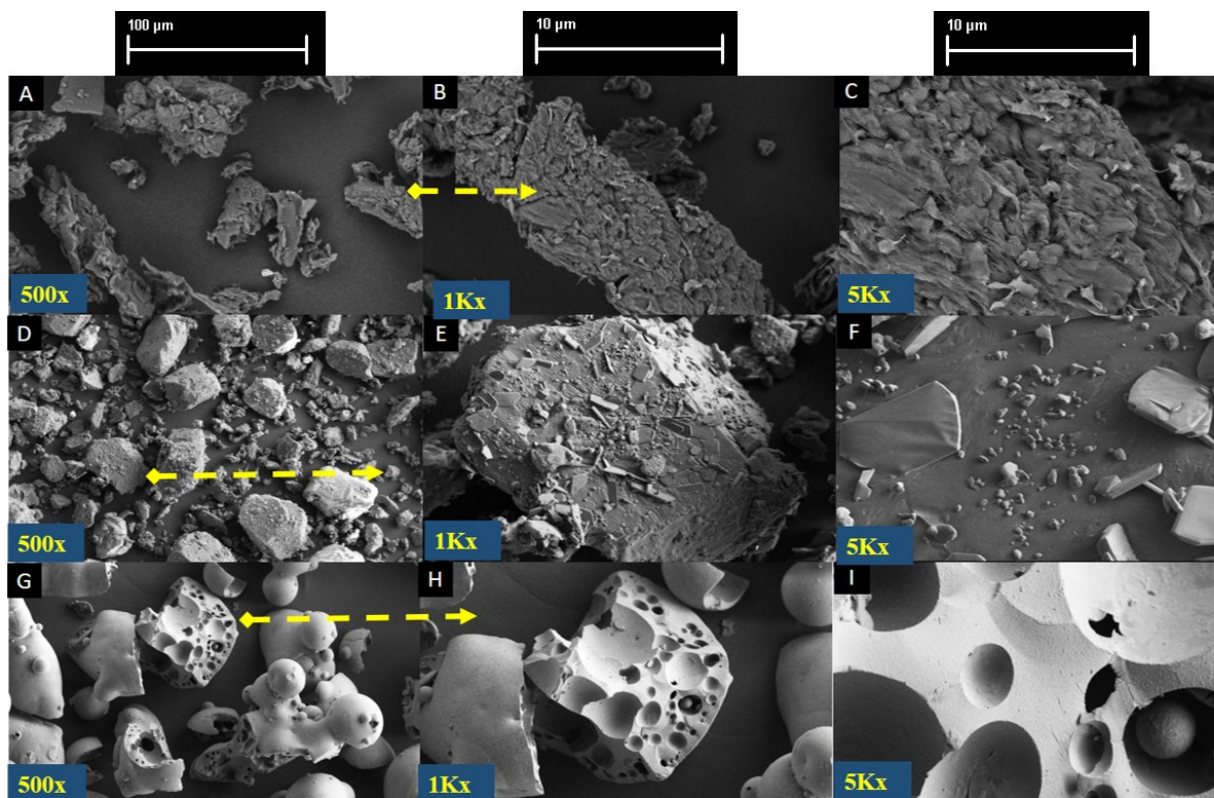


Figure S3- SEM images of raw feedstock in different magnification and particle size (woody biomass (A,B,C), Cellulose (D,E,F) and lignin(G,H,I))

