
CMP

*

(/ / : // :)

CMP

gr/m²

CMP

DTPA

FT-IR

0c

PC

K/S

(K)

()

CMP

:

... **CMP**

() .[]

UV

(UV)

.[]

.[]

(GW)

()

4-O- β

α

()

.[]

.[]

.[]

CMP

TAPPI om

()

CMP

()

.[]

(CMP)

CTMP

.

:

- Kennedy
- Monica

- Yellowing
- Agrawal
- Paulsson

CMP

DTPA
(H₂O₂)

(Na₂SO₃)

$\frac{L}{W}$

/ :pH

:(°C)

PFI

(Beatter)

:(gr/l) SO₂

CSF

Mill

:()

T om

:(gr/l)Na₂O

gr/m²

TAPPI

:()

()

CMP

[] **CMP**

H ₂ O ₂	DTPA	
		(°C)
		()
		(%) (H ₂ O ₂)
/	/	(%) DTPA
/	/	pH
/		NaOH/H ₂ O ₂
		(%)

:

:

:()

H

[]

()

:(°C)

:

[]

Kpa

Paullsson M.

...

CMP

T om

(PC)

TAPPI

:[] -

PC =100[(K/S)_t-(K/S)_{t=0}]

FT-IR

:K

:S

FT-IR

()

t

(KBr)

FT-IR

FT-IR

MB 100

Bomen

SPSS

Technibritemiro TB_ 1C

¹CIELab

CMP

()

black

UV

Phillips

light

CMP

(K)

(ISO)

a*

(S)

()

CSF

()

CMP

()

(m²/kg)

CMP

()

CMP

)

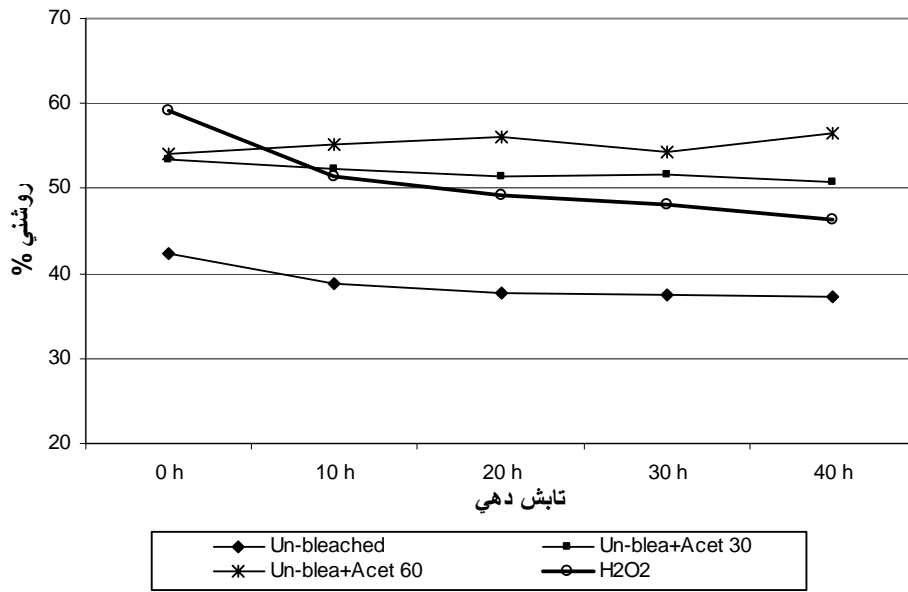
(

CMP

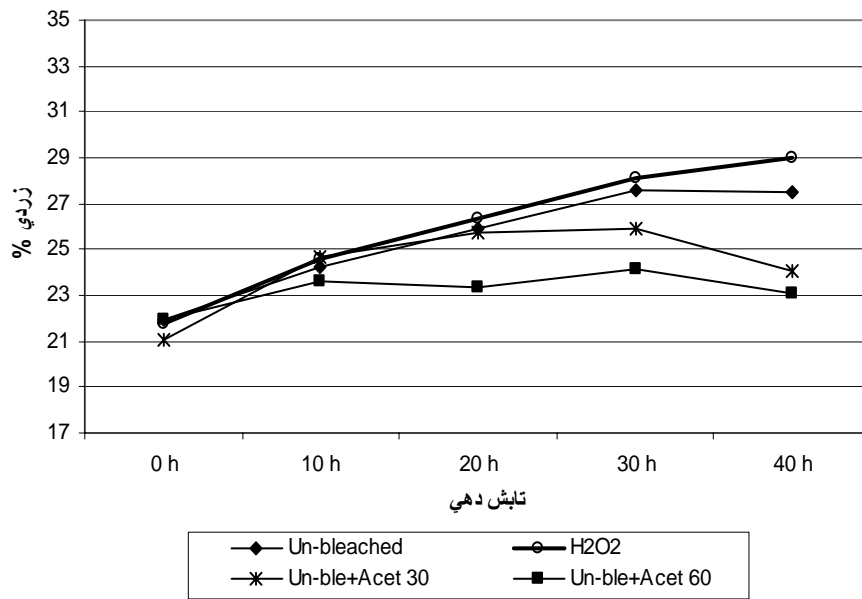
PC		*		()		()		()		
*		*								
/	/	/	/	/	/	/	/	/	/	
/	/	/	/	/	/	/	/	/	/	()
/	/	/	/	/	/	/	/	/	/	()
/	/	/	/	/	/	/	/	/	/	H ₂ O ₂

