

Study of Short Peptide Adsorption on Solution Dispersed Inorganic Nanoparticles Using Depletion Method

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Preparation of 16 mM Dipeptide Stock Solution

Preparation of Peptide Dilutions

Preparation of Titania Sol

Mixing and Thermostating



Filtration of the Thermostated Samples



Preparation of Derivatization Solutions

Derivatization

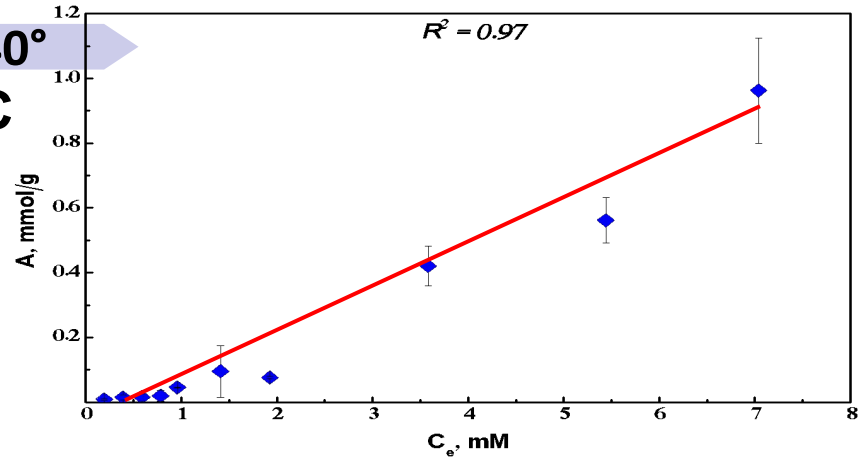
HPLC Analysis

Representative results



40°

C

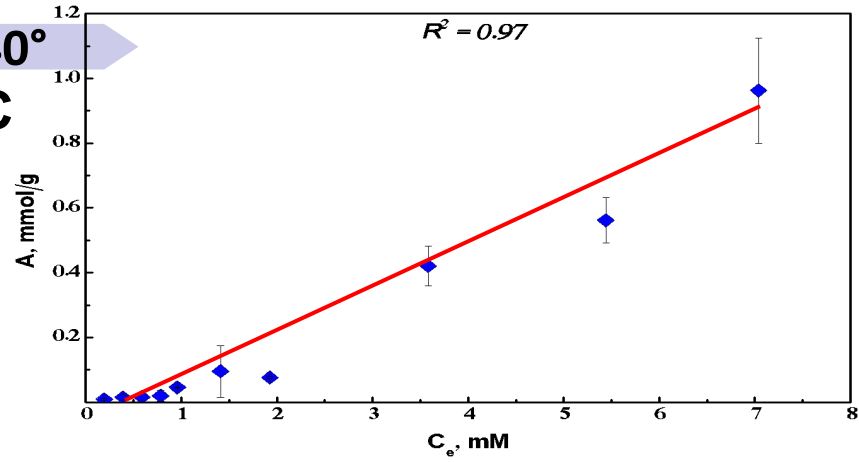


$$A = K_H C_e$$

$$K_H = \frac{dA}{dC_e}$$

40°

C

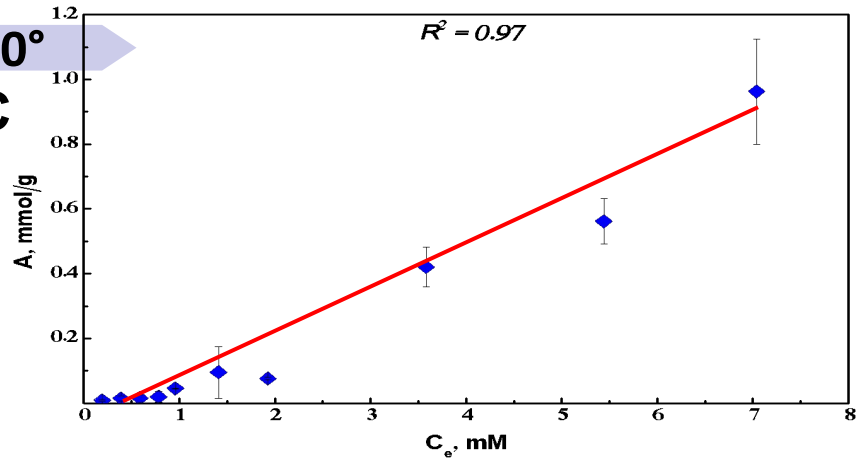


$$A = K_H C_e$$

$$K_H = \frac{dA}{dC_e}$$

$$\Delta G = -RT \ln K$$

40°
C



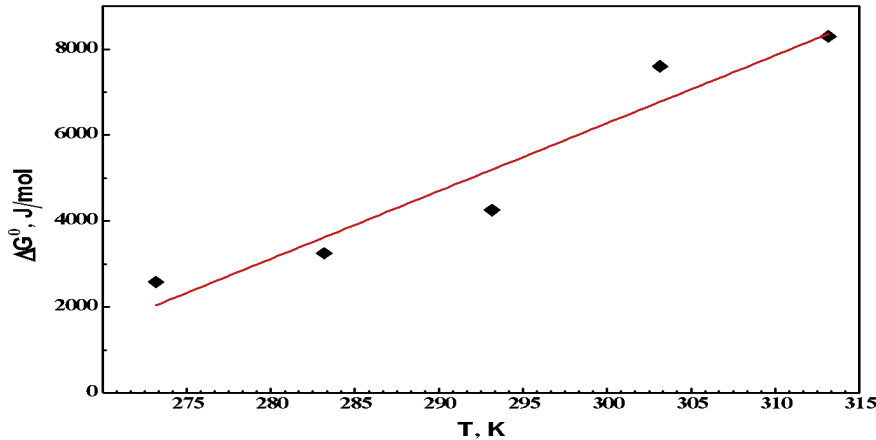
$$A = K_H C_e$$

$$K_H = \frac{dA}{dC_e}$$

$$\Delta G = -RT \ln K$$

$$\Delta G = \Delta H - T\Delta S$$

$$\Delta G = -41000 + 160 T$$



Physico-chemical Constants of Ile-His Adsorption on TiO_2

Table 1

T, K	K_H	ΔG^0 , kJ/mol	ΔH^0 , kJ/mol	ΔS^0 , kJ/mol K
273.15	0.32	2.6	-41	
283.15	0.25	3.2		
293.15	0.17	4.3		-0.16
303.15	0.05	7.6		
313.15	0.04	8.3		

Conclusions

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