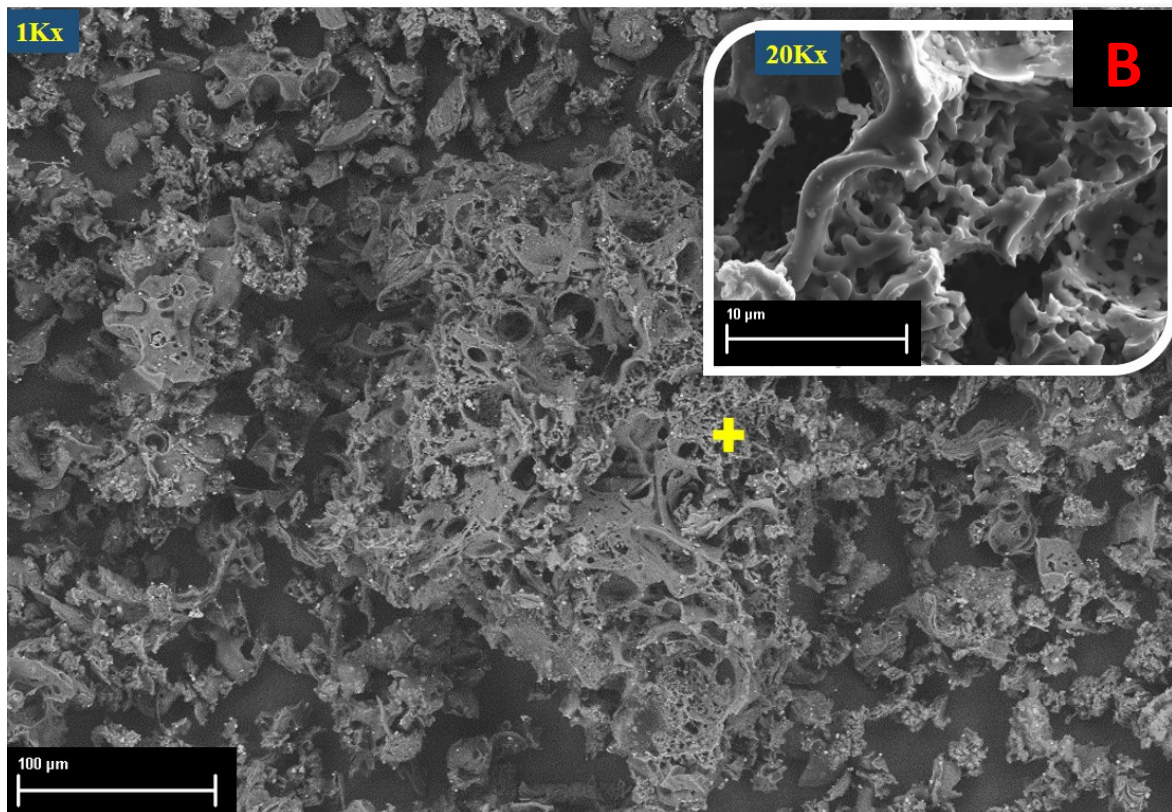
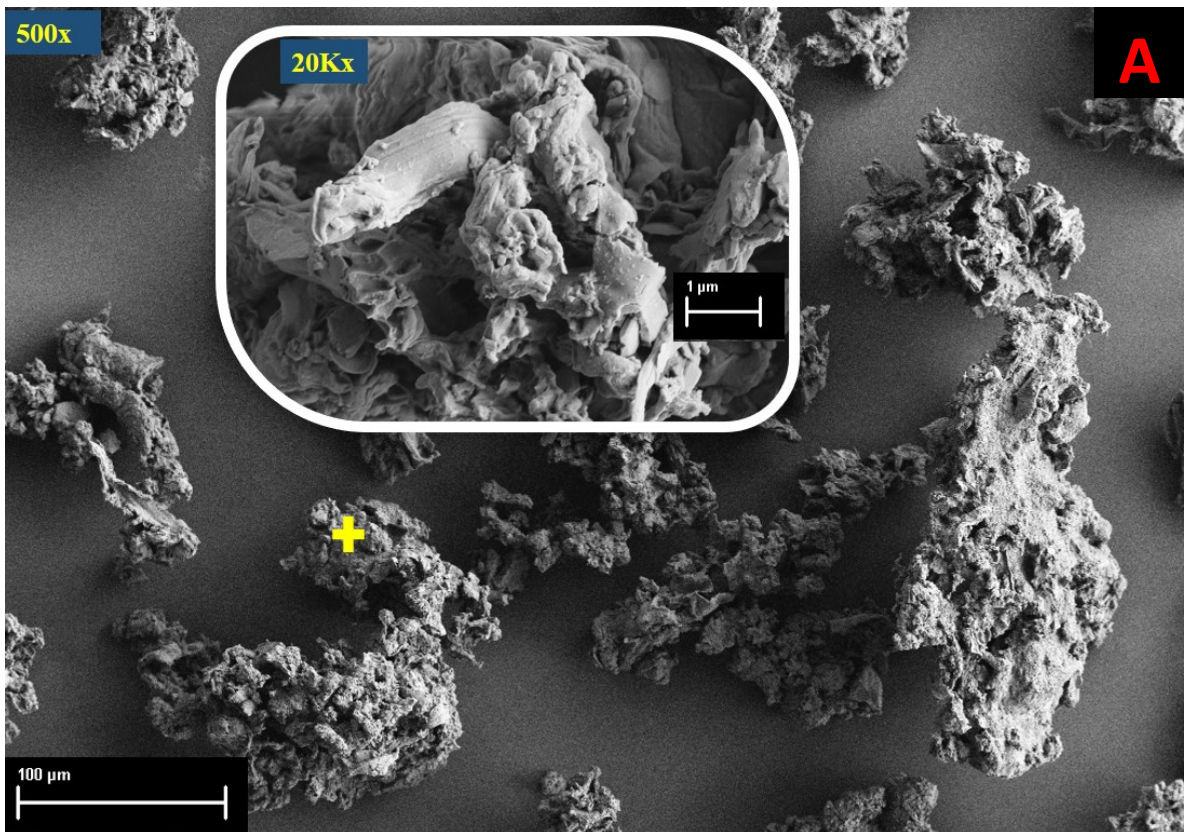


Figure S4- SEM images of different particles of Bio50 at 350°C (A) and 600°C (B). The selected area for higher magnification is spotted with yellow cross sign