...

CMP



CMP



CMP

PC

() PC

CMP

PC

) CMP
()

(

PC
PC

CMP

PC

()

CMP

a*

PC K/S

a*

a*

a*

CMP ()
FT-IR

(^{-1}cm)

O-H

(cm^{-1})

OH

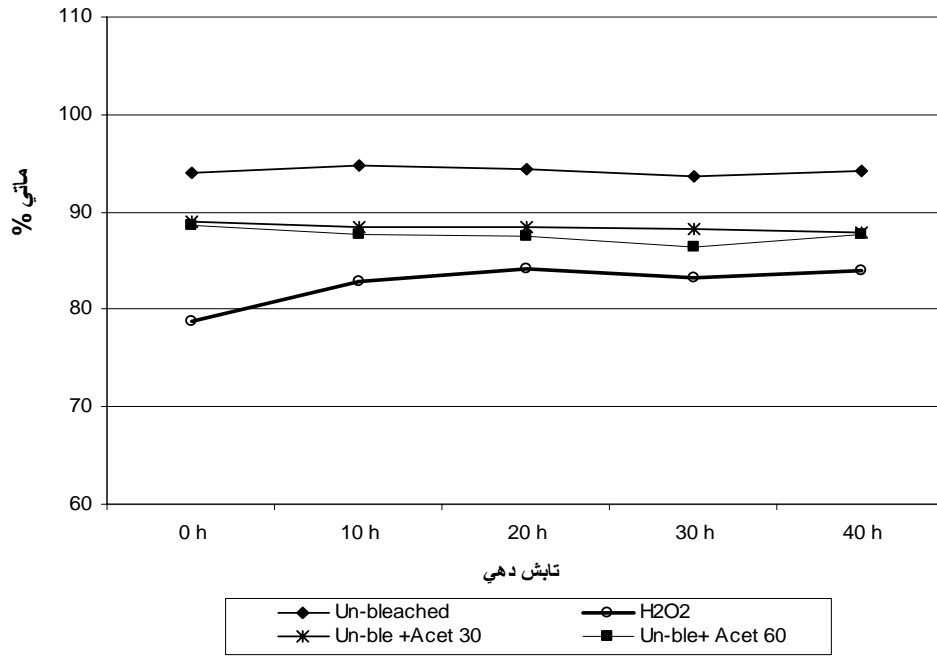
H

)

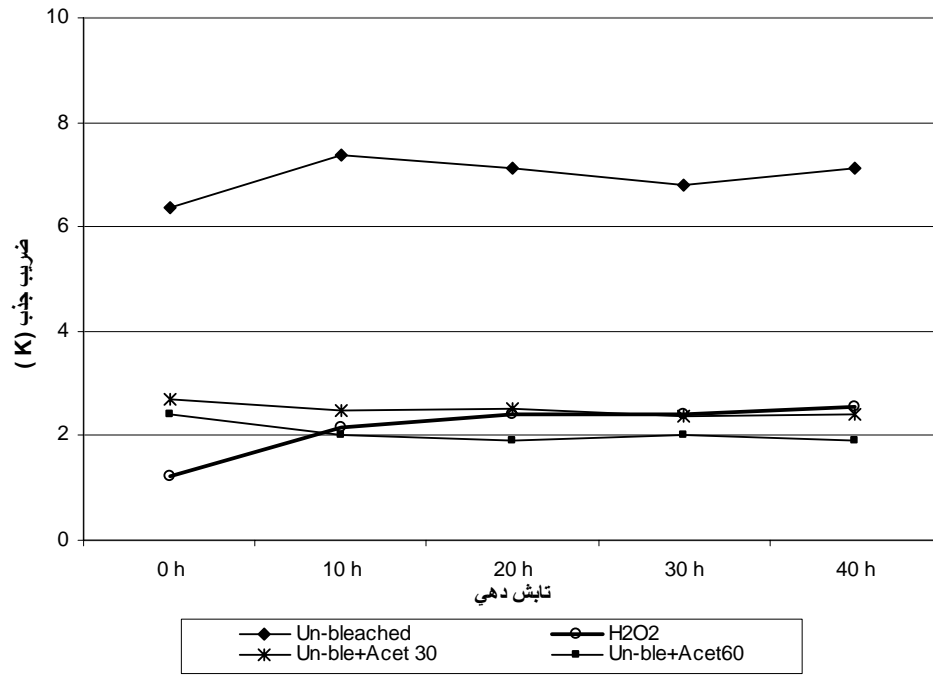
(cm^{-1})

