

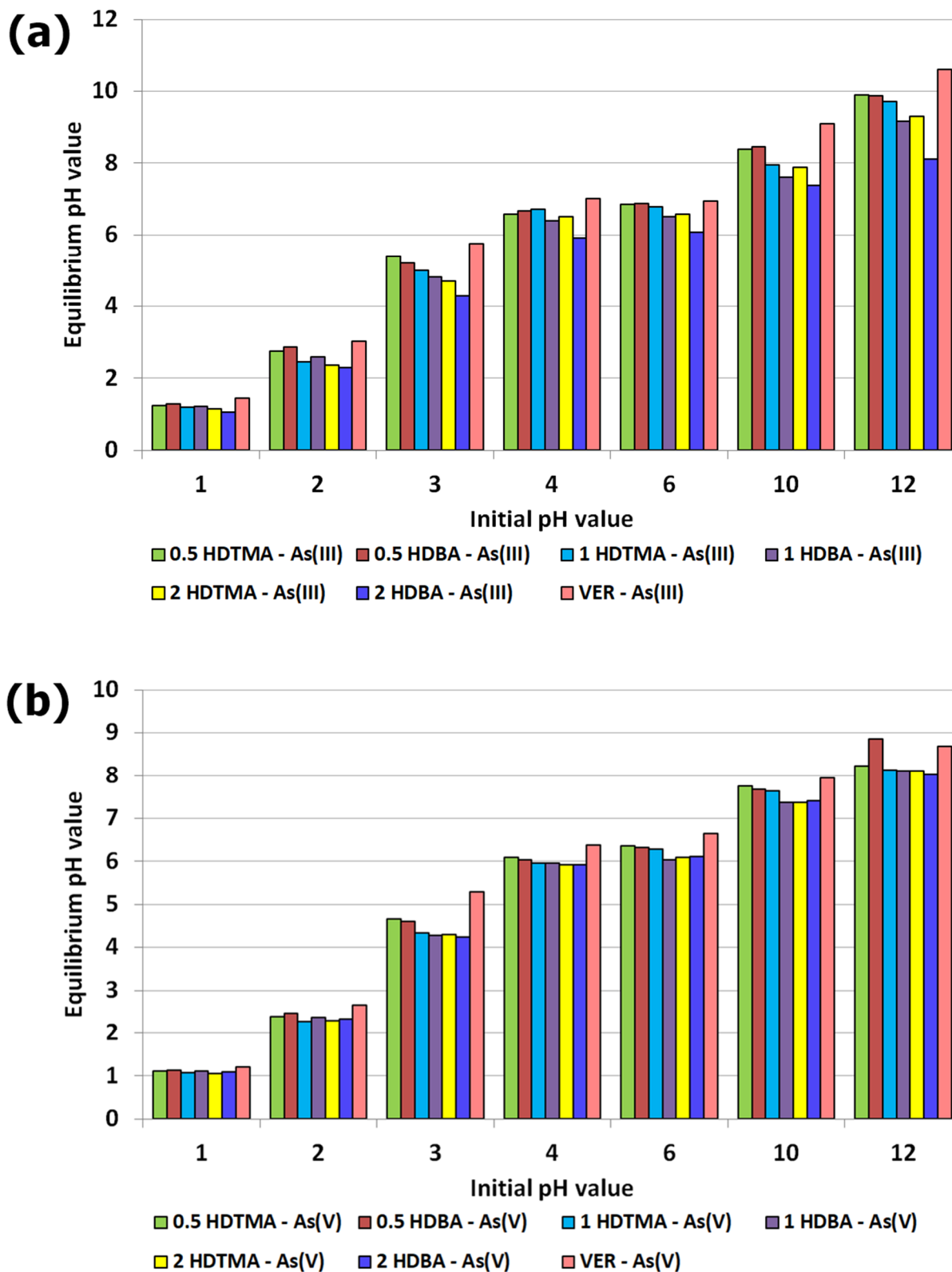
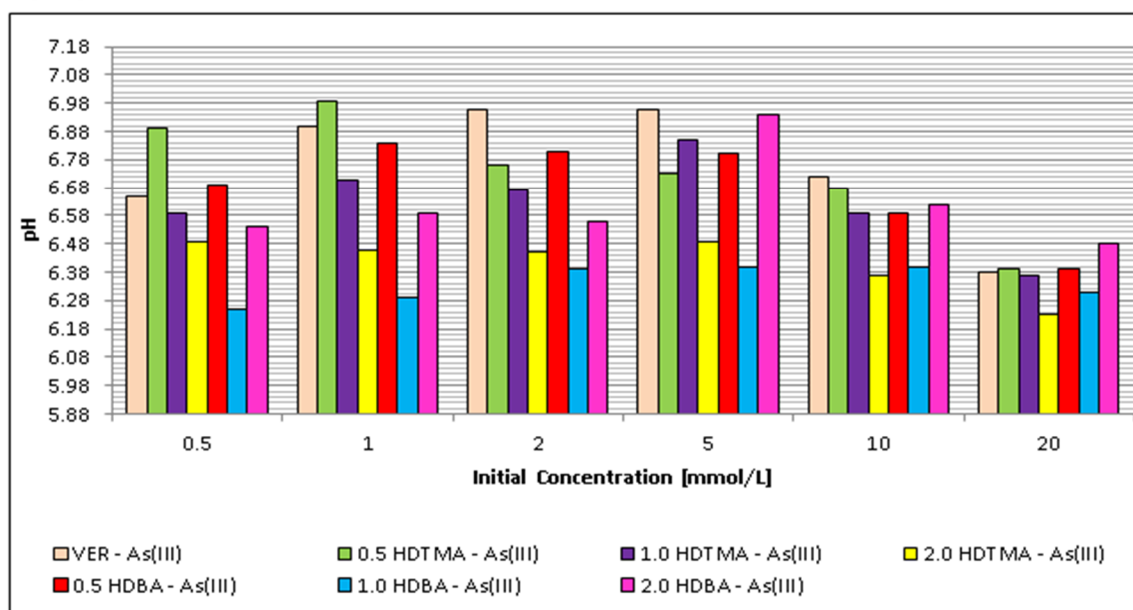


