

() , ()

*

(// : // :)

) (/)

(

PCI

AFC40

% /

%

%

(%)

/

%

:

(mg/L) COD

(Wadley et al., 1995; Hinkova et al., 2002)

(Cartier et al., 1997)

%

, ()

%

(UF)

(1997) Cartier et al.
MWCO

UF
(Cartier et al., 1997)

%
(NF)

kg/m²h

kg/m²h
(1995) Wadley et al.

g/l g/l
°C °C MPa
/ m/s
%

%
(1999) Theoleyre et al.

(Rodrigues et al., 2010)

%

()

(Koekoek et al., 1998)

%
(2000) Chi Chou

)

(

()

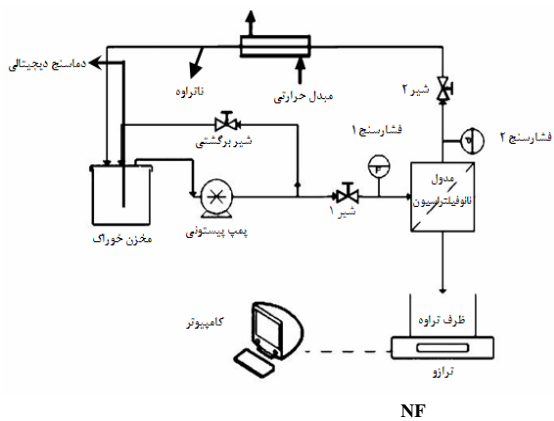
(%)
(Hinkova et al., 2002)

(Theoleyre et al., 1998; Chi Chou, 2000;
Koekoek et al., 1998; Cartier et al., 1997; Hong et al.,
.2006; Wadley et al., 1995; Hinkova et al., 2002)

COD

(. Mohammad et al., 2007)

(2000) Chi Chou



()

AFC40

NF

()

PCI

()

AFC40

cm²

/ /

pH

()

(Decloux et al., 2000)

kg.m⁻².h⁻¹

$$J = \left(\frac{W_2 - W_1}{t \times A} \right)$$

()

kg t₁

:W₁

kg t₂

: W₂

h W₂, W₁

: t

m²

: A

(J_w)

(J_p)

(J_{wf})

()

$$\text{Fouling (\%)} = 1 - \frac{J_{wf}}{J_w} \times 100$$

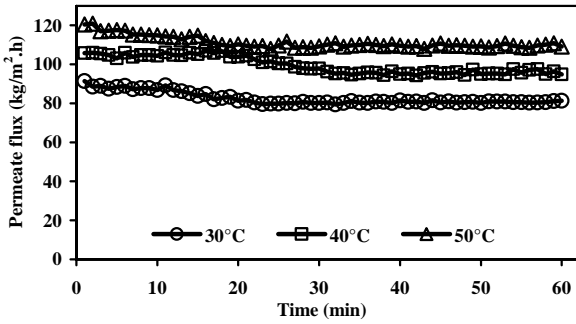
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1. Polyamide film
2. Apparent Retention Character
3. Tubular

()

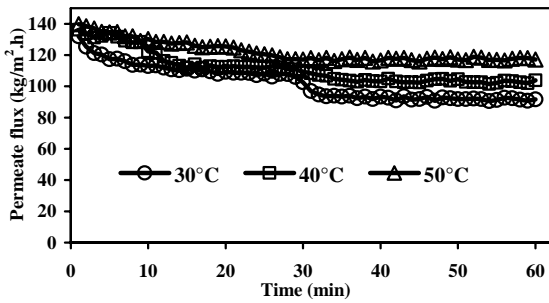
(Rice et al., 2009)

(/ ¹(TMP)



(Cartier et al., 1997)

()



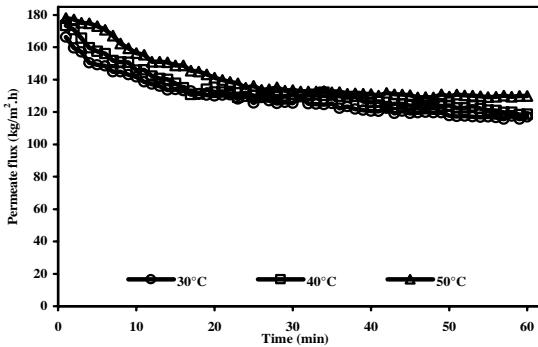
(R)

$$R = \left(\frac{C_b - C_p}{C_b} \right) \times 100 \quad ()$$

C_b C_p

(Cartier et al., 1997)

(/)



(/) .()

)

(

)

()

()

.(

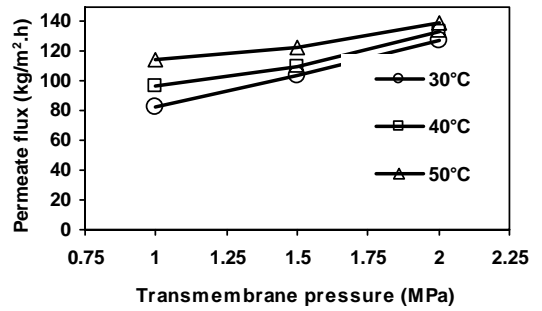
-
1. Transmembrane Pressure
 2. Jenway 6105, Bibby Scientific Limited, UK
 3. RHBO-80 Refractometer, manufactured by Spectrum Technologies Inc., USA.
 4. Concentration polarization

/ kg/m²h / kg/m²h

(%)	(MPa)	(°C)
/		

% /

(Rautenbach & Albrecht, 1989)



()

(% /)

%

%

(1997) Cartier et al.

%

%

()

(%)	(°C)
/	
/	
/	

(%)	(MPa)
/	
/	
/	

°C

°C

()

(1995) Wadley et al.

%

(2006) Hong et al. .

NaCl

% /

% /

NaCl

%

(%)	(°C)
/	/
/	/
/	/

(%)	(MPa)
/	/
/	/
/	/

)

() (

(Darwish et al., 2007)

%

%

% /

/

(/ kg/m²h)

1. Donnan (electrostatic) effect

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