...

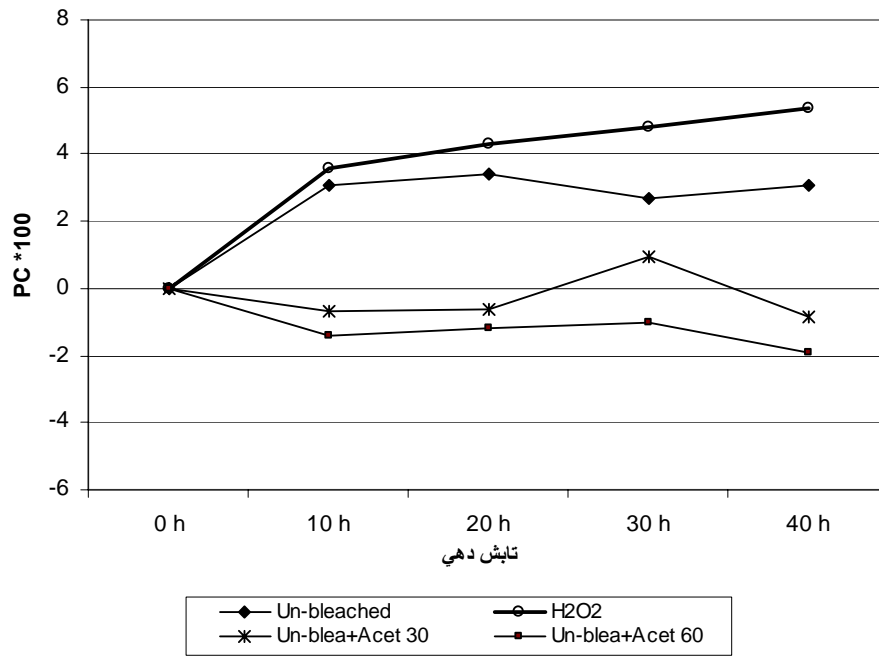
CMP



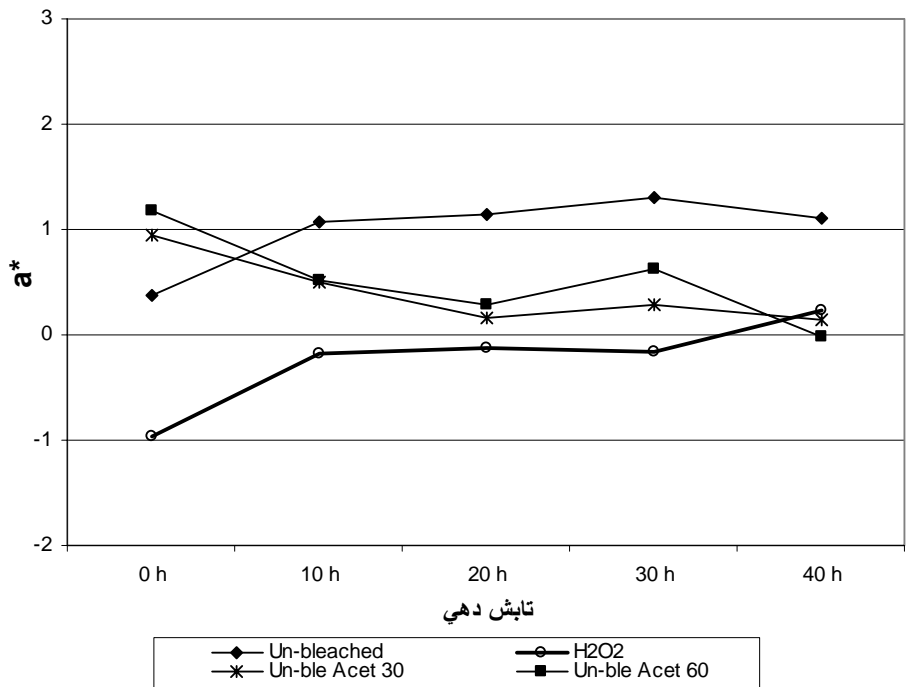
