

Supplementary Table S1

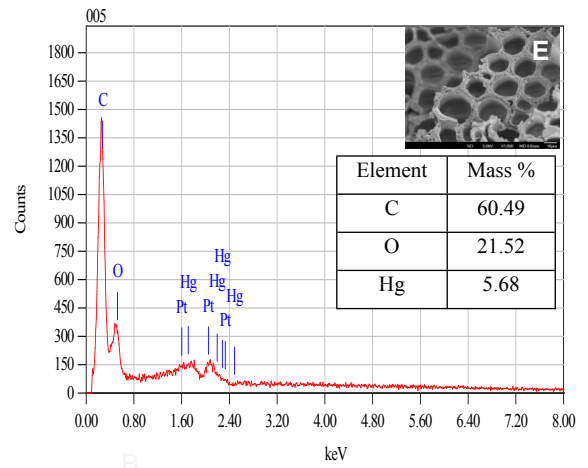
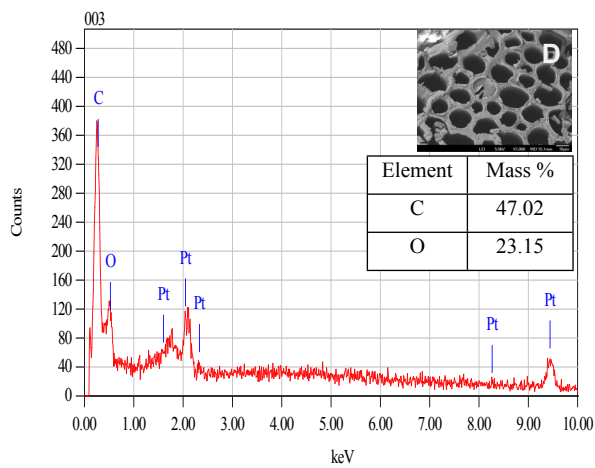
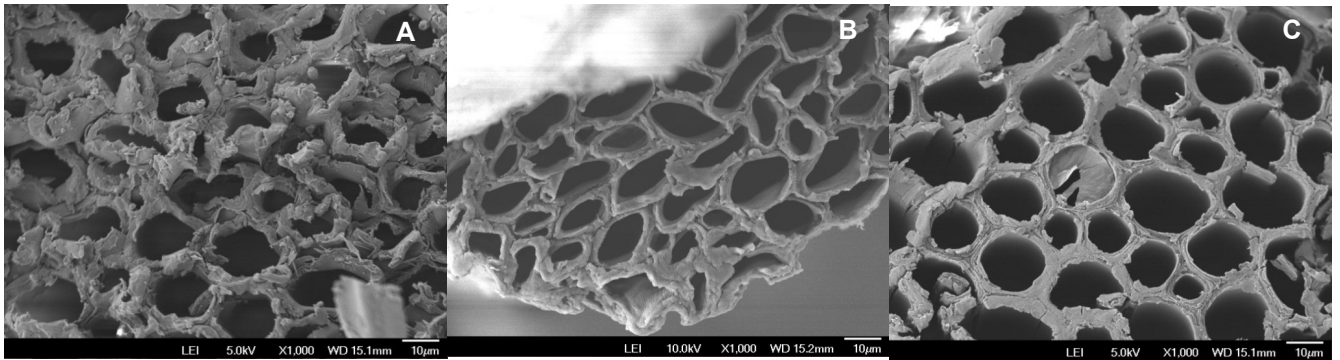
Two- and three-parameter biosorption isotherm models

