

Cumulative Indexes of Volumes 43–69: Volume Contents

- Vol. 43 No. 1 (1990) 1–10
HAYNES, H.W. (JR.), A parametric study of isothermal fixed bed catalytic reactors undergoing concentration-dependent deactivation [*Univ. Wyoming, Dept. Chem. Engr., Laramie, WY, USA*]
- Vol. 43 No. 1 (1990) 11–23
DESOUZA, C.A., LEE, H.H., Reactions of mixtures in supported catalysts. I. Models for catalyst deactivation and support pore size change and a single pellet behavior [*Univ. Florida, Dept. Chem. Engr., Gainesville, FL, USA*]
- Vol. 43 No. 1 (1990) 25–31
REST, A.J., SCURLOCK, R.G., WU, M.F., The solubilities of nitrous oxide, carbon dioxide, aliphatic ethers and alcohols, and water in cryogenic liquids [*Univ. Southampton, Dept. Chem., Southampton, Hants, England; Univ. Southampton, Inst. Cryogen, Southampton, Hants, England*]
- Vol. 43 No. 1 (1990) 33–40
GARCÍA-OCHOA, F., ROMERO, A., QUEROL, J., *n*-Octane liquid-phase oxidation catalyzed by cobalt salts: overall kinetic and product distribution [*Univ. Complutense Madrid, Dept. Chem. Engr., Madrid, Spain*]
- Vol. 43 No. 1 (1990) 41–48
CHO, L.-T., HUANG, T.-C., A method for the estimation of surface diffusivity in the absence of film mass transfer resistance [*Natl. Cheng-Kang Univ., Dept. Chem. Engr., Tainan, Taiwan*]
- Vol. 43 No. 1 (1990) 49–52
SPEDDING, P.L., CHEN, J.J.J., Prediction of holdup in solid–fluid flow [*Queens Univ. Belfast, Dept. Chem. Engr., Belfast, Antrim, North Ireland; Univ. Auckland, Dept. Chem. & Mat. Engr., Auckland, New Zealand*]
- Vol. 43 No. 1 (1990) 53–57
PAL, R., On the flow characteristics of highly concentrated oil-in-water emulsions [*Univ. Alberta, Dept. Chem. Engr., Edmonton, AB, Canada*]
- Vol. 43 No. 1 (1990) B1–B12
GUPTA, S.K., CHAND, S., Bioconversion of sugars to ethanol in an immobilized cell packed bed bioreactor – dynamic response to perturbations in process parameters [*Indian Inst. Technol., Dept. Biochem. Engr. & Biotechnol., New Delhi, India*]
- Vol. 43 No. 1 (1990) B13–B17
TEIXEIRA, J.A., MOTA, M., Experimental assessment of internal diffusion limitations in yeast flocs [*Univ. Oporto, INIC, Oporto, Portugal*]
- Vol. 43 No. 1 (1990) B19–B41
KAWASE, Y., MOO-YOUNG, M., Mathematical models for design of bioreactors: applications of Kolmogoroff's theory of isotropic turbulence [*Univ. Waterloo, Dept. Chem. Engr., Waterloo, ON, Canada*]
- Vol. 43 No. 2 (1990) 59–65
CHIANESE, A., ZINNAMOSCA, F., Ethanol dehydration by azeotropic distillation with a mixed-solvent entrainer [*Univ. Roma La Sapienza, Dept. Chem. Engr., Rome, Italy; Technipetrol, Rome, Italy*]
- Vol. 43 No. 2 (1990) 67–73
HAN, J.H., WILD, G., KIM, S.D., Phase holdup characteristics in three-phase fluidized beds [*Korea Adv. Inst. Sci. & Technol., Dept. Chem. Engr., Seoul, South Korea; Ecole Natl. Super. Ind. Chim., CNRS, Nancy, France*]
- Vol. 43 No. 2 (1990) 75–88
SHADID, F.T., HANDLEY, D., Nitrous acid formation and decomposition during the absorption of nitrogen oxides [*Univ. Leeds, Dept. Chem. Engr., Leeds, West-Yorkshire, England*]