Figure S1. Changes of pH value measured in solutions of As(III) (a) and As(V) (b) before and after sorption experiment carrying out onto diverse initial pH value of raw and modified vermiculite.

(a)



(b)

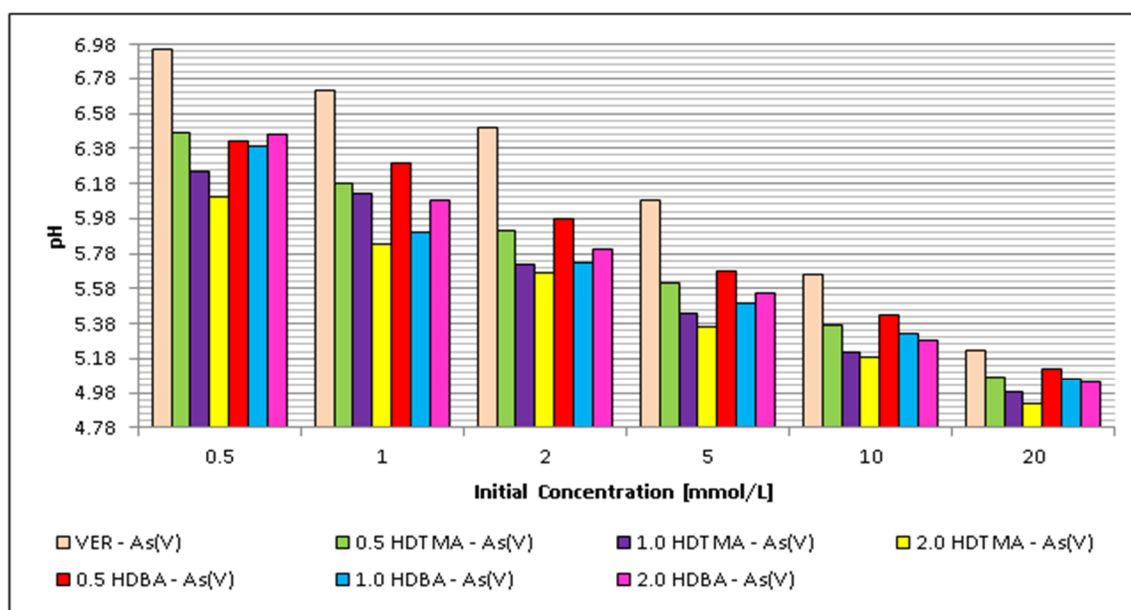
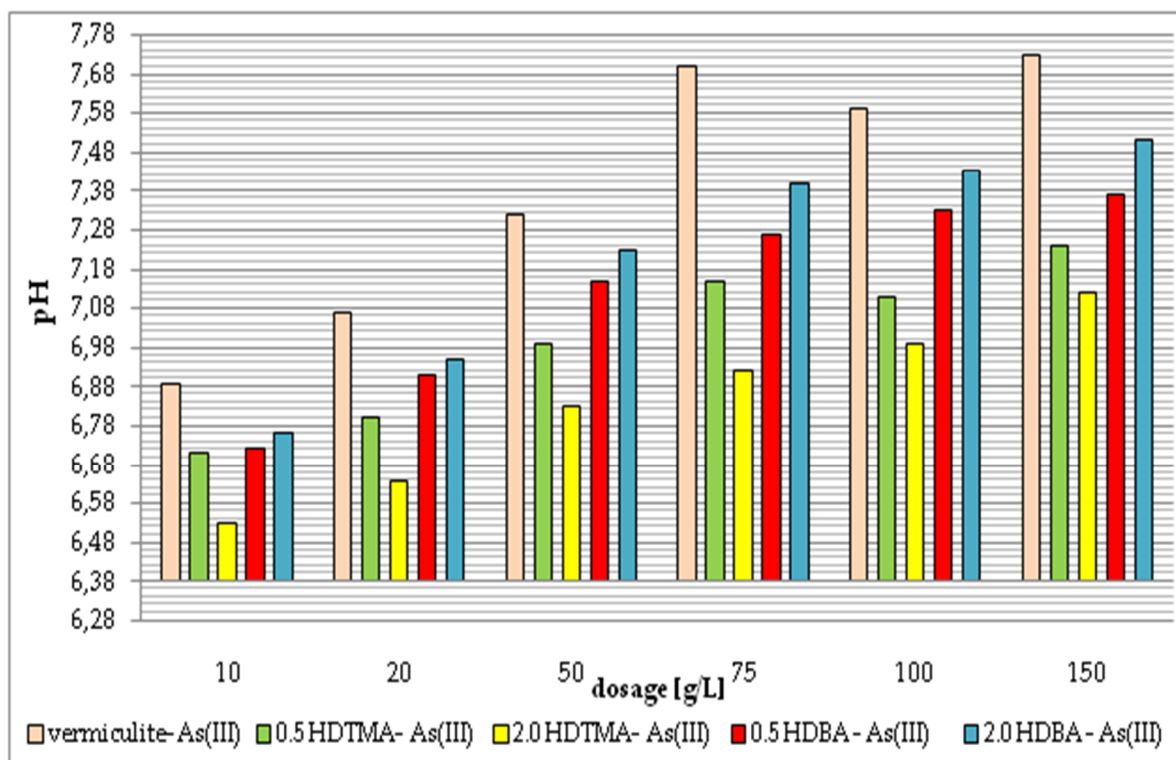


