applied sciences

MDPI

Supplementay Materials: Nitrogenous Bases in Relation to the Colloidal Silver Phase: Adsorption, Kinetic, and Morphology Investigation

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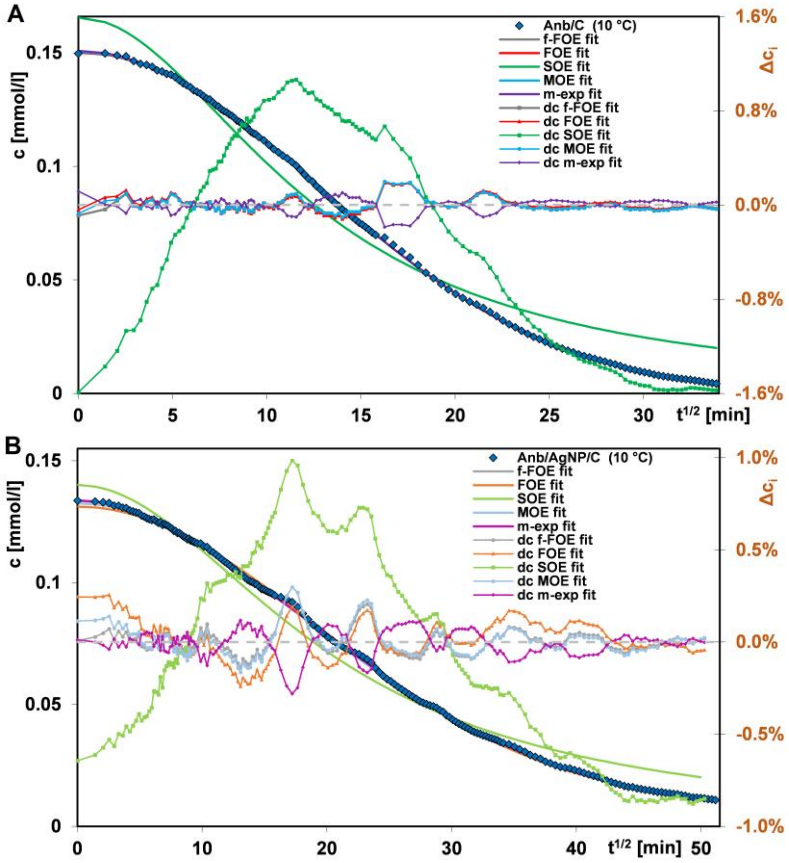

Figure S1. Comparison of the kinetics of adenosine adsorption from the one- (**A**) and two-component (**B**) solutions at 10 °C on the activated carbon RIAA fitted to various equations.

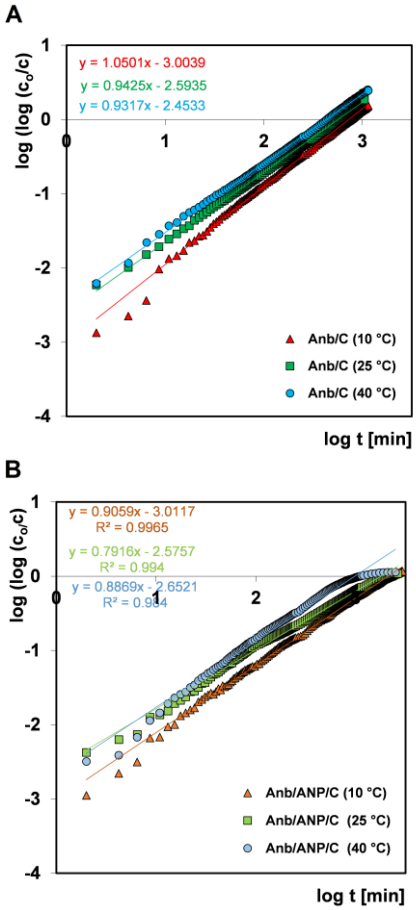

Figure S2. Comparison of Bangham plots for adenosine adsorption from the one- (**A**) and two-component (**B**) solutions on the activated carbon RIAA.