- Vol. 43 No. 2 (1990) B43–B51
ALFANI, F., GALLIFUOCO, A., CANTARELLA, M., Study of Michaelis-Menten kinetics with linear-type product inhibition in ultrafiltration membrane reactors: mathematical model, experimental and data correlation [*Univ. L'Aquila, Dept. Chem. Engr., L'Aquila, Italy; Univ. Naples, Dept. Chem. Engr., Naples, Italy; Univ. Salerno, Inst. Chem. Food Engr., Baronissi, Italy*]
- Vol. 43 No. 2 (1990) B53–B66
SUN, Y.-D., GREVILLEOT, G., TONDEUR, D., Modelling and optimization of the cyclic regime of an ion-exchange process for sugar juice softening [*Ecole Natl. Super. Ind. Chim., CNRS, Nancy, France*]
- Vol. 43 No. 2 (1990) B67–B79
BEG, S.A., OBAID-UR-REHMAN, S., HASSAN, M.M., Studies on ammonia stripping in a wetted butterfly valve wastewater scrubber system [*King Fahd Univ. Petr. & Minerals, Dept. Chem. Engr., Dhahran, Saudi Arabia*]
- Vol. 43 No. 3 (1990) 95–105
ABRAHAM, M., SAWANT, S.B., Hydrodynamics and mass transfer characteristics of packed bubble columns [*Univ. Bombay, Dept. Chem. Technol., Bombay, Maharashtra, India*]
- Vol. 43 No. 3 (1990) 107–120
HORNU, J.M., LAPICQUE, F., STORCK, A., Hydrodynamics and mass transfer in a capillary gap cell provided with turbulence promoters [*Ecole Natl. Super. Ind. Chim., CNRS, Nancy, France*]
- Vol. 43 No. 3 (1990) 121–125
HAURE, P.M., HUDGINS, R.R., SILVESTON, P.L., Steady-state models for SO₂ oxidation in a trickle-bed reactor [*Univ. Waterloo, Dept. Chem. Engr., Waterloo, ON, Canada*]

- Vol. 43 No. 3 (1990) 127–136
D'SOUZA, R., FORNEY, L.J., Slow bimolecular reactions in a deflected turbulent jet [*Georgia Inst. Technol., Sch. Chem. Engn., Atlanta, GA, USA*]
- Vol. 43 No. 3 (1990) B81–B91
ALATIQI, I.M., DADKHAH, A.A., JABR, N.M., Dynamics and multivariable control analysis for anaerobic digestion [*Kuwait Inst. Sci. Res., Div. Petr. Petrochem. & Mat., Safat, Kuwait; Kuwait Univ., Coll. Engn. & Petr., Safat, Kuwait*]
- Vol. 43 No. 3 (1990) B93–B101
GUZY, S., RAUL, A., LOTAN, N., Coupling of kinetic processes and thermodynamic equilibria in two-substrate immobilized enzyme reactors [*Technion Israel Inst. Technol., Dept. Biomed. Engn., Haifa, Israel*]
- Vol. 43 No. 3 (1990) B103–B113
CHEN, J.T., HOFF, J.E., LEE, M.J., LIN, H.M., CHEN, Y.J., CHEN, L.F., Oil extraction of dried ground corn with ethanol [*Purdue Univ., Dept. Food Sci., West-Lafayette, IN, USA; Natl. Taiwan Inst. Technol., Dept. Chem. Engn., Taipei, Taiwan*]
- Vol. 44 No. 1 (1990) 1–9
LEE, G.S., KIM, S.D., Axial mixing of solids in turbulent fluidized beds [*Korea Adv. Inst. Sci. & Technol., Dept. Chem. Engn., Seoul, South Korea*]
- Vol. 44 No. 1 (1990) 11–25
KHARE, A.S., JOSHI, J.B., Effect of fine particles on gas hold-up in three-phase sparged reactors [*Univ. Bombay, Dept. Chem. Technol., Bombay, Maharashtra, India*]
- Vol. 44 No. 1 (1990) 27–41
CABASSUD, M., GOURDON, C., CASAMATTA, G., Single drop break-up in a Kühni column [*Ecole Natl. Super. Ingn. Genie Chim., CNRS, Toulouse, France*]
