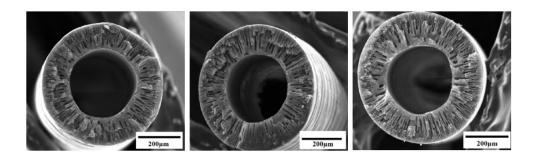
Supplementary Information

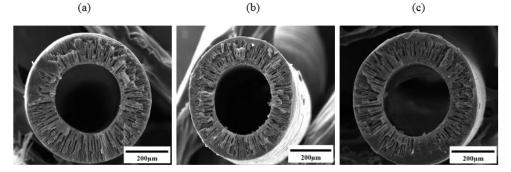
For

Polyethersulfone (PES)/Cellulose Acetate Butyrate (CAB) Composite Hollow Fiber Membranes for BTEX Separation from Produced Water

Shangwen Zha^{a, b}, Jianjia Yu^{a,*}, Guoyin Zhang^a, Ning Liu^a and Robert Lee^a

^{a.} Petroleum Recovery Research Center, New Mexico Institute of Mining and Technology, Socorro, NM 8780, United States. ^{b,} Materials Engineering Department, New Mexico Institute of Mining and Technology, Socorro, NM, 87801, United States.





(e)

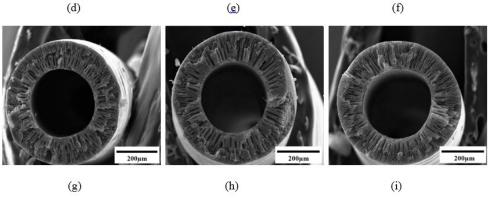
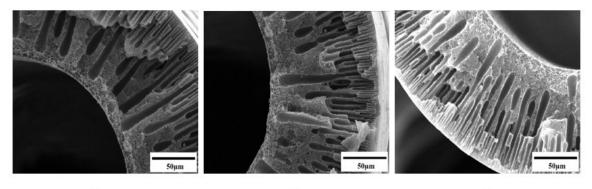


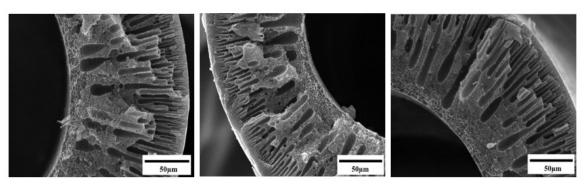
Fig. S1. Cross sectional images of all the composite PES/CAB hollow fiber membranes: (a) M1; (b) M2, (c) M3; (d) M4, (e) M5; (f) M6; (g) M7; (h) M8 and (i) M9.



(a)

(b)

(c)



(d)

(e)



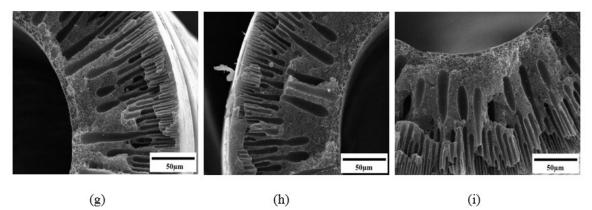
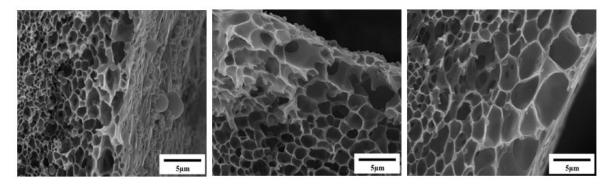


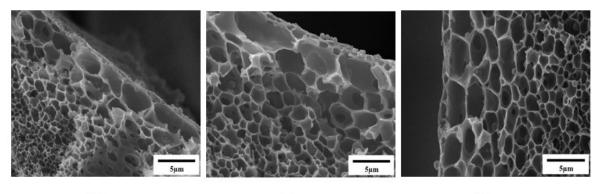
Fig. S2. Cross sectional images of all the composite PES/CAB hollow fiber membranes examined at a higher resolution (600×): (a) M1; (b) M2, (c) M3; (d) M4, (e) M5; (f) M6; (g) M7; (h) M8 and (i) M9.



(a)

(b)

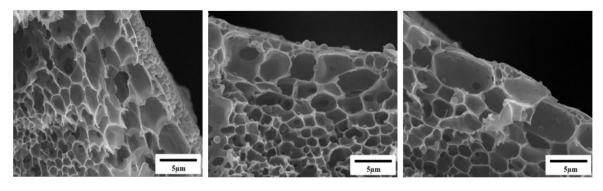




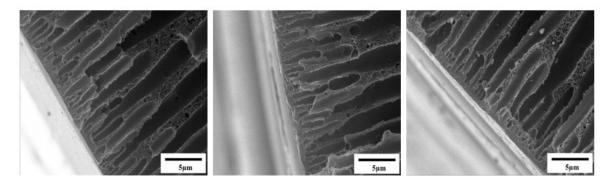
(d)

(e)

(f)



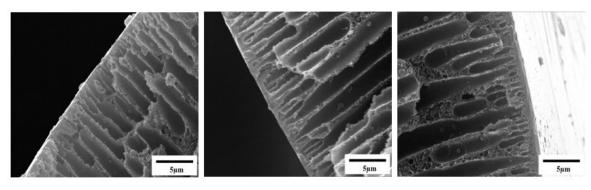
(g) (h) (i) Fig. S3. Cross sectional images close to the inner surface of all the composite PES/CAB hollow fiber membranes examined at a high resolution (5000×): (a) M1; (b) M2, (c) M3; (d) M4, (e) M5; (f) M6; (g) M7; (h) M8 and (i) M9.



(a)

(b)

(c)



(d)

(e)

(f)

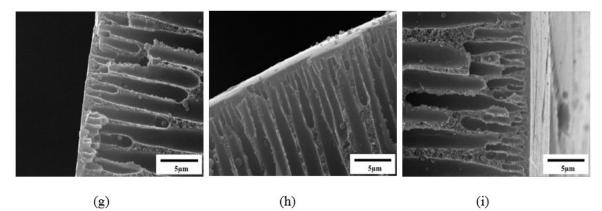


Fig. S4. Cross sectional images close to the outer surface of all the composite PES/CAB hollow fiber membranes examined at a high resolution (5000×): (a) M1; (b) M2, (c) M3; (d) M4, (e) M5; (f) M6; (g) M7; (h) M8 and (i) M9.