Figure S2. Changes of pH value measured in solutions of As(III) (a) and As(V) (b) before and after sorption experiment carrying out onto diverse initial concentration of raw, HDTMA and HDBA modified vermiculite.

(a)



(b)

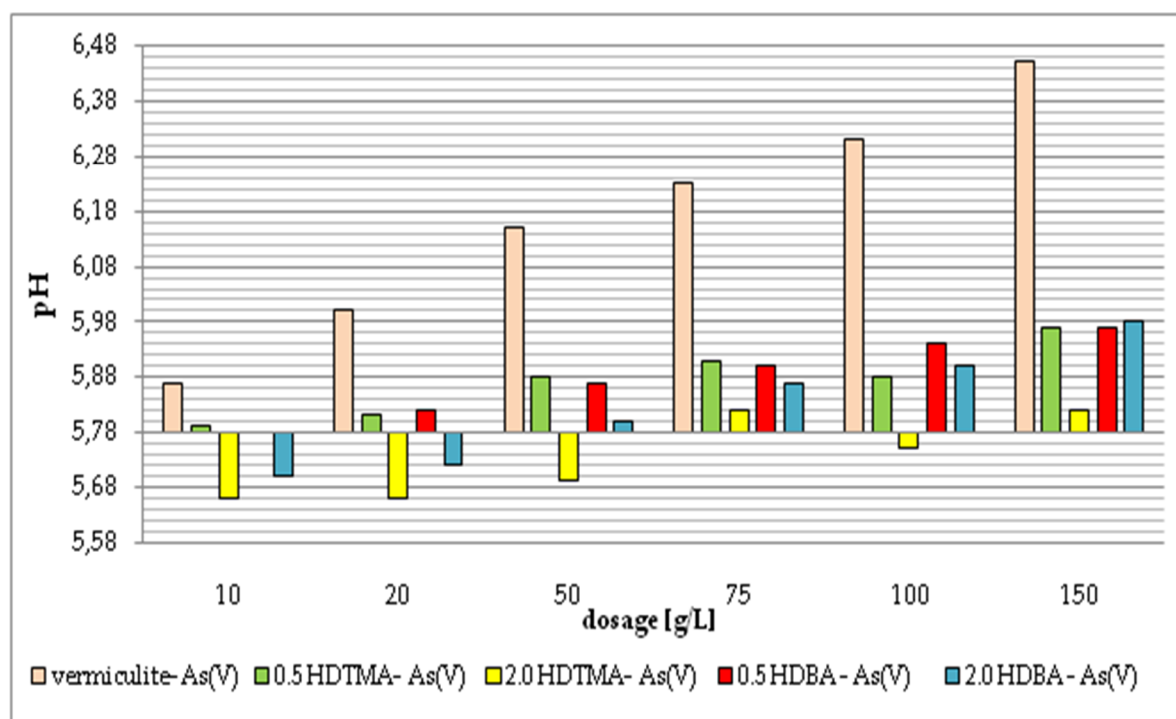
