

$(NH^+OH^- NaOH HNO_3)$
 (CPC)
 (TEOS)

KEY WORDS: Catalyst support, Perlite, Specific surface area, Sylanization, Nanoporous.

[]
 []
 []
 []

[] []

(-OH)

Si-OH []

[]

()

(CPC)

[] pH

()

[]

[] (Na SiO)

(TEOS)

() (TEOS)

[]

()

() (CPC)

(SiO)

()

()

(H O)

(Al₂O₃)

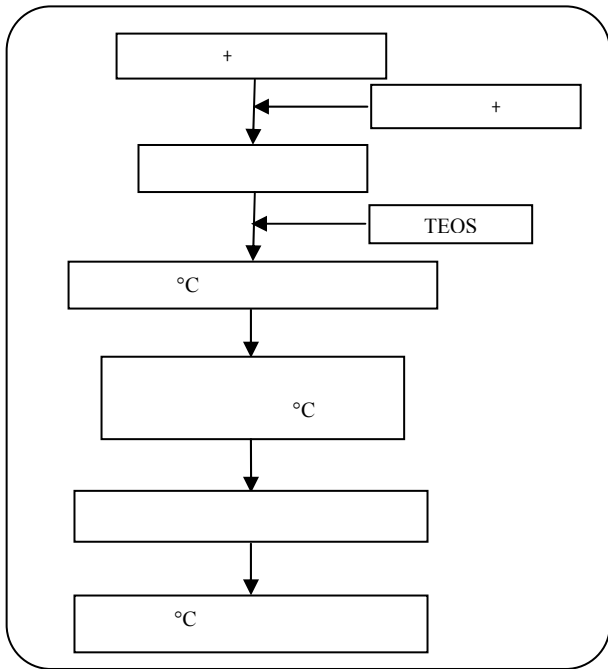
Si-OH

[]

[]

[]

NaOH



pH

Leo VP 1455

(TEOS)

CPC

NaOH

HNO₃

(NH₄⁺OH⁻)

TEOS

TEOS

Leo VP 1455 (SEM)

(BET)

Micromeritics Gemini 2375

X

CuKα

D5000

Semens

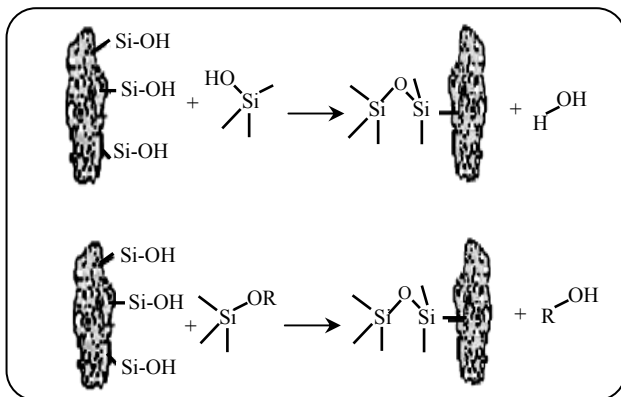
TEOS

FTIR (λ = / θ = /)

FTIR Tensor 27

(CPC)

	(kg/m ³)
/	(mm)
/	pH
/	(SiO ₂)
/	(Al ₂ O ₃)
/	(Na ₂ O)
/	(K ₂ O)
/	(CaO)
/	(Fe ₂ O ₃)
/	(MgO)



[]

NaOH)

(HNO₃)

SEM

(NH₄⁺OH⁻)

NaOH

HNO₃

()

pH = /

pH

(SiO₂) (/)

(-OH) (SN) (-OR)

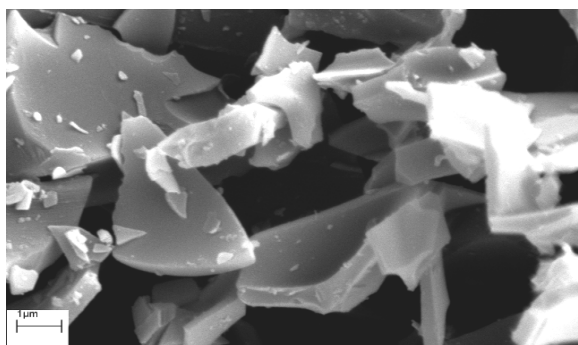
(Si-OH) (Si-O-Si)