Two-parameters model	Non-linear form	Linear form
Freundlich	$q_e = K_F C_e^{1/n}$	$\log q_e = \log K_F + \frac{1}{n} \log C_e$
Langmuir	$q_e = \frac{q_m K_L C_e}{1 + K_L C_e}$ $R_L = \frac{1}{K_L + C_o}$	$\frac{1}{q_e} = \frac{1}{q_m} + \frac{1}{b q_m C_e}$
Temkin	$q_e = B \ln (AC_e)$	$q_e = \frac{RT}{B} \ln A + \left(\frac{RT}{B}\right) \ln C_e$
Three-parameters model	Non-linear form	
Redlich-Peterson	$q_e = \frac{AC_e}{1 + BC_e^g}$	
Koble-Corrigan	$q_e = \frac{AC_e^n}{1 + BC_e^n}$	
Sips	$q_e = \frac{q_m s K_s C_e^{ms}}{1 + K_s C_e^{ms}}$	

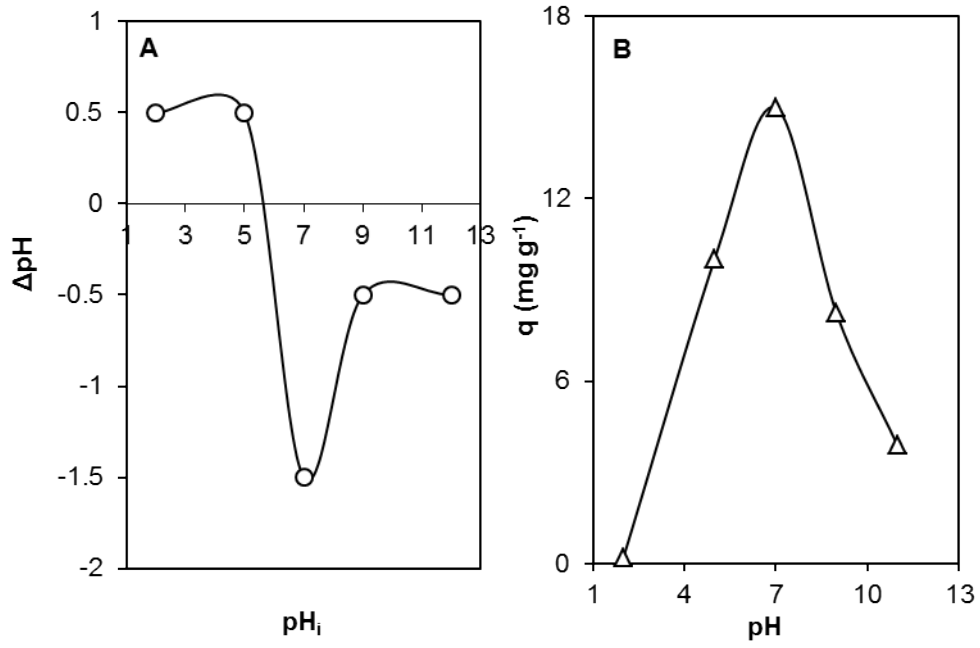
Supplementary Table S2

Four cycles of Hg(II) adsorption-desorption with 0.1 M HCl as desorbing agent

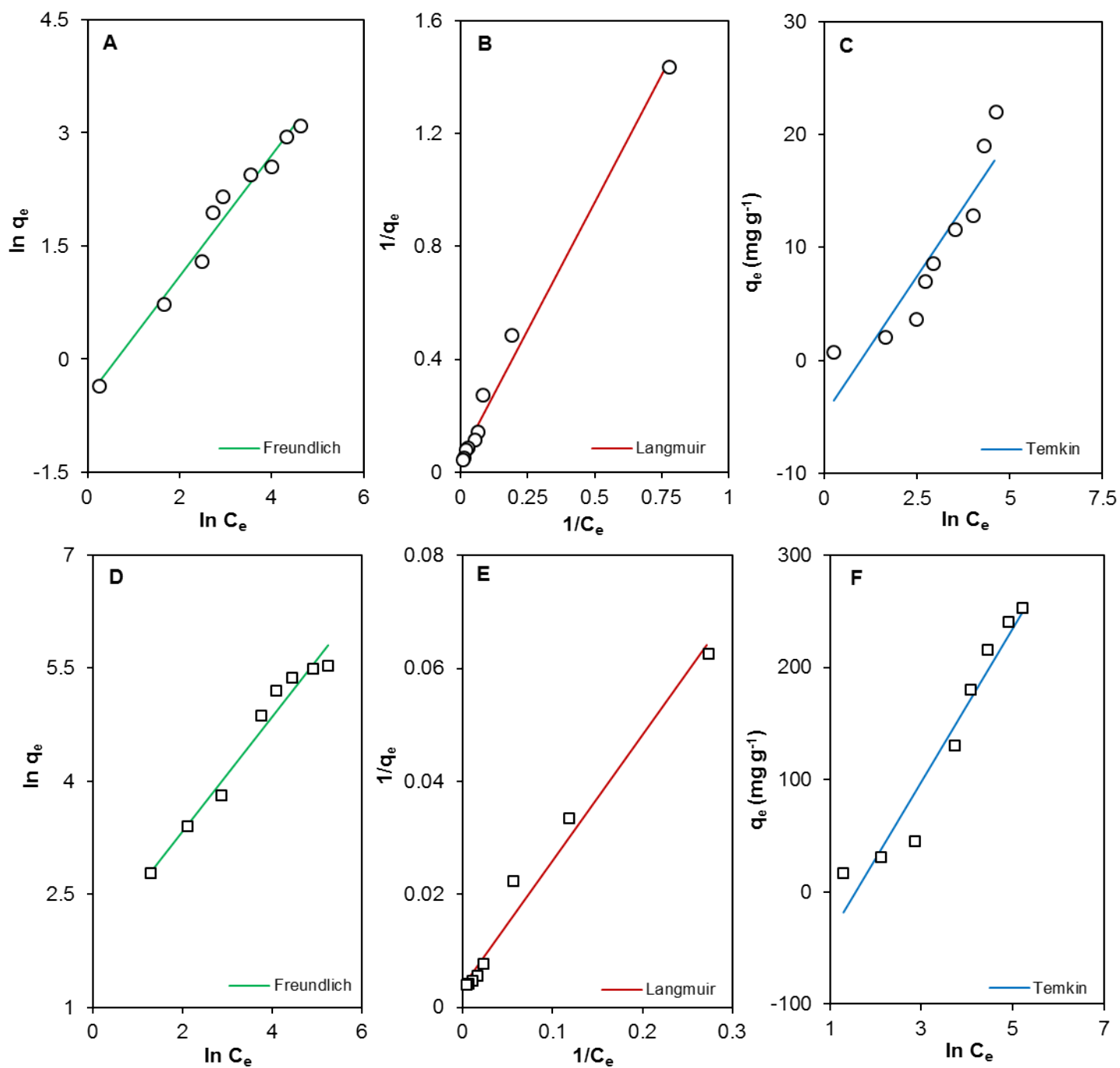
Cycles	Biosorption (%)	Recovery (%)
1	95.2	97.4
2	94	95.6
3	88	91.7
4	85.2	85.6