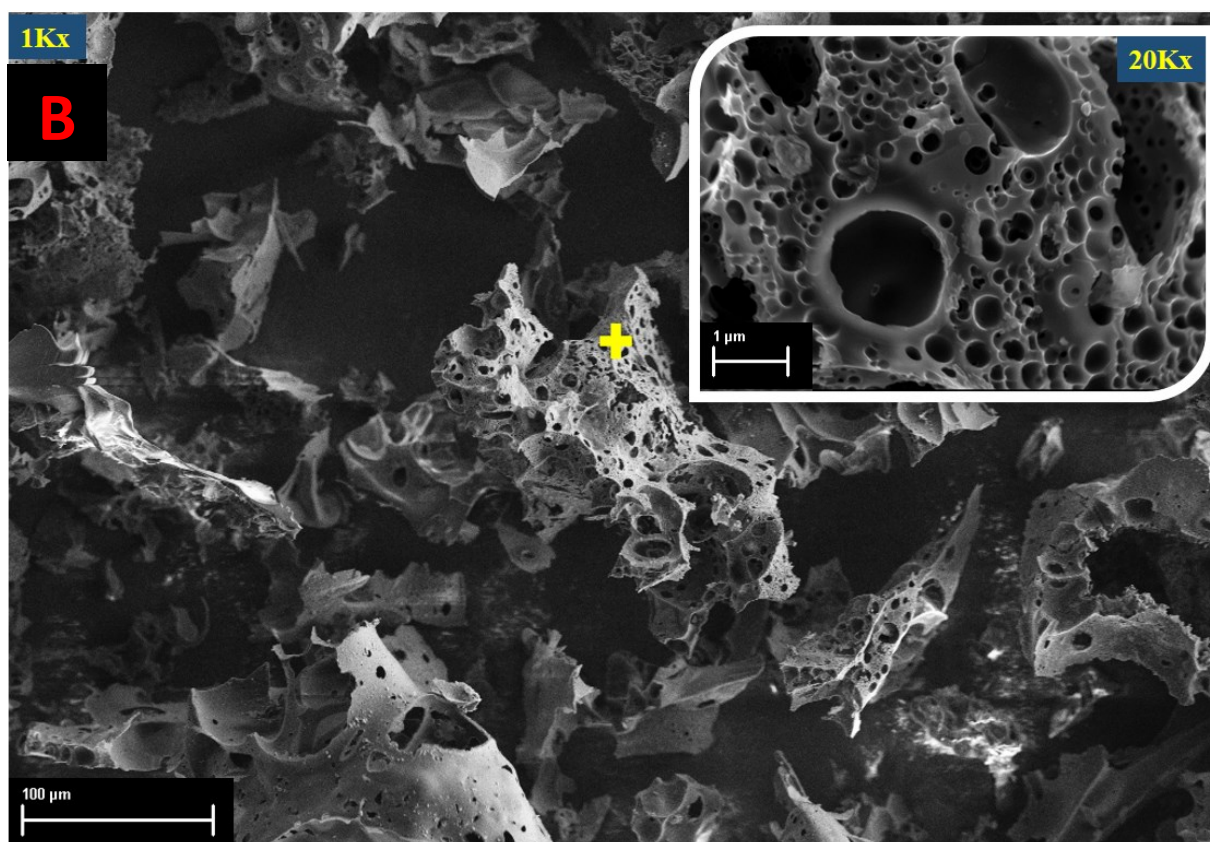
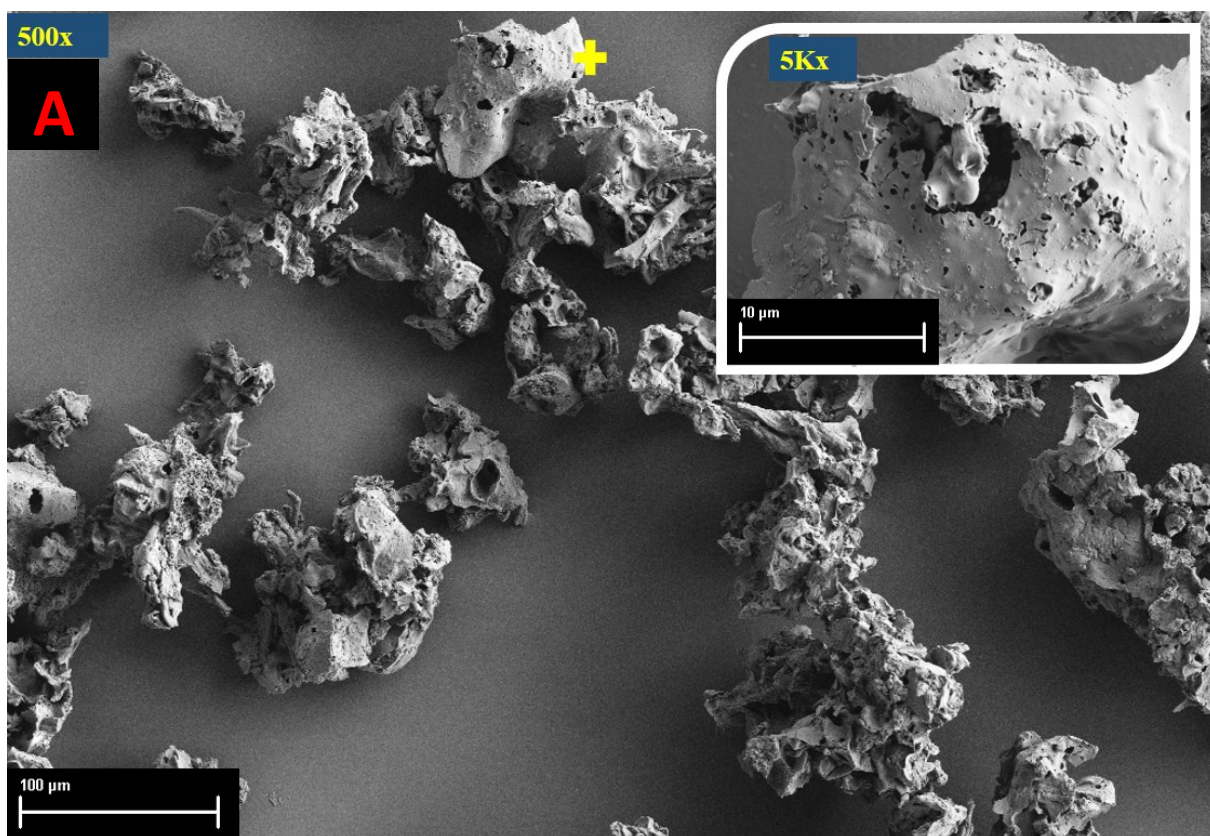