- Vol. 44 No. 1 (1990) 43–50
GURGEL, J.M., GRENIER, PH., Thermal conductivity measurements for AC-35 active carbon in the presence of gases (in French) [*CNRS, LIMSI, Orsay, France*]
- Vol. 44 No. 1 (1990) 51–52
GRANDJEAN, B.P.A., CARREAU, P.J., PARIS, J., Liquid axial dispersion in gas-liquid-solid fluidized beds – comments [*Ecole Polytech., Dept. Chem. Engn., Montreal, PQ, Canada*]
- Vol. 44 No. 1 (1990) 52–52
WILD, G., KIM, S.D., SABERIAN-BROUDIENNI, M., Liquid axial dispersion in gas-liquid-solid fluidized beds – reply [*Ecole Natl. Super. Ind. Chim., CNRS, Nancy, France*]
- Vol. 44 No. 1 (1990) B1–B13
BELFINK, H.H., VAN DEN HEUVEL, J.C., Bacterial aggregates of various and varying size and density – a structured model for biomass retention [*Univ. Amsterdam, Dept. Chem. Engn., Amsterdam, Netherlands*]
- Vol. 44 No. 1 (1990) B15–B23
MUSLU, Y., Dispersion in suspended growth systems [*Istanbul Tech. Univ., Fac. Civil Engn., Istanbul, Turkey*]
- Vol. 44 No. 1 (1990) B25–B30
WADE, J.L., CARR, P.W., Efficient and precise computation of Bessel function integrals [*Univ. Minnesota, Dept. Chem., Minneapolis, MN, USA; Hercules Res. Ctr., Wilmington, DE, USA; Univ. Minnesota, Ctr. Bioproc. Technol., Minneapolis, MN, USA*]
- Vol. 44 No. 2 (1990) 53–72
SHNAIDER, G.S., SHNAIDER, A.G., Kinetic models of catalytic cracking of oil fractions in single-stage and multistage reactors with fluidized beds and interpretation of experimental data of catalytic cracking performed in these reactors [*Hebrew Univ. Jerusalem, Casali Inst. Appl. Chem., Jerusalem, Israel*]
- Vol. 44 No. 2 (1990) 73–79
MIYOSHI, H., Flow characteristics in a parallel channel with both spacer and space [*Osaka Prefectural Radiat. Res. Inst., Sakai, Osaka, Japan*]
- Vol. 44 No. 2 (1990) 81–88
KROPHOLLER, H.W., GUESALAGA, A.R., Operability improvement of distillation columns [*Univ. Manchester, Inst. Sci. & Technol., Manchester, Lancs, England*]
- Vol. 44 No. 2 (1990) 89–95
TI, H.C., Mixed specification problems in pipeline network analysis: partitioning methods [*Natl. Univ. Singapore, Dept. Chem. Engn., Singapore, Singapore*]
- Vol. 44 No. 2 (1990) 97–106
ALI, A., BHATIA, S., Methyl tertiary butyl ether formation in a catalytic bed reactor – kinetic and modelling study [*Indian Inst. Technol., Dept. Chem. Engn., Kanpur, Uttar Pradesh, India*]
- Vol. 44 No. 2 (1990) 107–111
ALPER, E., Kinetics of reactions of carbon dioxide with diglycolamine and morpholine [*Kuwait Univ., Dept. Chem. Engn., Safat, Kuwait*]
- Vol. 44 No. 2 (1990) B31–B40
AFTIA, Y.A., EL-ZEKY, M.A., Bioleaching of non-ferrous sulfides with adapted thiophilic bacteria [*Ohio State Univ., Dept. Mat. Sci. & Engn., Columbus, OH, USA*]
- Vol. 44 No. 2 (1990) B41–B46
HOUBMANS, C.M., GERAATS, S.G.M., POTTERS, J.J.M., LUYBEN, K.C.H.A.M., Experimental determination of the mass transfer boundary layer around a spherical biocatalyst particle [*Delft Univ. Technol., Dept. Biochem. Engn., Delft, Netherlands*]
