

\*

// :

pH

(Ellis, 1997)

1999)

(Pettersson,

---

< < < < < ( )  
( ) < < < .(Pitt, et al., 1999)  
:  
(Akan, 2003)  
(Liu, et al., 2005a)  
2005 )  
(Sansalone et al.,  
( )  
/ pH  
pH  
(Remmler, 1997 )  
(Remmler, 1997)  
(Pitt, et al, 1999 )  
(Yousef, et al., 1999)  
pH pH  
(Harper et al., 1988)

.....

:

( )

pH

Batch

/

/

:

( )

/

/

%

:

(B)

(A)

)

(C)

( )

( )

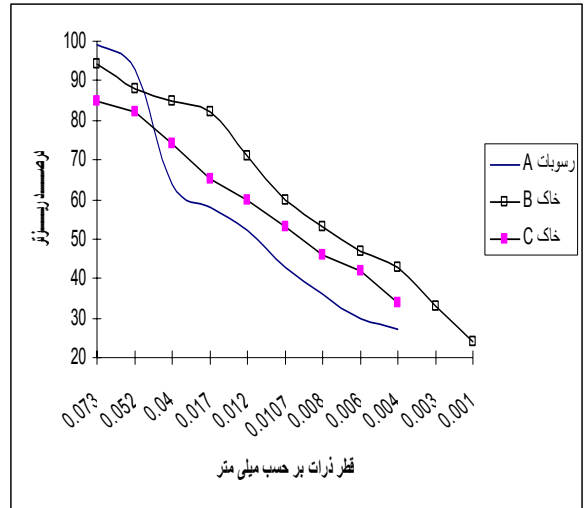


:( )

C B

C

Desorption



V

S

Co

Shaker

Ce

: ( )

( )

$$q = \frac{(C_0 - C_e) * V}{S}$$

: ( )

(mg/Kg ; )

:q

: ( )

(mg/L)

:Co

(mg/L)

:Ce

(L ; )

:V

(Kg ; )

:S

	PI	PL	LL	Gs	
/				/	A
/				/	B
/				/	C

pH .

pH

pH

pH

pH

pH

+

( )

.....

/ pH

(Liu et al., 2005b)

( )

/ /

/

( )

/ /

, pH, : ( )

Temp C°	pH	TDS mg/l	mg/l TSS	TS mg/l		
/ /	/ /					
/ /	/ /					
/	/ /					

: ( )

Mn mg/l	Zn mg/l	Cu mg/l	Fe mg/l		
/ /	/ /	/ /	/ /		
/ /	/ /	/ <	/ /		
/ /	/ /	/ /	/		

: ( )

Cu (mg/kg)	Fe (mg/kg)	Zn (mg/kg)	(Cm)	
/		/		A
/		/		C

( )

( )

**Desorption Batch : ( )**

Volume/Water	Temp	PH 4day	Cu (mg/kg)	Fe (mg/kg)	Zn (mg/kg)	
/		/	< /	< /	/	A
/		/	< /	< /	/	C

**Batch : ( )**

q mg/kg	V CC	pH 4day	pH 24h	Ce mg/l	C0 mg/l	S gr	
		/	/	/		/	A
			/	/		/	
		/	/	/		/	
		/		/			mg/l
		/	/	/		/	C
		/		/		/	
		/	/	/		/	
		/		/			mg/l
		/	/	7			
			/	/			
		/	/	/			
		/					mg/l
		/	/	< /			
		/	/	< /			
		/	/	< /			
		/		/		/	mg/l
		/	/	/			
		/	/	/			
		/		/			
		/		/			mg/l
		/	/	/			
		/	/	/			
		/	/	/			
		/		/			mg/l

.....

( )

pH

pH

mg/kg

mg/kg

(Göbel, et al., 2007)

pH

pH

( )

/

( )

(A)

( )

Desorption

( ) Desorption Batch : ( )

V CC	PH Desorption	Fe mg/l	Zn mg/l	
	/	-	/	A
	/	-	/	C
	/	-	/	
	/	/	/	
	/	/	-	
	/	/	/	
	/		/	
	/	-	/	
	/	-	/	
	/			

(TDS) Batch : ( )

% Removal	TDS (mg/l)	(g/l)	PH	TDS (mg/l)	( )	
-	-	-	/			Low
			/			Low
			/			Med
			/			Med
			/			Med
			/			High
			/			High

Batch : ( )

% Removal	TIME	V CC	mg/l	mg/l	S gr	
	h					
	DAY					

mg/kg

pH

mg/kg

pH



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