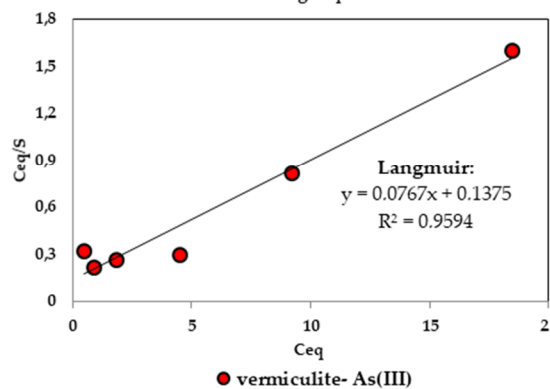
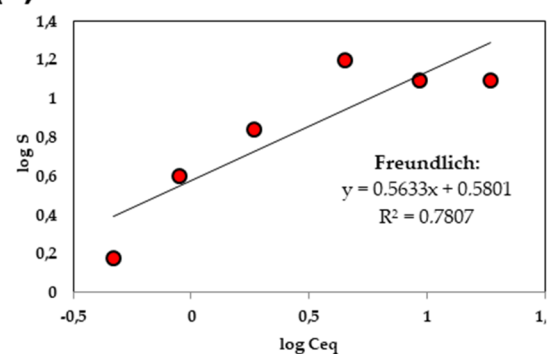
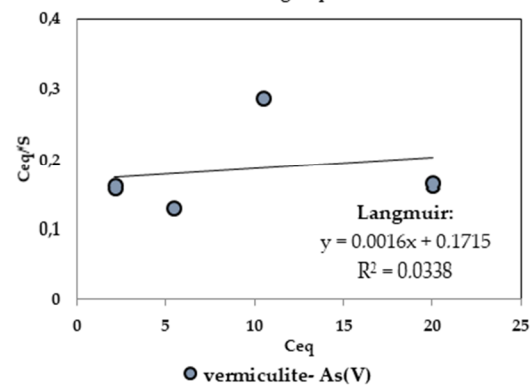
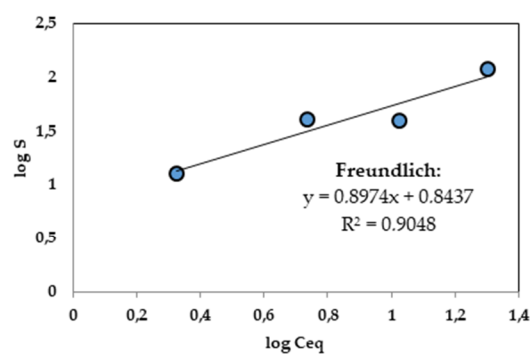
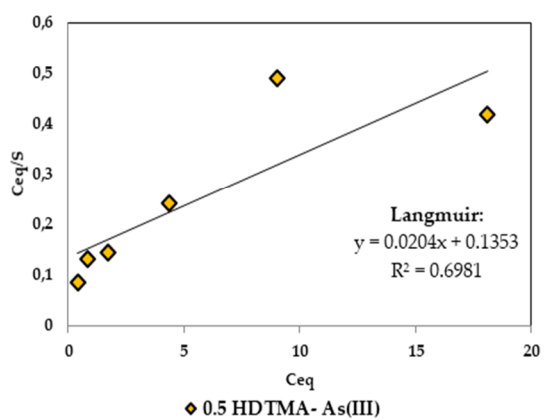
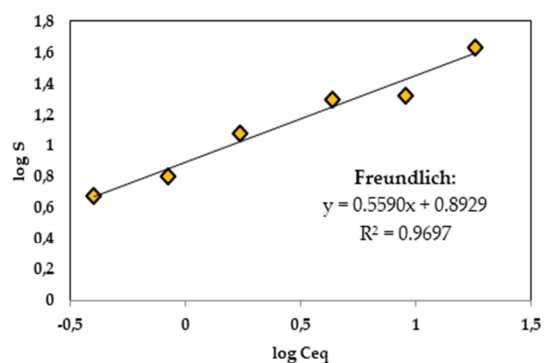