- Vol. 44 No. 2 (1990) B47–B50
NOBLE, R.D., GIUBILEO, G., VIOLANTE, V., FABIANI, C., Analysis of enzyme catalysis under batch conditions [*Univ. Colorado, Dept. Chem. Engn., Boulder, CO, USA; Energia Nucl. & Energia Alternat., Rome, Italy*]
- Vol. 44 No. 3 (1990) 113–118
ALLEN, R.M., ADDISON, P.A., Ion exchange equilibria for ternary systems from binary exchange data [*Univ. Canterbury, Dept. Chem. & Proc. Engn., Christchurch, New Zealand*]
- Vol. 44 No. 3 (1990) 119–127
GROSDIDIER, P., KENNEDY, P., Case study in multivariable control – main fractionator slurry pumparound [*Setpoint Inc., Houston, TX, USA; Amoco UK Ltd., Milford Haven, Dyfed, Wales*]
- Vol. 44 No. 3 (1990) 129–131
TAMBE, S.S., INAMDAR, S.R., KULKARNI, B.D., Sensitivity coefficients of oscillatory reaction systems [*Natl. Chem. Lab., Div. Chem. Engn., Poona, Maharashtra, India*]
- Vol. 44 No. 3 (1990) 133–139
SADA, E., KUMAZAWA, H., KORESAWA, E., Reaction kinetics and size control in the formation of monosized silica spheres by controlled hydrolysis of tetraethyl orthosilicate in ethanol [*Kyoto Techn. Univ., Dept. Chem. Engn., Kyoto, Japan*]

- Vol. 44 No. 3 (1990) 141–156
SAXENA, S.C., RAO, N.S., SAXENA, A.C., Heat transfer from a cylindrical probe immersed in a three-phase slurry bubble column [Univ. Illinois, Dept. Chem. Engr., Chicago, IL, USA]
- Vol. 44 No. 3 (1990) 157–166
DETSCH, R.M., SHARMA, R.N., The critical angle for gas bubble entrainment by plunging liquid jets [Naval Coastal Syst. Ctr., Panama City, FL, USA; Florida A&M Univ., Florida State Univ., Tallahassee, FL, USA]
- Vol. 44 No. 3 (1990) 167–172
JANICKE, W., Scheduling for multipurpose batch chemical plants [TH Carl Schorlemmer Leuna Merseburg, Merseburg, Germany]
- Vol. 44 No. 3 (1990) 173–175
DUIT, N.V.K., VENUGOPAL, D., Prediction of liquid viscosities of fluorinated hydrocarbons by the extended Thomas' method [Indian Inst. Chem. Technol., Hyderabad, Andhra Pradesh, India]
- Vol. 44 No. 3 (1990) B51–B55
VLAEV, S.D., VALEVA, M., Rheology and oxygen transfer in starch suspensions during high temperature (35°C) α -amylase fermentation [Bulgarian Acad. Sci., Inst. Chem. Engr., Sofia, Bulgaria]
- Vol. 44 No. 3 (1990) B57–B67
ATIQULLAH, M., HASSAN, M.M., BEG, S.A., Modeling of axial and recycle backmixing effects in a biological packed bed loop reactor [King Fahd Univ. Petr. & Minerals, Dhahran, Saudi Arabia]
- Vol. 44 No. 3 (1990) B69–B80
HILL, G.A., ROBINSON, C.W., A modified Ghose model for batch cultures of *Saccharomyces cerevisiae* at high ethanol concentrations [Univ. Saskatchewan, Dept. Chem. Engr., Saskatoon, SK, Canada; Univ. Waterloo, Dept. Chem. Engr., Waterloo, ON, Canada]
- Vol. 44 No. 3 (1990) B81–B86
NOBLE, R.D., VIOLANTE, V., GIUBILEO, G., FABIANI, C., Analysis of an implantable bio-artificial pancreas for insulin production [Univ. Colorado, Dept. Chem. Engr., Boulder, CO, USA; Energia Nucl. & Energia Alternat., Rome, Italy]
- Vol. 44 No. 3 (1990) B87–B90