Figure S5- SEM images of different particles of Cel50 at 350°C (A) and 600°C (B). The selected area for higher magnification is spotted with yellow cross sign

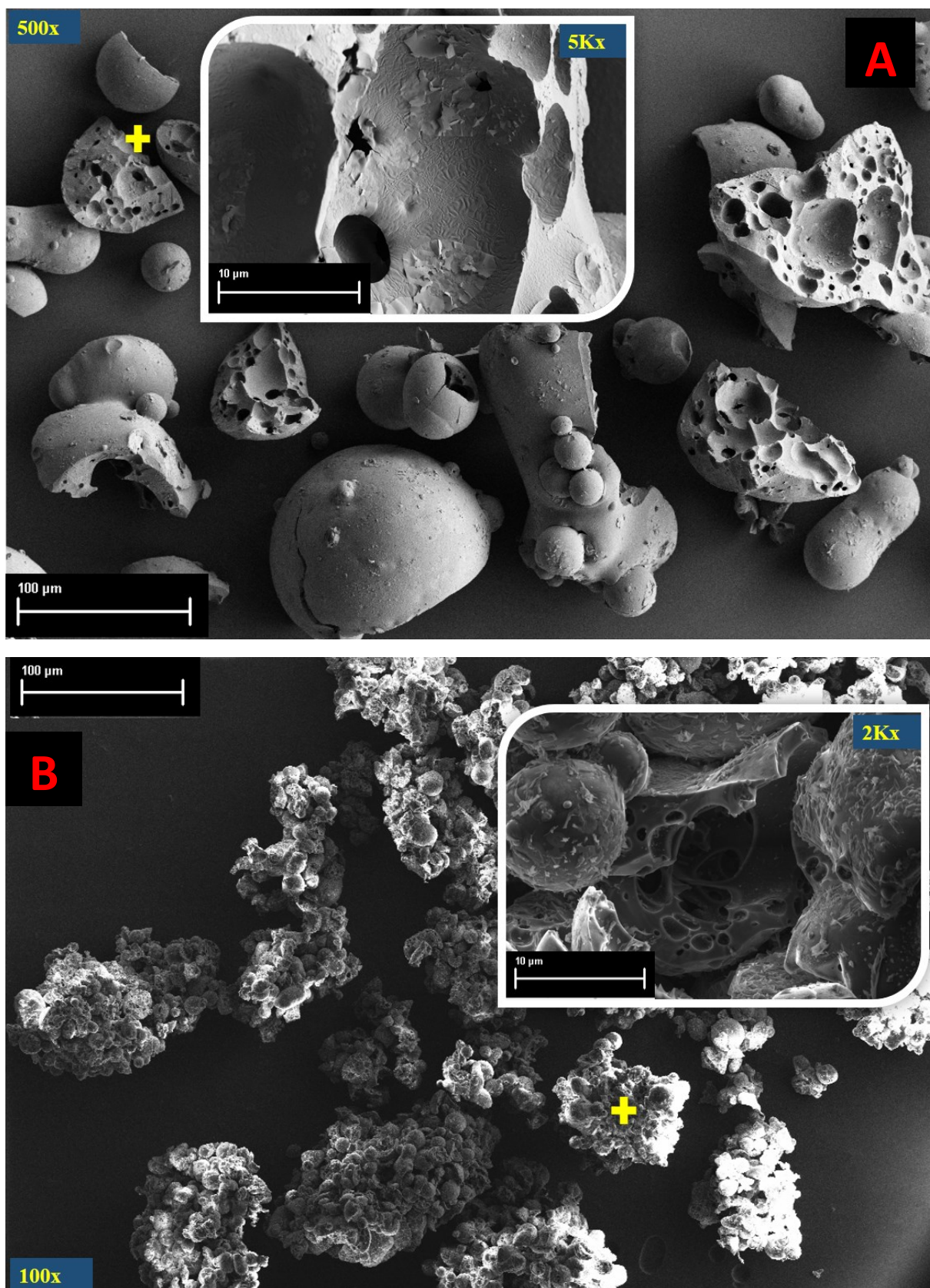


Figure S6- SEM images of different particles of Lig50 at 350°C (A) and 600°C (B). The selected area for higher magnification is spotted with yellow cross sign