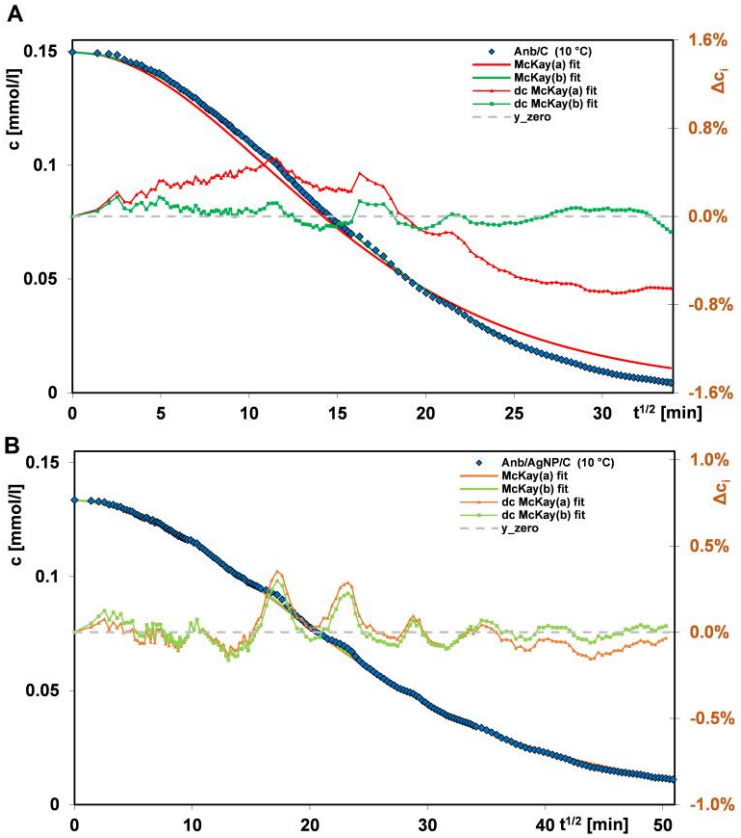

Figure S3. Comparison of kinetics of adenosine adsorption from the one- (**A**) and two-component (**B**) solutions at 10 °C on the activated carbon RIAA fitted to McKay model.

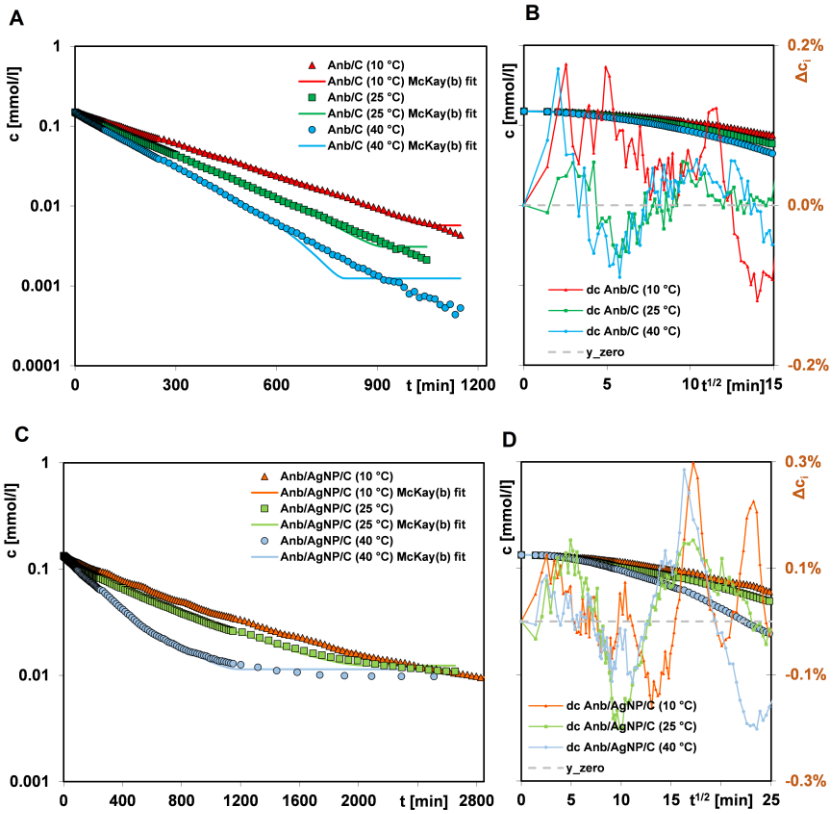

Figure S4. Comparison of adenosine adsorption kinetics from the one-component (**A**,**B**) and bi-component solutions (**C**,**D**) on the activated carbon RIAA at 10, 25, and 40 °C. The lines correspond to the fitted McKay model.