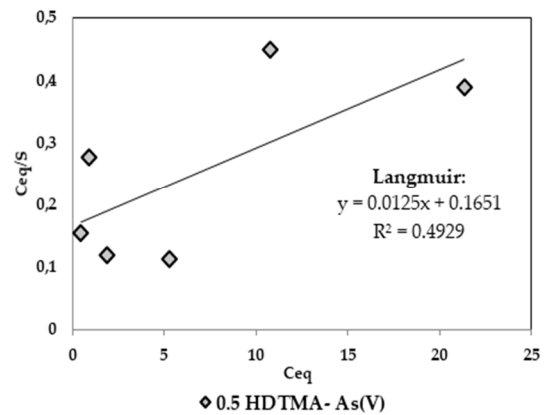
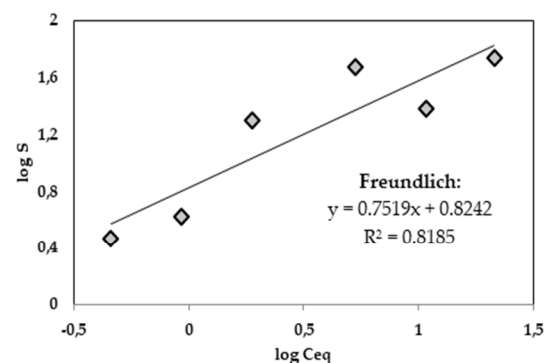
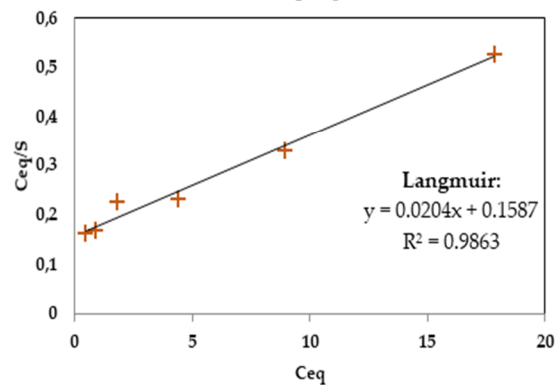
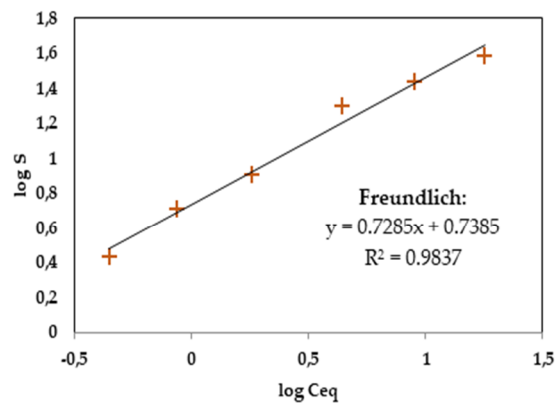
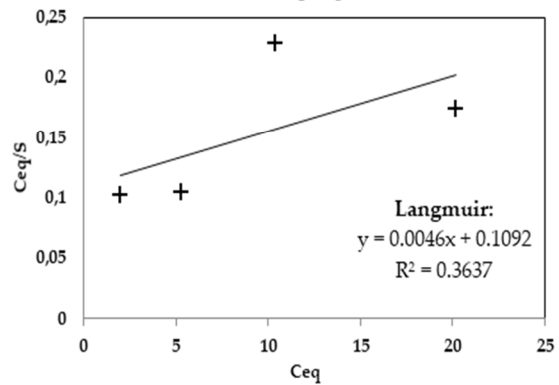
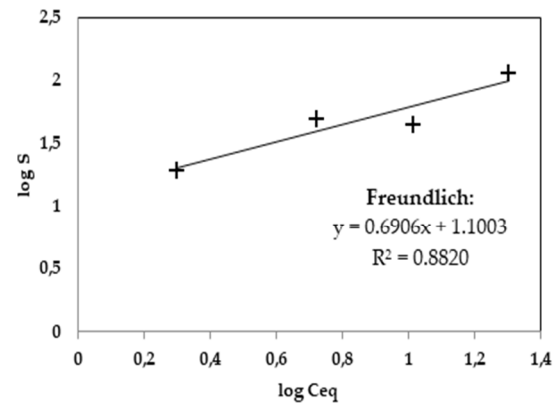