KATO, M., KIUCHI, T., Biological rate equation for microbial films [Nihon Univ., Fac. Engr., Koriyama, Fukushima, Japan]
- Vol. 45 No. 1 (1990) 1–8
IATRIDIS, D., YUE, P.L., RIZZUTI, L., BRUCATO, A., The absorption of light energy in flat fluidized photoreactors [Univ. Palermo, Dipt. Ingn. Chim. Processi & Mat., Palermo, Italy; Univ. Bath, Sch. Chem. Engr., Bath, Avon, England]
- Vol. 45 No. 1 (1990) 9–24
LÉDÉ, J., LI, H.Z., SOULIGNAC, F., VILLERMAUX, J., Cyclone reactor. III: Efficiency of heat and mass transfer between reactor walls and a single circulating gas (in French) [Ecole Natl. Super. Ind. Chim., CNRS, Nancy, France]
- Vol. 45 No. 1 (1990) 25–31
BALDYGA, J., BOURNE, J.R., Comparison of the engulfment and the interaction-by-exchange-with-the-mean micromixing models [Swiss Fed. Inst. Technol., Tech. Chem. Lab., Zurich, Switzerland]
- Vol. 45 No. 1 (1990) 33–42
SEDRAN, U., MAHAY, A., DE LASA, H.I., Modelling methanol conversion to hydrocarbons: alternative kinetic models [UNL, CONICET, Santa Fe, Argentina; Petro Canada, Res. Div., Mississauga, ON, Canada; Univ. Western Ontario, Fac. Engr. Sci., London, ON, Canada]
- Vol. 45 No. 1 (1990) 43–48
ZHANG, G.T., WANNENMACHIER, N., HAIDER, A., LEVENSPIEL, O., How to narrow the residence time distribution of fluids in laminar flow in pipes [Oregon State Univ., Dept. Chem. Engr., Corvallis, OR, USA]
- Vol. 45 No. 1 (1990) 49–54
RAMACHANDRAN, P.A., Boundary integral solution method for axial-dispersion-with-reaction problems [Washington Univ., Dept. Chem. Engr., St. Louis, MO, USA]
- Vol. 45 No. 1 (1990) 55–74
SPEDDING, P.L., SPENCE, D.R., HANDS, N.P., Prediction of holdup in two-phase gas-liquid inclined flow [Queens Univ. Belfast, Dept. Chem. Engr., Belfast, Antrim, North Ireland]
- Vol. 45 No. 1 (1990) 75–77
RAO, M.V., RAMONA, Determination of configuration factors in thermal radiative heat transfer: Monte Carlo methods [Reg. Res. Lab., Div. Chem. Engr., Hyderabad, Andhra Pradesh, India]
- Vol. 45 No. 1 (1990) 79–81
OZBELGE, H.O., SOMER, T.G., Performance of a new packing with low pressure drop [Middle-East Tech. Univ., Dept. Chem. Engr., Ankara, Turkey]
- Vol. 45 No. 1 (1990) B1–B4
LEE, J.Y., VELAYUDHAN, A., LADISCH, M.R., Maintaining constant enzyme activity in a continuous-flow reactor [Purdue Univ., Renewable Resources Engr. Lab., West-Lafayette, IN, USA; Purdue Univ., Dept. Agr. Engr., West-Lafayette, IN, USA]
- Vol. 45 No. 2 (1990) 83–86
DUIT, N.V.K., A simple method of estimating the viscosity of petroleum crude oil and fractions [Indian Inst. Chem. Technol., Div. Chem. Engr., Hyderabad, Andhra Pradesh, India]
- Vol. 45 No. 2 (1990) 87–97
ANGELOV, G., JOURNE, E., LINE, A., GOURDON, C., Simulation of the flow patterns in a disc and doughnut column [Ctr. Lab. Chem. Engr., Sofia, Bulgaria; Ecole Natl. Super. Ingn. Genie Chim., CNRS, Toulouse, France; Inst. Mecan Fluides, Toulouse, France]
- Vol. 45 No. 2 (1990) 99–110