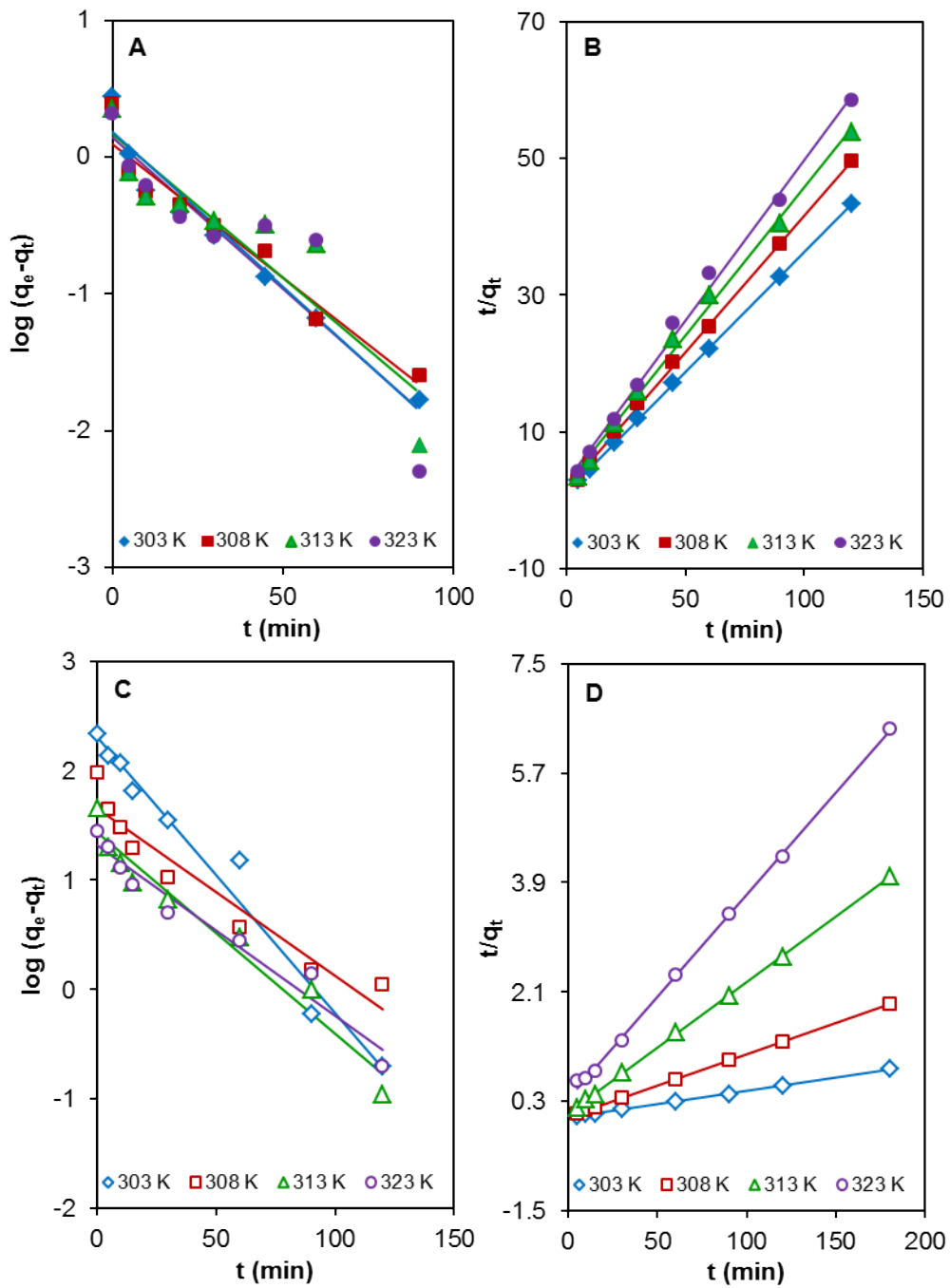
Supplementary Fig. S1 : FESEM images of a) BSF-raw b) BSF-NaOH and c) BSF-HCl and EDX analysis of d) BSF-HCl and e) Hg-BSF-HCl



