

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

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# Preparation of 16 mM Dipeptide Stock Solution

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# Preparation of Peptide Dilutions

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# Preparation of Titania Sol

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# Mixing and Thermostating



# Filtration of the Thermostated Samples

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# Preparation of Derivatization Solutions

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# Derivatization

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# HPLC Analysis

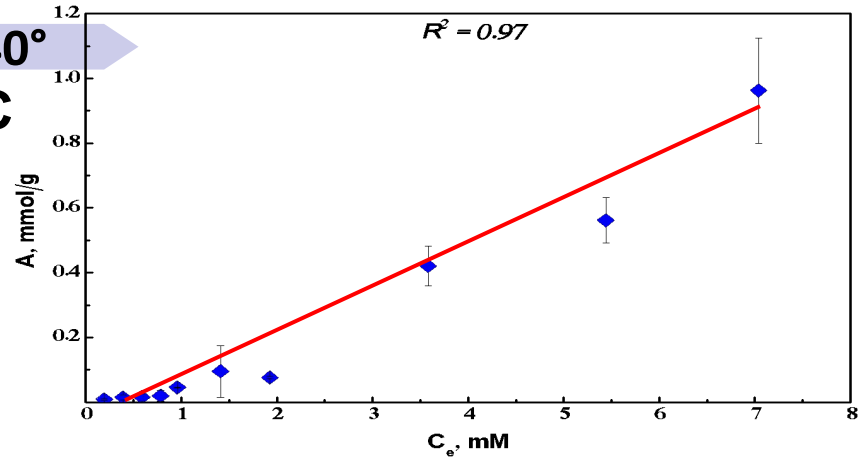
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# Representative results



40°

C

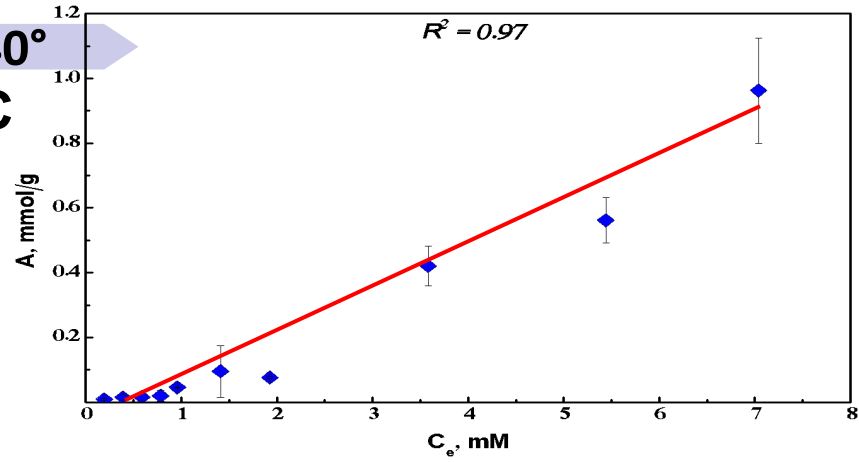


$$A = K_H C_e$$

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

40°

C



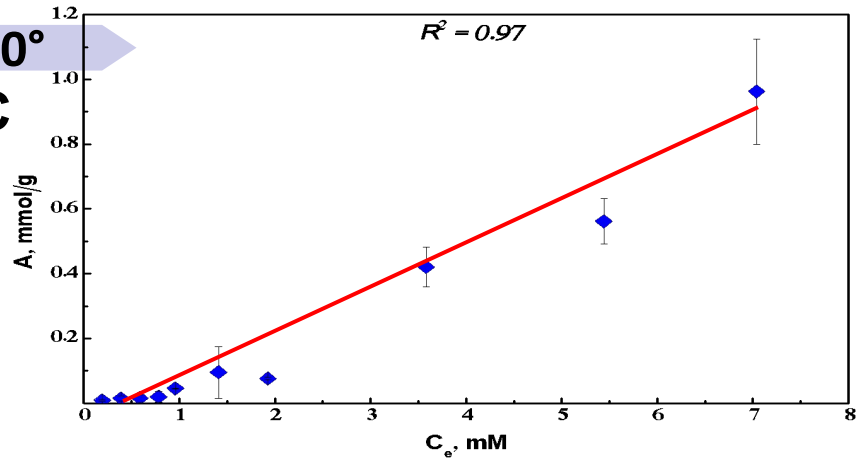
$$A = K_H C_e$$

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

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

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40°  
C



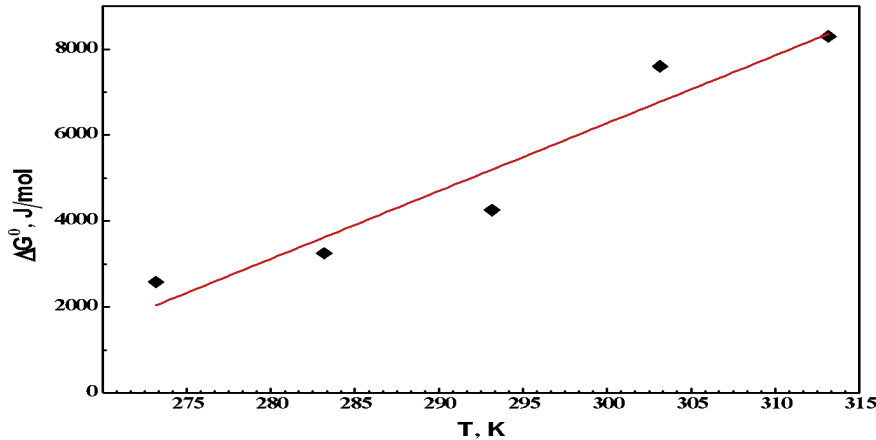
$$A = K_H C_e$$

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

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

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

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



# Physico-chemical Constants of Ile-His Adsorption on $\text{TiO}_2$

Table 1

T, K	$K_H$	$\Delta G^0$ , kJ/mol	$\Delta H^0$ , kJ/mol	$\Delta S^0$ , 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		

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# Conclusions

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