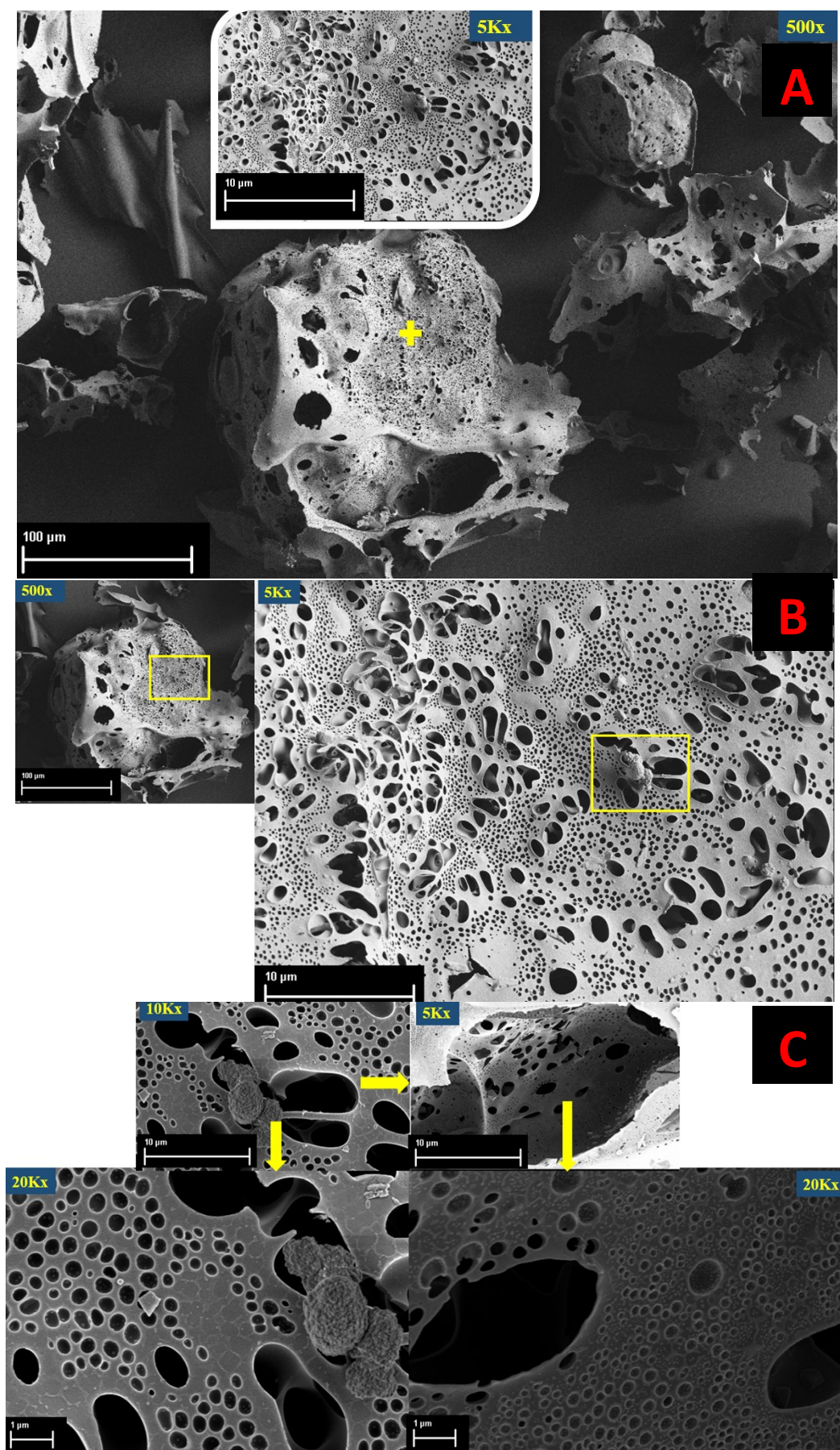


Figure S7- SEM images of carbonate blockage effect CC50-600(A-C)