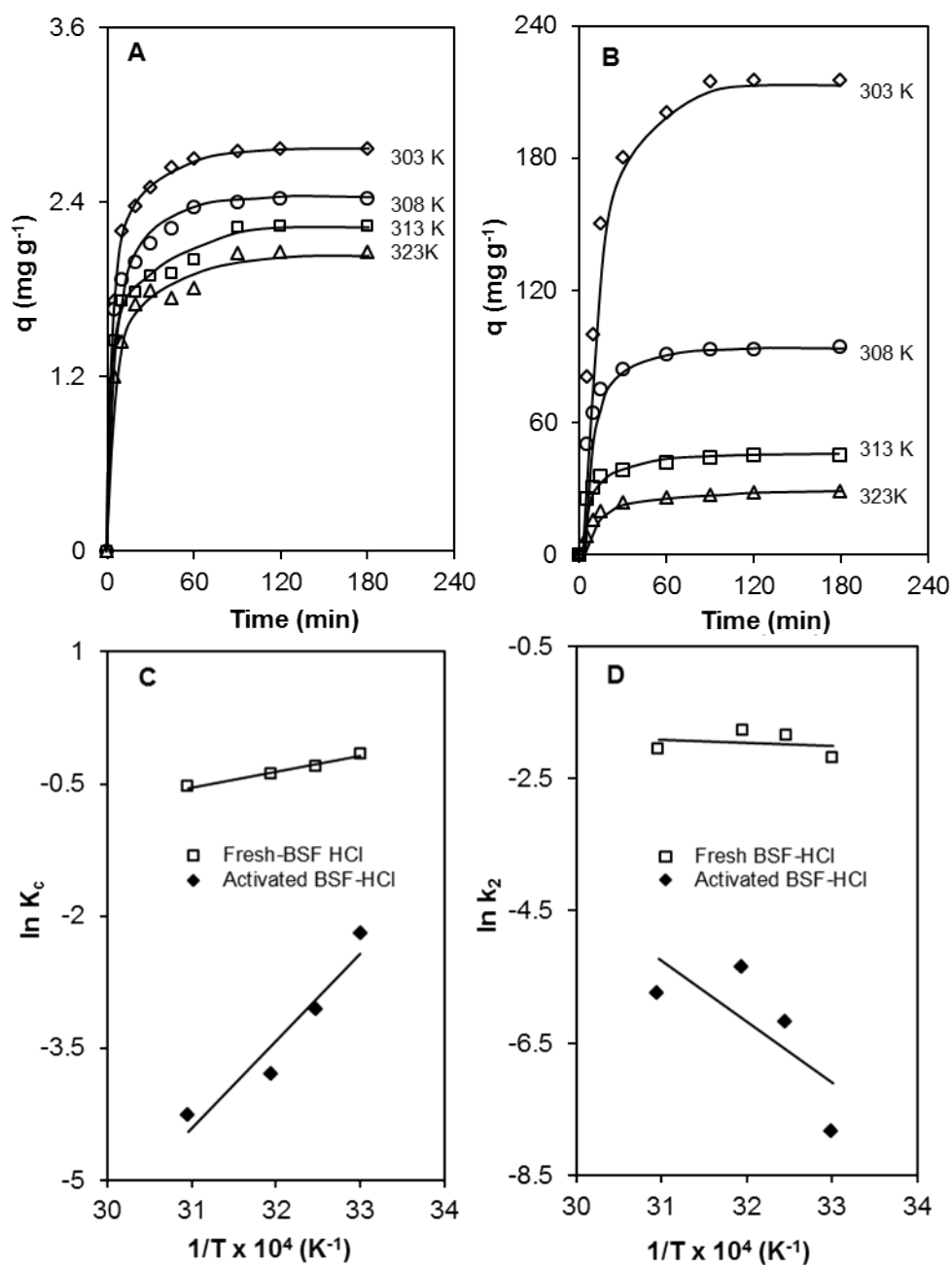
Supplementary Fig. S2 : A) pH_{zpc} of BSF-HCl and B) effect of pH on the biosorption of Hg(II) on activated BSF-HCl



Supplementary Fig. S3: The linear biosorption isotherms for the biosorption of Hg(II) onto (○) fresh BSF-HCl and (□) activated BSF-HCl at different initial Hg(II) ions concentration: A,D) Freundlich, B,E) Langmuir and C,F) Temkin



Supplementary Fig. S4: Kinetics of the biosorption of Hg(II) onto fresh BSF-HCl (solid symbols) and activated BSF-HCl (open symbols) at different temperatures using linear method



Supplementary Fig. S5: Effect of temperature on the biosorption of Hg(II) on A) Fresh BSF-HCl and B) Activated BSF-HCl for estimation of C) thermodynamic parameters (plot of $\ln K_c$ vs $1/T$) and D) activation energy (plot of $\ln k_2$ vs $1/T$)