Figure S3. Changes of pH value measured in solutions of As(III) (a) and As(V) (b) before and after sorption experiment carrying out onto diverse dosage of raw, HDTMA and HDBA modified vermiculite.

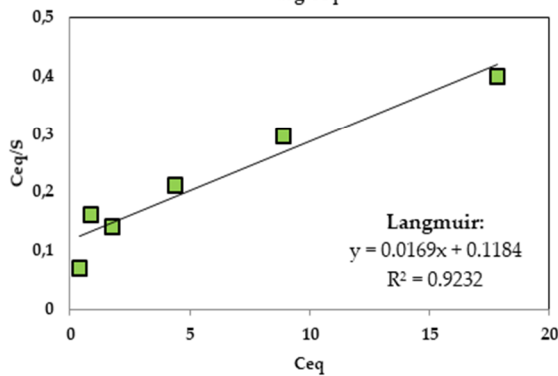
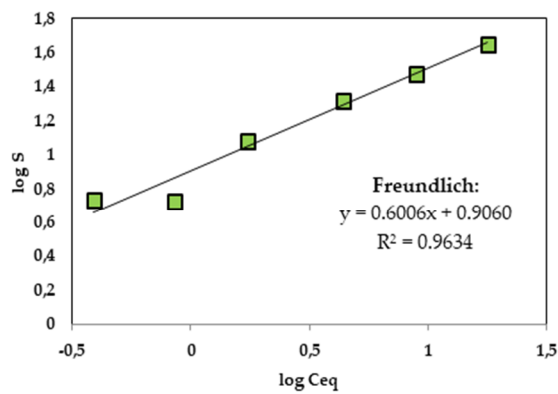
(a)**(b)****(c)****(d)**

(e)

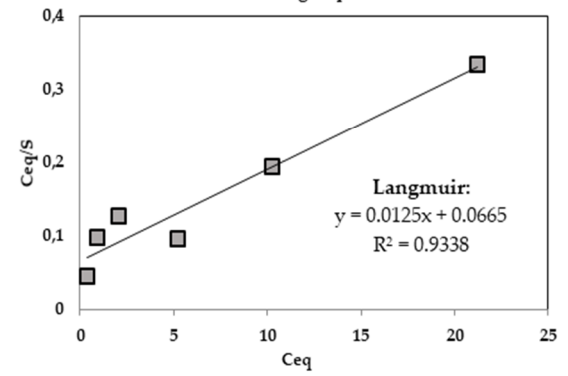
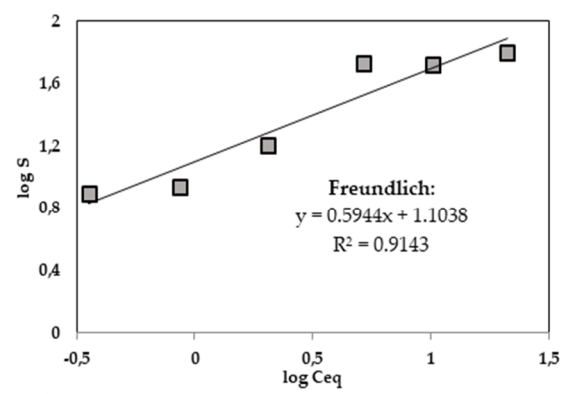
+ 0.5 HDBA- As(III)

(f)