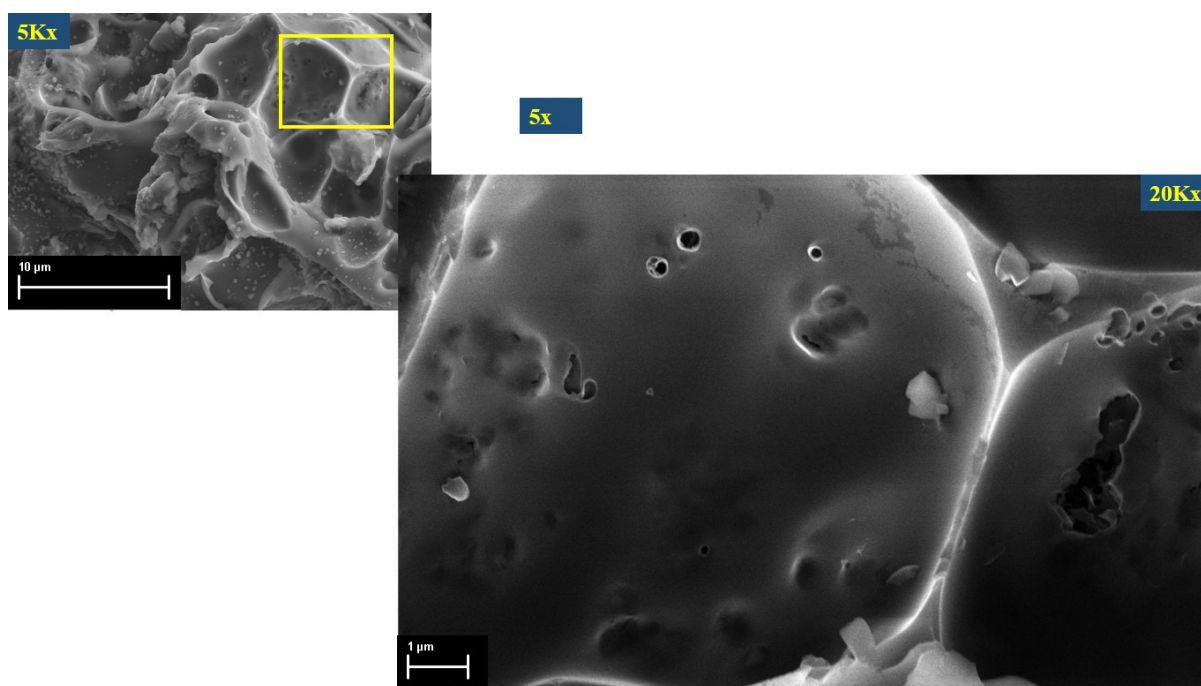


Figure S8- SEM images of carbonate blockage effect BC50-600

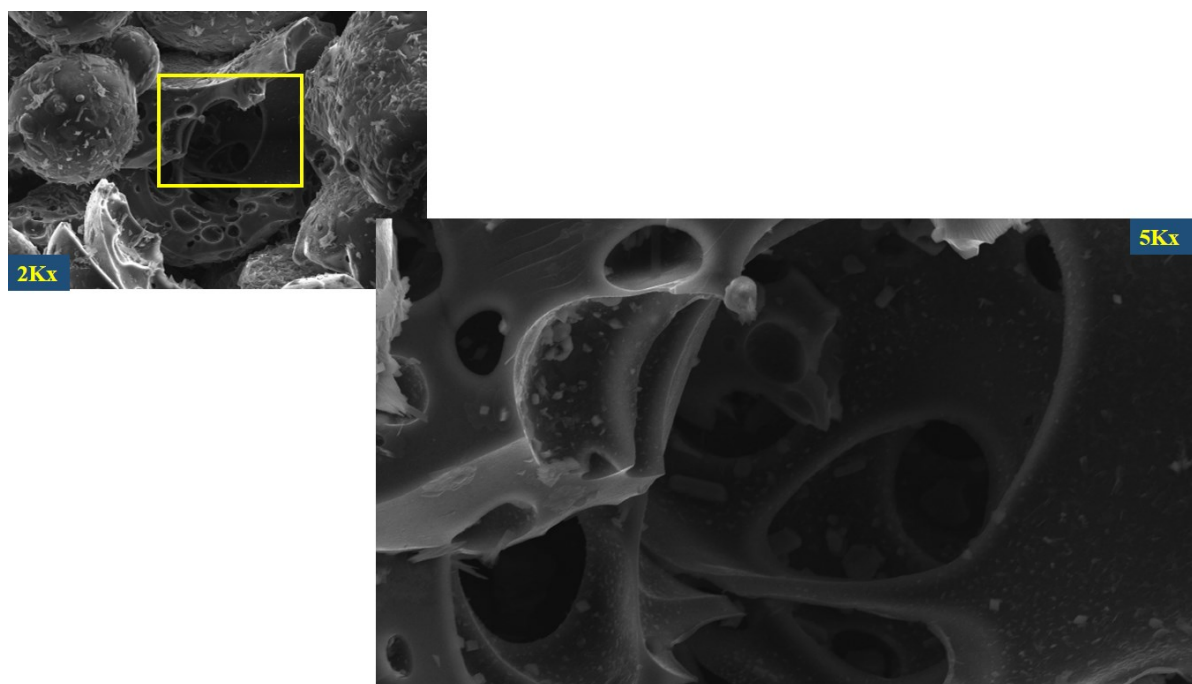


Figure S9- SEM images of carbonate blockage effect in LC50-600

Table S1- Details of solid-FTIR observed peak for all samples at 350 (°C)

Oxygen bonds	Wavenumber (cm⁻¹)	BC-350	BC50-350	LC-350	LC50-350	CC-350	CC50-350
C-H out of plane blending	625-1000	789	861	608 773 956		780	
C-O stretching	1000-1160	1087	1089	1063 1115	1065	1000	
C-H out of plane blending	1000-1200	1179			1197	1200	
C-O stretching	1200-1350	-		1318 1388			1267 1375
C-H bending	1400-1480	1453	1421		1404	1423	1447
C=C bending	1450-1690	1515 1577	1527 1625	1540 1628	1569 1630	1585 1689	1550 1616
C-H stretching	2800-3000	2694 2975	2969	2879 2978	2969	2950	2860 2955
O-H stretching	3200-3700	3722	3323 3750	3392	3980	3771	3293

Table S2- Details of solid-FTIR observed peak for all samples at 600 (°C)

Oxygen bonds	Wavenumber (cm⁻¹)	BC-600	BC50-600	LC-600	LC50-600	CC-600	CC50-600
C-H out of plane blending	625-1000	749 798 827	840 953	822	662 702 825 970	858	741 808 879
C-O stretching	1000-1160	1148		1156	1000	1127	
C-H out of plane blending	1000-1200						
C-O stretching	1200-1350	1244 1370					1364
C-H bending	1400-1480		1404			1411	1418
C=C bending	1450-1690	1580	1533	1544 1684	1490		1608
C-H stretching	2800-3000	2962	2876 2971		2984		
O-H stretching	3200-3700	3771	3820	3618	3762	3802	3779