FT

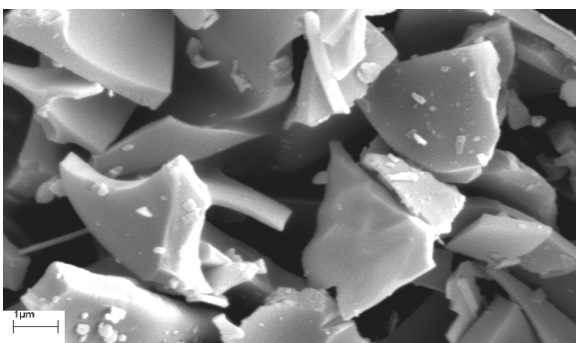
Si-OH

(FTIR)

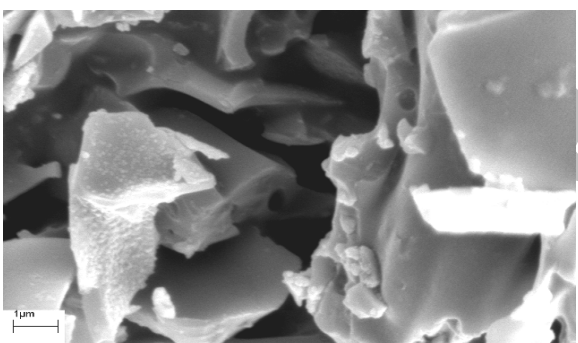
IR



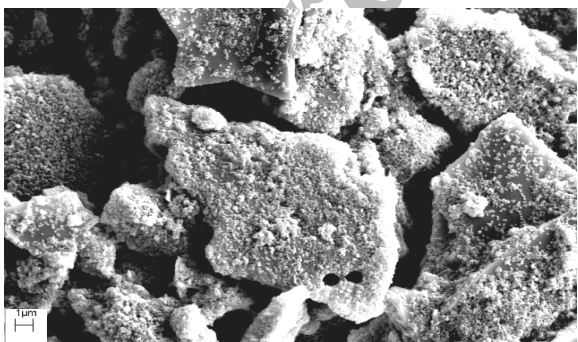
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()

() SEM ()

() HNO

() NaOH

(BET)

of SID

[]

() ()

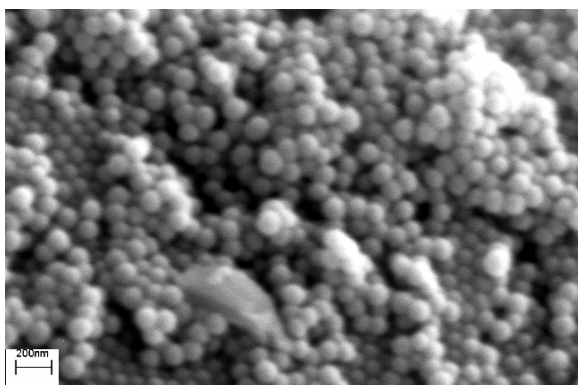
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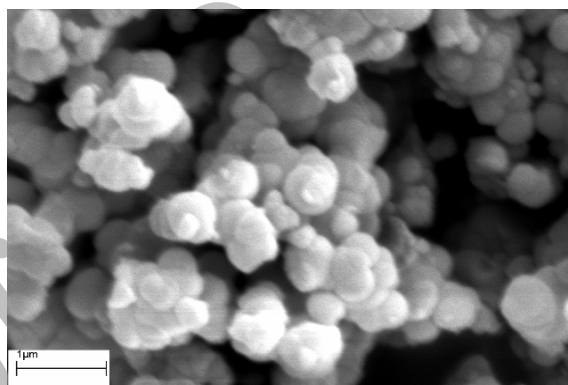
XRD

XRD (MCM-41)

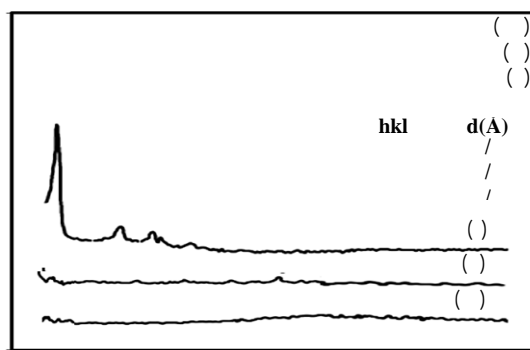
D_{100} ()	V_{Pore} ()	S_{BET} ()	
/	/		
	/		(HNO ₃)
	/		(NaOH)
	/		(NH ₄ ⁺ OH ⁻)
/	/		(NH ₄ ⁺ OH ⁻)



()
NH₄⁺OH⁻



()
SEM ()
()



XRD

θ

XRD

hkl d(A)

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()

()
()
()

() () ()

()

p6mm

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