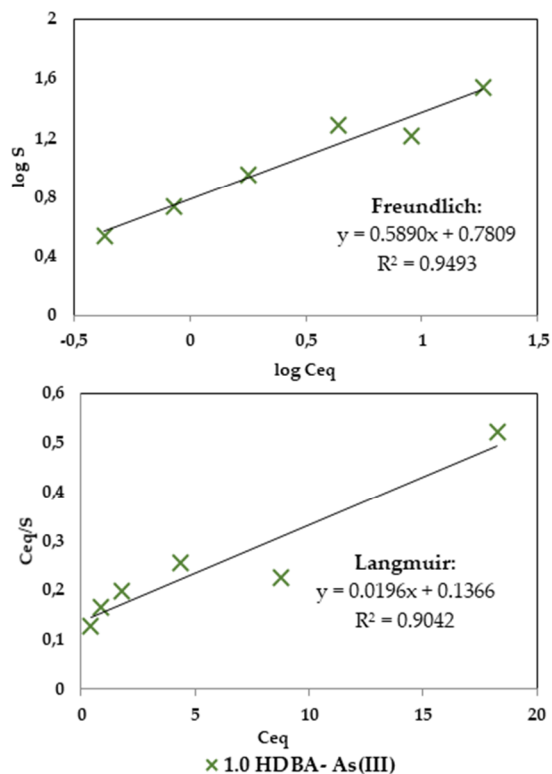
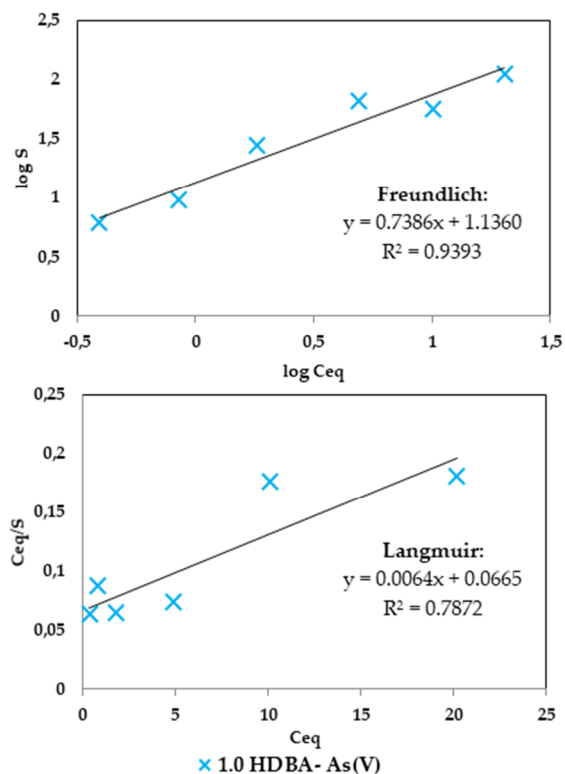
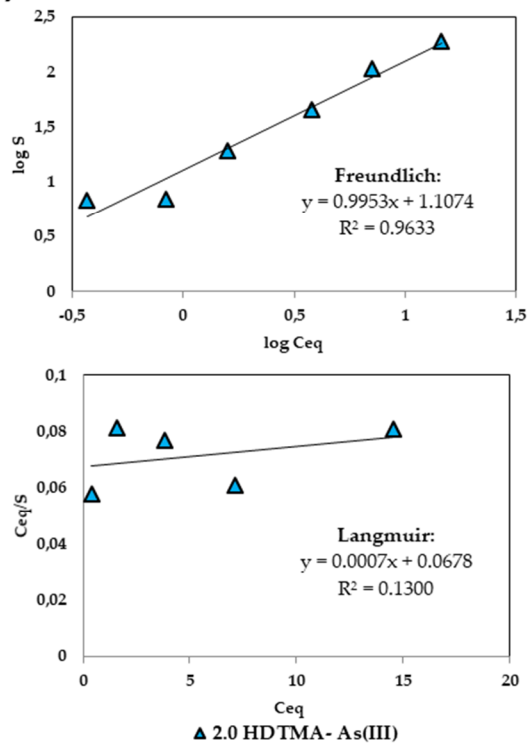
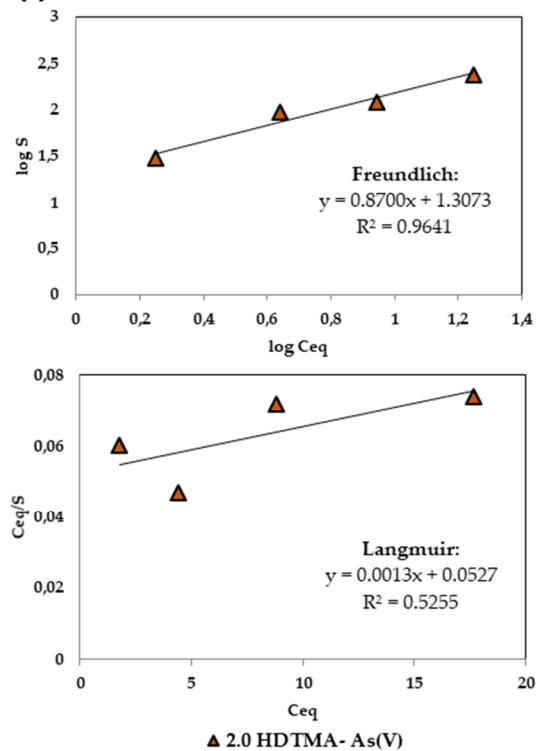
+ 0.5 HDBA- As(V)

(g)

■ 1.0 HDTMA- As(III)

(h)

■ 1.0 HDTMA- As(V)