ABDEL-AAL, H.K., AL-ZAKRI, A.S., EL-SARHA, M.E., EL-SWIFY, M.E., ASSASSA, G.M., Other options of mass and energy input for steam jet refrigeration systems [King Fahd Univ. Petr. & Minerals, Dept. Chem. Engr., Dhahran, Saudi Arabia; Natl. Res. Ctr., Dept. Solar Energy, Cairo, Egypt]
- Vol. 45 No. 2 (1990) 111–122
MILOT, J.F., DUHAMET, J., GOURDON, C., CASAMATTA, G., Simulation of a pneumatically pulsed liquid-liquid extraction column [CENFAR, Fontenay Roses, France; Ecole Natl. Super. Ingn. Genie Chim., CNRS, Toulouse, France]
- Vol. 45 No. 2 (1990) 123–132
BRUNJAIL, D., COMTE, J., Mass transfer and energy aspects for forced flow through packed beds of long cylindrical particles [Inst. Univ. Technol., Genie Proc. Lab., St. Nazaire, France]
- Vol. 45 No. 2 (1990) 133–135
KANNAN, A., HARIKRISHNAN, T.L., VARMA, Y.B.G., A numerical technique for the estimation of the true mass transfer coefficient in extraction columns [Indian Inst. Technol., Dept. Chem. Engr., Madras, Tamil Nadu, India]

- Vol. 45 No. 2 (1990) B5–B11
 BESCHKOV, V., KOSSEVA, M., Biotransformation of D-sorbitol to L-sorbose by *Gluconobacter-suboxydans* entrapped in a polyacrylamide gel [Bulgarian Acad. Sci., Inst. Chem. Engr., Sofia, Bulgaria]
- Vol. 45 No. 2 (1990) B13–B25
 TIO, C., FANG, T.N., CHIN, C.W., WATKINS, J.B., FELTON, N., GREAVES, H., Rheology of creosote-based wood preservative emulsions [Monash Univ., Dept. Chem. Engr., Clayton, VIC, Australia; East-China Univ. Sci. & Technol., Dept. Chem. Engr., Shanghai, P.R. China; CSIRO, Div. Forestry & Forest Prod., Clayton, VIC, Australia]
- Vol. 45 No. 2 (1990) B27–B34
 RAMACHANDRAN, K.B., HASHIM, M.A., Simulation studies on simultaneous saccharification and fermentation of cellulose to ethanol [Univ. Malaya, Dept. Chem. Engr., Kuala Lumpur, Malaysia]
- Vol. 45 No. 3 (1991) 137–147
 KMIEC, A., LESCHONSKI, K., Analysis of two-phase flows in gas-solids injectors [Techn. Univ. Clausthal, Inst. Mech. & Umweltverfahrenstechnik, Clausthal-Zellerfeld, Germany]
- Vol. 45 No. 3 (1991) 149–164
 DOMENECH, S., PIBOULEAU, L., FLOQUET, P., Enumeration of sequences of complex rectification columns (in French) [Ecole Natl. Super. Ingn. Genie Chim., CNRS, Toulouse, France]
- Vol. 45 No. 3 (1991) 165–171
 DAS, S.K., BISWAS, M.N., MITRA, A.K., Non-newtonian liquid flow in bends [Indian Inst. Technol., Dept. Chem. Engr., Kharagpur, West-Bengal, India]
- Vol. 45 No. 3 (1991) B35–B47
 LIVINGSTON, A.G., CHASE, H.A., Development of a phenol degrading fluidized bed bioreactor for constant biomass holdup [Univ. Cambridge, Dept. Chem. Engr., Cambridge, England]
- Vol. 45 No. 3 (1991) B49–B56
 HANNOTE, M., FLORES, F., TORRES, L., GALINDO, E., Apparent yield stress estimation in xanthan gum solutions and fermentation broths using a low-cost viscometer [Univ. Nacl. Autonoma Mexico, Ctr. Investigac. Ingn., Genet. & Biotecnol., Cuernavaca, Mexico]
- Vol. 45 No. 3 (1991) B57–B66
 SHEINTUCH, M., Design criteria for population selection in activated sludge [Technion Israel Inst. Technol., Dept. Chem. Engr., Haifa, Israel]