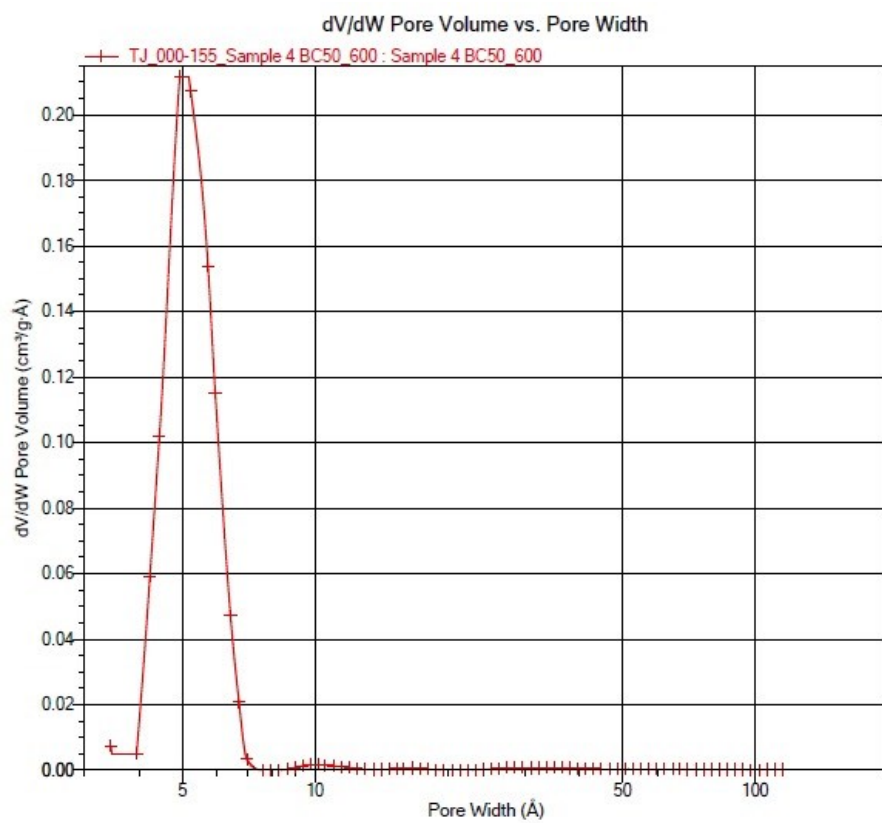
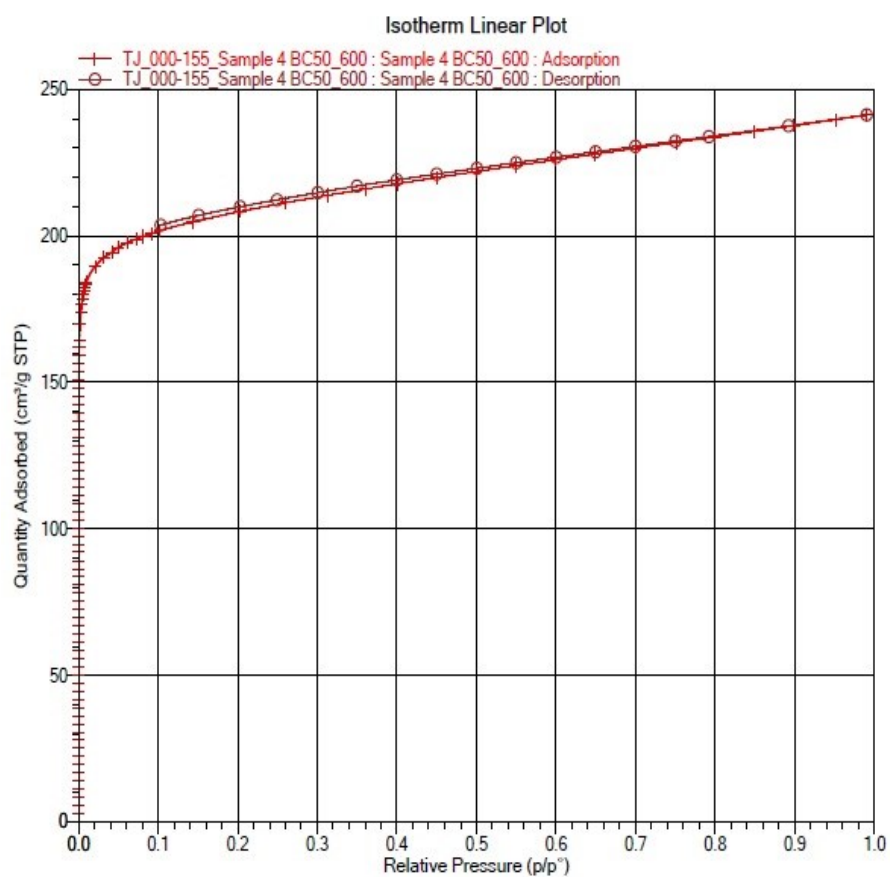


Figure S10- Isotherm and pore distribution comparing graph of BC-600 and BC50-600