CMP



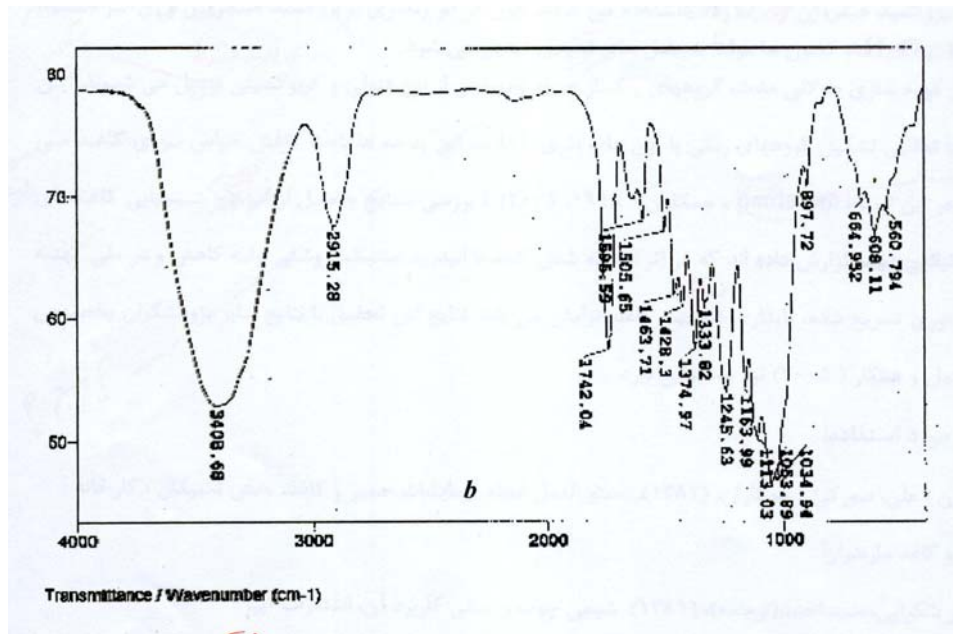
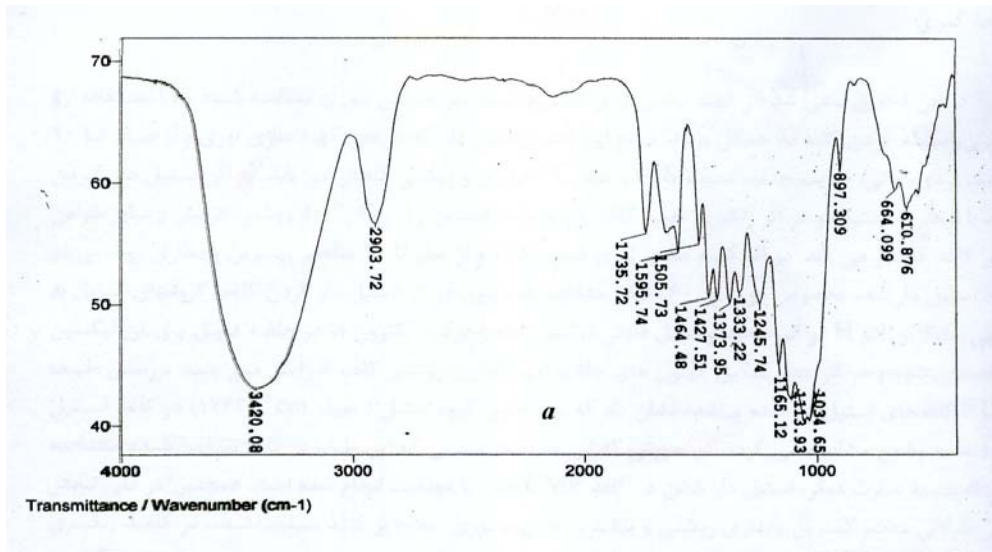
CMP