- Vol. 45 No. 3 (1991) B67–B77
 BRUTTINI, R., ROVERO, G., BALDI, G., Experimentation and modelling of pharmaceutical lyophilization using a pilot plant [Crioforma, Freeze Drying Equipment, Turin, Italy; Politecn. Turin, Dipt. Sci. Mat. & Ingn. Chim., Turin, Italy]
- Vol. 46 No. 1 (1991) 1–7
 POHORECKI, R., KUCIARSKI, E., Desorption with chemical reaction in the system CO₂-aqueous solution of potassium carbonate [Warsaw Univ. Technol., Dept. Chem. & Proc. Engr., Warsaw, Poland; Tech. Univ. Rzeszow, Dept. Engr. & Chem. Proc. Control, Rzeszow, Poland]
- Vol. 46 No. 1 (1991) 9–14
 LIU, C.H., ZHANG, D.H., SUN, C.G., SHEN, Z.Q., The modelling and simulation of a multistage crystallizer [Dalian Univ. Technol., Dept. Chem. Engr., Dalian, P.R. China]
- Vol. 46 No. 1 (1991) 15–21
 MARUYAMA, T., SATO, H., Liquid fluidization in conical vessels [Kyoto Univ., Dept. Chem. Engr., Kyoto, Japan]
- Vol. 46 No. 1 (1991) 23–28
 TAMBE, S.S., INAMDAR, S.R., BANDYOPADHYAY, J.K., KULKARNI, B.D., Parametric sensitivity of complex reaction systems [Natl. Chem. Lab., Div. Chem. Engr., Poona, Maharashtra, India]
- Vol. 46 No. 1 (1991) 29–34
 WANG, Z.-X., PULTS, J.D., GREENKORN, R.A., CHAO, K.-C., Equilibrium vaporization of oils by the chain-of-rotators group contribution equation of state [Purdue Univ., Sch. Chem. Engr., West-Lafayette, IN, USA]
- Vol. 46 No. 1 (1991) 35–42
 BRANDANI, S., BRANDANI, V., DEL RE, G., DI GIACOMO, G., Activity coefficients from a virial expansion about their infinite-dilution values [Univ. L'Aquila, Dept. Chem. Engr., L'Aquila, Italy]
- Vol. 46 No. 1 (1991) B1–B10
 GROOT, W.J., DEN REYER, M.C.H., DE LA FAILLE, T. BAART, VAN DER LANS, R.G.J.M., LUYBEN, K.CH.A.M., Integration of pervaporation and continuous butanol fermentation with immobilized cells. I: Experimental results [Delft Univ. Technol., Dept. Biochem. Engr., Delft, Netherlands]
- Vol. 46 No. 1 (1991) B11–B19
 GROOT, W.J., DEN REYER, M.C.H., VAN DER LANS, R.G.J.M., LUYBEN, K.CH.A.M., Integration of pervaporation and continuous butanol fermentation with immobilized cells. II: Mathematical modelling and simulations [Delft Univ. Technol., Dept. Biochem. Engr., Delft, Netherlands]
- Vol. 46 No. 1 (1991) B21–B29
 RUGGERI, B., GIANETTO, A., SICARDI, S., SPECCHIA, V., Diffusion phenomena in the spherical matrices used for cell immobilization [Politecn. Turin, Dipt. Sci. Mat. & Ingn. Chim., Turin, Italy]
- Vol. 46 No. 1 (1991) B31–B34
 PATHAK, S.P., SUDHA, S., SAWANT, S.B., JOSHI, J.B., New salt-polyethylene-glycol systems for two-phase aqueous extraction [Univ. Bombay, Dept. Chem. Technol., Bombay, Maharashtra, India]
- Vol. 46 No. 2 (1991) 47–60
 KILKIS, B., Computer-aided analysis of fluidized bed to external wall local heat transfer [Morgantown Energy Technol. Ctr., Morgantown, WV, USA]
- Vol. 46 No. 2 (1991) 61–68
 DE AGUDELO, M.M., RAMIREZ, GALARRAGA, C., A stable catalyst for heavy oil processing. III: Activity and selectivity [Intevep SA, Catalisis Aplicada, Caracas, Venezuela]
