Al-Khwarizmi Engineering Journal

Al-Khwarizmi Engineering Journal, 4, 2, (2008) 51- 58

One Line Space Size 16

Title of paper (Times New Roman, Size 16, Bold)

One Line Space Size 14

Auther Name(s) (Times New Roman, Size 14, Bold)

Address of Auter (Times New Romans, Size 10,Italic)

Email: address@yahoo.com

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(Received 11 Julay2006 ; accepted 24 September 2007) (Times New Roman, Size 10)

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Line Width: 16.9 cm and Line Thickness: 1 pt

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Abstract (Times New Roman, Size 12, Bold)

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Keywords (Times New Roman, Size 10, Bold, Italic): (Times New Roman, Size 10, Italic).

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1. Introduction (TNR, B, Numbered)

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2. Modied networks-of-zones model

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$$\varepsilon_5 = \phi_1 + \frac{\partial w_0}{\partial x_1} - z^2 \times \left(\frac{4}{H^2}\right) \times \left(\phi_1 + \frac{\partial w_0}{\partial x_1}\right) \quad ...(1)$$

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Table 1, (TNR, Size 10)

(TNR, Size 10, Bold)

(u/g substrate)	(u /g protein)	(weight/ volume)
0.48	6.30	1.00
0.60	10.00	1.50
0.70	11.90	2.50
0.79	12.40	3.00
0.75	11.50	3.50
0.50	7.70	4.50
0.30	2.80	5.50

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$$\int_{t2}^{t1} (\delta U - \delta K)\partial t = 0 \quad \ldots(2)$$

$$\delta U = \int_A \int_z \sigma_1 \delta\varepsilon_1 + \sigma_2 \delta\varepsilon_2 + \sigma_3 \delta\varepsilon_3 + \sigma_6 \delta\varepsilon_6$$

$$+ \sigma_5 \delta\varepsilon_5 + \sigma_4 \delta\varepsilon_4 \times Rd\theta dz dx$$

$$\delta K = -\int_t \iiint_V R\rho \left(\ddot{u}\,\delta u + \ddot{v}\,\delta v + \ddot{w}\,\delta w \right) dz dx d\theta dt$$

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3. Experimental (TNR, Size 12, Bold)

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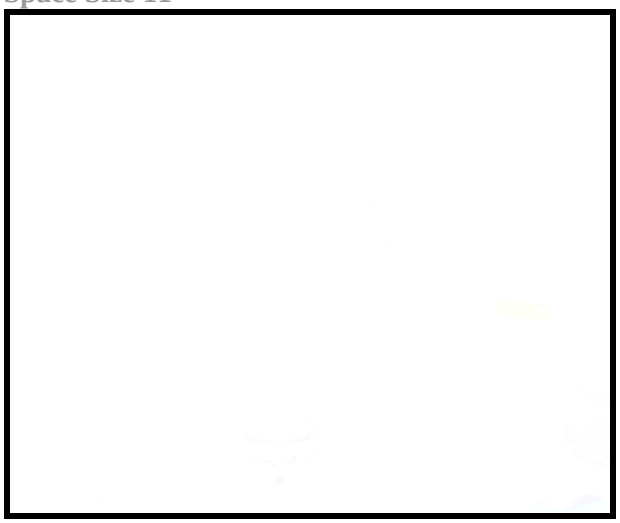

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Fig. 1. (TNR, Size 10, Bold, line sapcing 1).

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Experimental procedures

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Table 2, (TNR, Size 10)
(TNR, Size 10, Bold)

(R/a)	Theory	[0-90]		[0-90-0]		[0-90-90-0]	
		(a/H)=100	(a/H)=10	(a/H)=100	(a/H)=10	(a/H)=100	(a/H)=10
5	FST	28.825	9.230	30.993	12.372	31.079	12.437
	Present Work	28.829	9.307	30.999	12.018	31.083	12.007
	FEM	27.563	8.872	29.253	11.563	30.146	11.683
	Discrepancy%	4.3	4.7	5.63	3.67	3	2.6
10	FST	16.706	8.984	20.347	12.215	20.380	12.280
	Present Work	16.710	9.064	20.353	11.853	20.385	11.840
	FEM	16.001	8.254	19.754	11.102	19.831	11.024
	Discrepancy%	4.24	9	2.9	6.1	2.71	6.64
20	FST	11.841	8.921	16.627	12.176	16.638	12.240
	Present Work	11.847	9.002	16.634	11.811	16.643	11.798
	FEM	11.011	8.201	16.001	11.310	15.885	11.023
	Discrepancy%	7.06	8.97	3.807	4.11	4.55	6.33