CMP PC



CMP a*

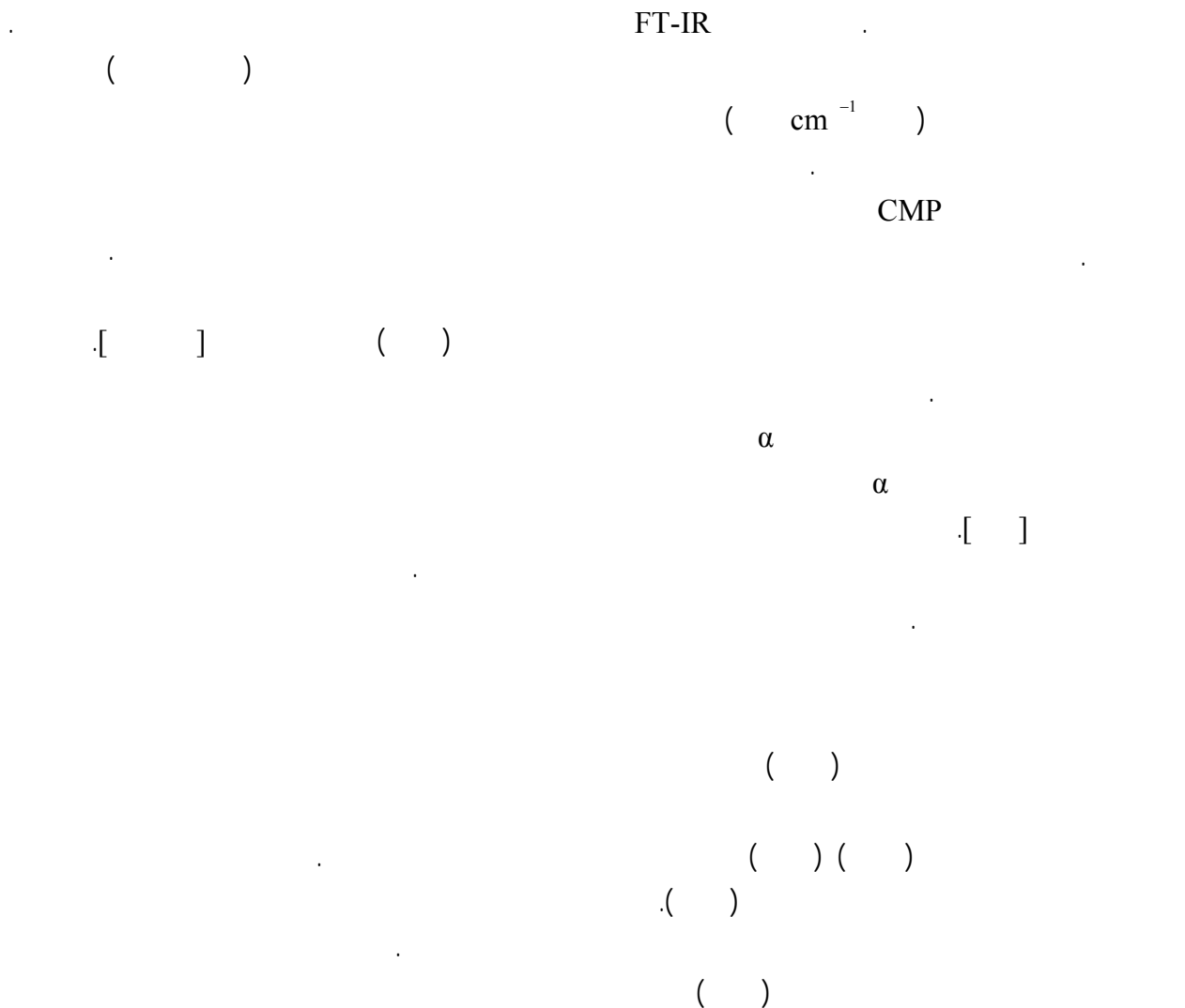


(b)

(a)

FT-IR

H



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Investigation on the optical behaviour of acetylated and non acetylated Horm Bam CMP pulp following accelerated irradiation aging

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Abstract

In this research, Horn Beam chips were chosen randomly from chips pile at Mazandaran Pulp and Paper Mill and pulped by CMP process at the yield of 85%. Then, one portion of pulp was bleached by using hydrogen peroxide and DTPA as chelating agent and 60 gr/m² handsheets were made from bleached and unbleached pulp. A number unbleached handsheets were acetylated by using acetic anhydride at 80°C for 30 and 60 minutes. The handsheet were irradiated for zero , 10 , 20 , 30 and 40 hours for accelerated aging. The optical characteristics of the handsheets were measured before and after optical aging. The results of this study showed that following bleaching and acetylation, absorption coefficient, K/S ratio, opacity, yellowness, greenness and post color (PC) number were decreased, and brightness was increased. Following aging up to 40 hours, all optical Properties (except brightness) were increased. These changes are more tangible up to 20 hours irradiation. Among the handsheets, acetylated handsheets, especially those acetylated for 60 minutes, have better brightness stability and less brightness reversion and therefore better resistance towards optical deterioration.

Keywords: Accelerated optical aging, Acetic anhydride, CMP pulp, Acetylation, Brightness stability, Horn Beam.