(i)**(j)****(k)****(l)**

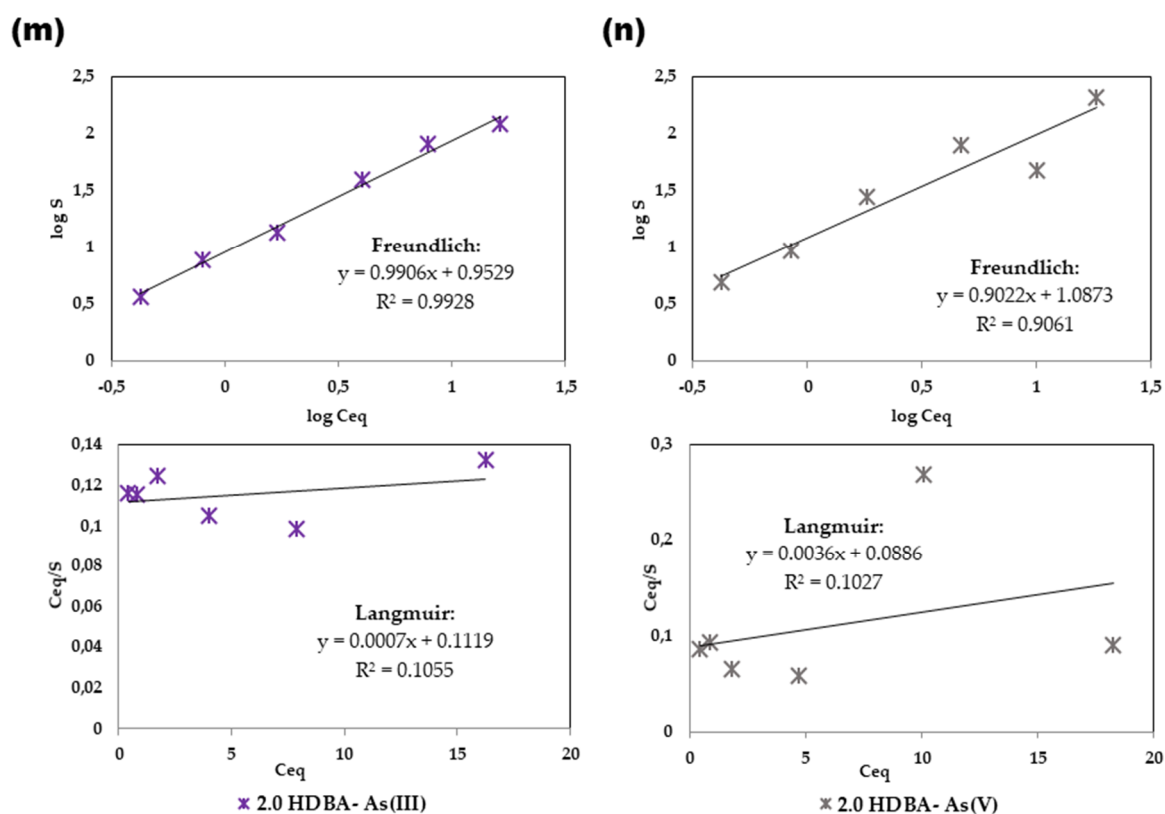


Figure S4. Linearization of Freundlich and Langmuir model for sorption of As(III) (a), As(V) onto raw vermiculite (b); sorption of As(III) (c), As(V) onto 0.5 HDTMA (d) and As (III) (e), As(V) onto 0.5 HDBA (f); As(III) (g) , As(V) onto 1.0 HDTMA (h) and As(III) (i), As(V) onto 1.0 HDBA (j); sorption of As(III) (k), As(V) onto 2.0 HDTMA (l) and As(III) (m), As(V) onto 2.0 HDBA (n).

Table S1. Freundlich and Langmuir model coefficients for sorption of As(III) and As(V) onto raw, HDTMA and HDBA modified vermiculite.

	Freundlich			Langmuir		
	1/n	K _F (mmol/kg)	R ²	Q (mmol/kg)	K _L (L/mmol)	R ²
VER-As(III)	0.563	3.803	0.7807	13.04	0.558	0.9594
VER-As(V)	0.897	6.978	0.9048	625.00	0.003	0.0338
0.5 HDTMA-As(III)	0.559	7.815	0.9697	49.02	0.151	0.6981
0.5 HDTMA-As(V)	0.752	6.671	0.8185	80.00	0.076	0.4929
1.0 HDTMA-As(III)	0.601	8.054	0.9634	59.17	0.143	0.9232
1.0 HDTMA-As(V)	0.594	12.700	0.9143	80.00	0.188	0.9338
2.0 HDTMA-As(III)	0.995	12.806	0.9633	1428.57	0.008	0.1300
2.0 HDTMA-As(V)	0.870	20.291	0.9641	769.23	0.015	0.5255
	Freundlich			Langmuir		
	1/n	K _F (mmol/kg)	R ²	Q (mmol/kg)	K _L (L/mmol)	R ²
0.5 HDBA-As(III)	0.729	5.477	0.9837	49.02	0.129	0.9863
0.5 HDBA-As(V)	0.691	12.598	0.8820	217.39	0.019	0.3637
1.0 HDBA-As(III)	0.589	6.038	0.9493	51.02	0.143	0.9042

1.0 HDBA-As(V)	0.739	13.677	0.9393	156.25	0.096	0.7872
2.0 HDBA-As(III)	0.991	8.972	0.9928	1428.57	0.006	0.1055
2.0 HDBA-As(V)	0.902	12.226	0.9061	277.78	0.040	0.1027



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