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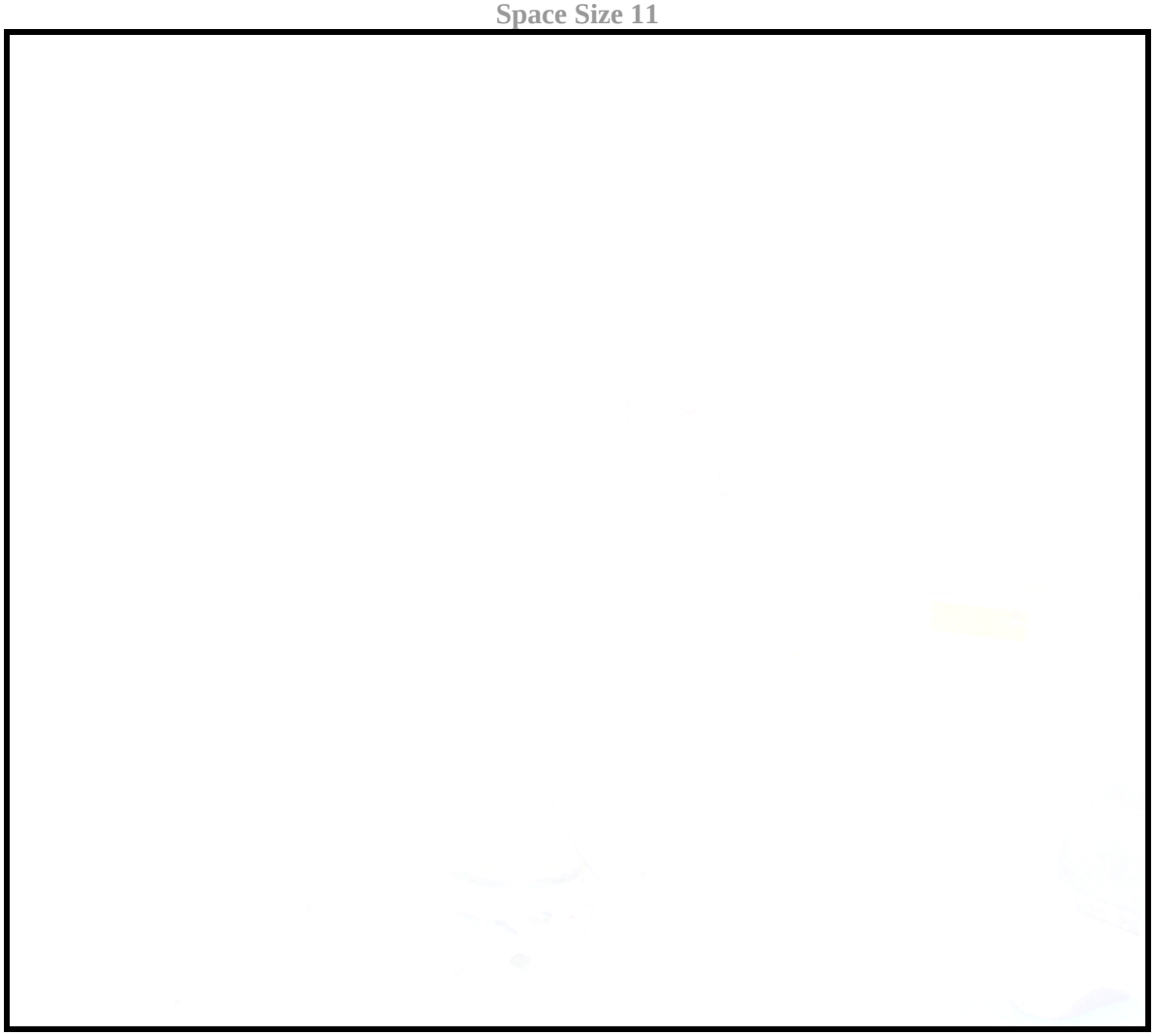

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Fig. 2. (TNR, Size 10, Bold, line sapcing 1).

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4. Results and discussion

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Fig. 3. (TNR, Size 10, Bold, line sapcing 1).

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4.1. *Simulation* (TNR, Size 12, Bold, Italic)

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4.2. Model parameter setting

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5. Conclusion

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Notation (TNR, Size 12, Bold, line spacing 1)

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A coefficient matrix

C_i, C^*_i concentration and normalized concentration of $_i$th parcel

C, C_o concentration vectors at t = t and t = 0

k coefficient vector as defined in Eq. (7)

q volumetric flow rate of main convective stream

t time

v parcel volume

V; V_{ij} matrix formed by eigenvectors and its *ij*th component

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Greek letters (TNR, Size 12, Bold, Italic)

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α dimensionless interaction intensity between neighboring uprising streams

β dimensionless interaction intensity between neighboring uprising and down-coming streams

ε tolerance

λ_i *i*th eigenvalue

$\lambda_{max,\,R}$ real and part of eigenvalue with maximum nonzero real part

Λ diagonal matrix composed of eigenvalues

ω reciprocal of time needed to 6ll an empty parcel with volumetric flow rate q

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Acknowledgements (TNR, Size 12, Bold)

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6.References

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[1] [illegible]"

[2] [illegible]

[3] [illegible]

[4] [illegible]

[5] [illegible]

[6] [illegible]

[7] [illegible]

[8] [illegible]

[9] [illegible]

[10] [illegible]

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عنوان البحث (Times New Roman, Size 16, Bold)

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اسم الباحث او الباحثين (Times New Roman, Size 14, Bold)

عنوان الباحث او الباحثين (Times New Roman, Size 10, Italic)

البريد الالكتروني للباحث او الباحثين @yahoo.com بريد الباحث

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الخلاصة (Times New Roman, Size 12, Bold)

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Note:

For more than one auther, the names and addresses should be written as follows: *(For example)*

Auther 1*, auther 2** and auther 3***

* College of Engineering /University of Baghdad

** Departement of Chemical Engineering / University of Technology

*** Al-Khwarizmi College of Engineering / University of Baghdad

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