Table S1. Comparison of fitting as relative deviation, SD(c)/c_0 for kinetic models and equations.

System	fit	log k*	$t_{0.5}$ [min]	u_{eq}	1-R^2
Anb/C (10 °C)	m-exp	−2.51 (av.)	224 (av.)	1	$1.10 \cdot 10^{-4}$
		−1.75	39		
		−2.52	229		
	FOE	−2.51	226	0.9988	$1.32 \cdot 10^{-4}$
	SOE	−2.20	158	1	$4.81 \cdot 10^{-2}$
	MOE	−2.52	225	1	$1.21 \cdot 10^{-4}$
	f-FOE	−2.51	225	1	$1.18 \cdot 10^{-4}$
	PDM (a)		213	0.9999	$7.29 \cdot 10^{-3}$
	PDM (b)		215	0.7784	$2.17 \cdot 10^{-4}$
Anb/C (25 °C)	m-exp	−2.37 (av.)	163 (av.)	1	$2.35 \cdot 10^{-5}$
		−1.42	18		
		−2.39	172		
	FOE	−2.38	166	0.9958	$2.10 \cdot 10^{-4}$
	SOE	−2.06	114	1	$4.85 \cdot 10^{-2}$
	MOE	−2.41	165	1	$1.15 \cdot 10^{-4}$
	f-FOE	−2.38	163	1	$7.93 \cdot 10^{-5}$
	PDM (a)		152	0.9999	$4.99 \cdot 10^{-3}$
	PDM (b)		159	0.8486	$6.84 \cdot 10^{-5}$
Anb/C (40 °C)	m-exp	−2.25 (av.)	122 (av.)	1	$3.98 \cdot 10^{-5}$
		−1.06	8		
		−1.59	27		
		−2.29	135		
	FOE	−2.27	129	0.9966	$4.13 \cdot 10^{-4}$
	SOE	−1.93	84	1	$5.02 \cdot 10^{-2}$
	MOE	−2.32	126	1	$2.19 \cdot 10^{-4}$
	f-FOE	−2.26	124	1	$1.52 \cdot 10^{-4}$
	PDM (a)		115	0.9999	$4.17 \cdot 10^{-3}$
	PDM (b)		124	0.8823	$1.17 \cdot 10^{-4}$
Anb/AgNP/C (10 °C)	m-exp	−2.86 (av.)	497 (av.)	0.9489	$2.33 \cdot 10^{-4}$
		−1.92	57		
		−2.89	537		
	FOE	−2.86	506	0.9386	$5.73 \cdot 10^{-4}$
	SOE	−2.62	420	1	$1.86 \cdot 10^{-2}$
	MOE	−2.98	511	0.9651	$2.94 \cdot 10^{-4}$
	f-FOE	−2.87	503	0.9609	$2.40 \cdot 10^{-4}$
	PDM (a)		529	0.9999	$4.29 \cdot 10^{-4}$
	PDM (b)		482	0.8567	$2.84 \cdot 10^{-4}$
Anb/AgNP/C (25 °C)	m-exp	−2.68 (av.)	333 (av.)	0.9316	$1.96 \cdot 10^{-4}$
		−1.74	38		
		−2.80	434		
	FOE	−2.71	360	0.8991	$4.31 \cdot 10^{-3}$
	SOE	−2.53	338	1	$7.29 \cdot 10^{-3}$
	MOE	−3.20	378	0.9888	$1.60 \cdot 10^{-3}$
	f-FOE	−2.74	345	0.9641	$7.31 \cdot 10^{-4}$
	PDM (a)		394	0.9999	$1.38 \cdot 10^{-3}$
	PDM (b)		317	0.0507	$5.23 \cdot 10^{-4}$

Anb/AgNP/C (40 °C)	m-exp	−2.46 (av.)	198 (av.)	0.9273	$3.03 \cdot 10^{-4}$
		−1.56	25		
		−2.48	210		
	FOE	−2.46	202	0.9218	$4.89 \cdot 10^{-4}$
	SOE	−2.24	175	1	$1.75 \cdot 10^{-2}$
	MOE	−2.50	201	0.9281	$4.29 \cdot 10^{-4}$
	f-FOE	−2.47	199	0.9294	$3.86 \cdot 10^{-4}$
	PDM (a)		214	0.9999	$1.37 \cdot 10^{-3}$
	PDM (b)		194	0.8670	$5.66 \cdot 10^{-4}$