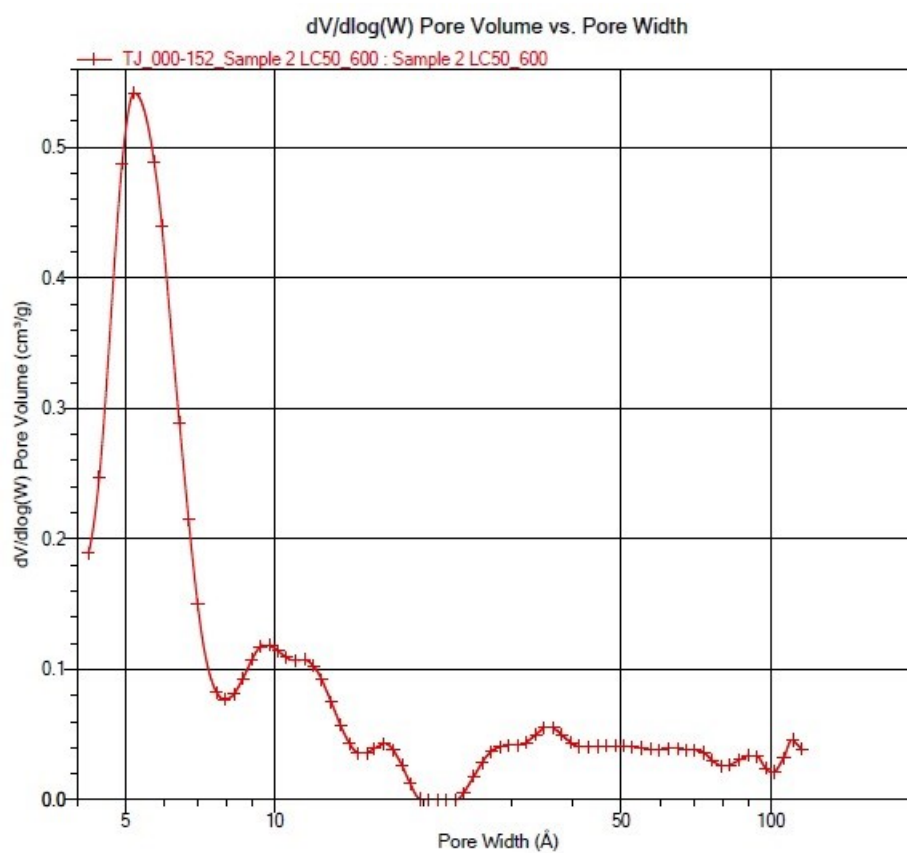
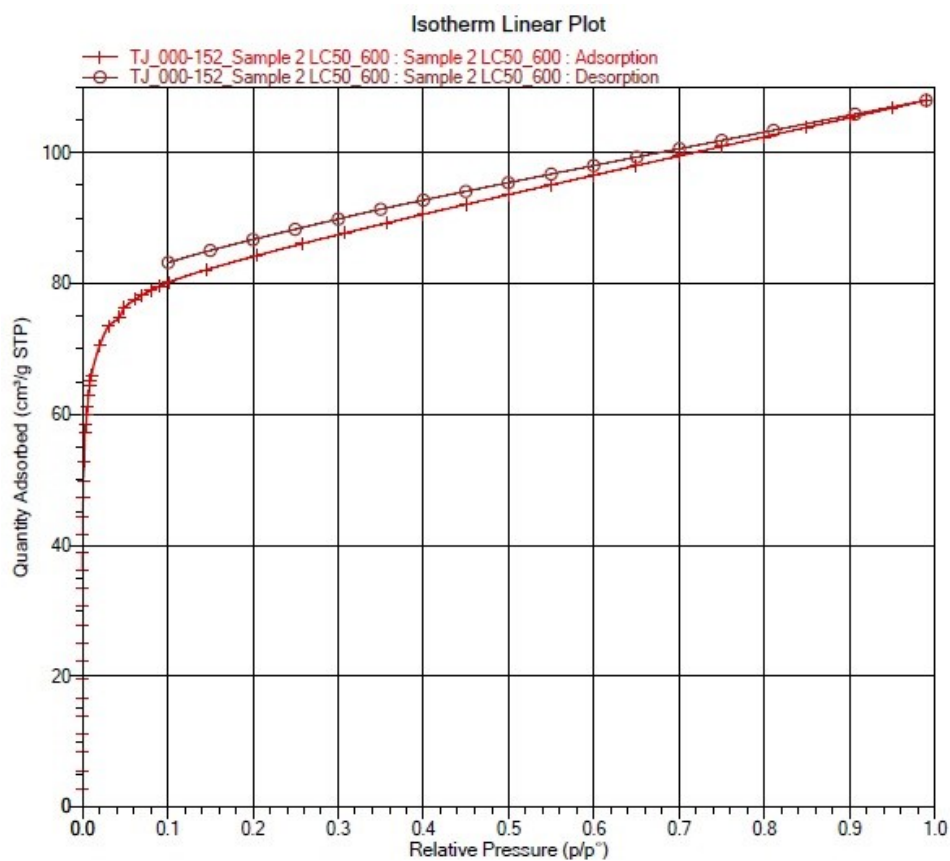


Figure S11- Isotherm and pore distribution comparing graph of LC-600 and LC50-600