- Vol. 46 No. 2 (1991) 69–78
 SKOCZYLAŚ, A., MAJEWSKI, W., Effective interfacial area in mechanical thin-layer apparatus [Wroclaw Tech. Univ., Inst. Chem. Engr., Wroclaw, Poland]
- Vol. 46 No. 2 (1991) 79–89
 GULTEKIN, S., KHALEEQ, M., AL-SALEH, M.A., Kinetics of hydrodenitrogenation of quinoline in the presence of H₂S, H₂O and NH₃ using an integral flow reactor [King Fahd Univ. Petr. & Minerals, Dept. Chem. Engr., Dhahran, Saudi Arabia]
- Vol. 46 No. 2 (1991) 91–96
 SUTRADHAR, B.C., RAY, P., DUTTA, B.K., Selectivity behaviour of non-uniform catalysts for the consecutive reactions A→B→C

- [Univ. Calcutta, Dept. Chem. Engr., Calcutta, West-Bengal, India]
- Vol. 46 No. 2 (1991) B35-B41
GUPTA, B.S., DUFFA, T.K., Monte Carlo simulation of the crystal size distribution in a continuous sucrose crystallizer [Jadavpur Univ., Dept. Chem. Engr., Calcutta, West-Bengal, India]
- Vol. 46 No. 2 (1991) B43-B51
BERNET, N., NAOURI, P., ARNAUD, A., GALZY, P., RIOS, G.M., Bioconversion of acrylonitrile into acrylamide using a highly compact multiphase reactor [Ecole Natl. Super Agron, INRA, Montpellier, France; Univ. Montpellier 2, Div. Genie Procedes, Montpellier, France]
- Vol. 46 No. 2 (1991) B53-B58
KUMAR, P.K.R., SANKAR, K.U., LONSANE, B.K., Supercritical fluid extraction from dry mouldy bran for the purification of gibberellic acid from the concomitant products produced during solid state fermentation [Ctr. Food Technol. Res. Inst., Fermentat. Technol. & Bioengn., Mysore, Karnataka, India]
- Vol. 46 No. 2 (1991) B59-B68
CRINE, M., SCHLITZ, M., VANDEVENNE, L., A partial wetting model for aerobic trickling filters [Univ. Liege, Inst. Chim., Liege, Belgium; CEBEDEAU, Liege, Belgium]
- Vol. 46 No. 3 (1991) 97-108
PORTER, K.E., MOMOH, S.O., Finding the optimum sequence of distillation columns - an equation to replace the "rules of thumb" (heuristics) [Univ. Aston, Dept. Chem. Engr. & Appl. Chem., Birmingham, West-Midlands, England]
- Vol. 46 No. 3 (1991) 109-118
CHAOUKI, J., KLVANA, D., PONTIER, T., BELANGER, G., Deactivation of the catalyst Pt-Sn/Al₂O₃ during dehydrogenation of methylcyclohexane (in French) [Ecole Polytech., Dept. Chem. Engr., Montreal, PQ, Canada; Inst. Rech. Hydro Quebec, Varennes, PQ, Canada]
- Vol. 46 No. 3 (1991) 119-128
MURA, G., LALLAI, A., OLLA, P., On the kinetics of dry desulfurization with calcium oxide [Univ. Cagliari, Dipt. Ingn. Chim., Cagliari, Italy]
- Vol. 46 No. 3 (1991) 129-136
DEMICHELI, M.C., PONZI, E.N., FERRETTI, O.A., YURAMIAN, A.A., Kinetics of carbon formation from CH₄-H₂ mixtures on nickel-alumina catalyst [Natl. Univ. La Plata, CINDECA, La Plata, Argentina]
- Vol. 46 No. 3 (1991) 137-148
GOUBDON, C., CASAMATTA, G., ANGELINO, H., Single drop experiments with liquid test systems: a way of comparing two types of mechanically agitated extraction columns [Ecole Natl. Super. Ingn. Genie Chim., CNRS, Toulouse, France]
- Vol. 46 No. 3 (1991) B69-B74
DEKKER, M., VAN'T RIET, K., VAN DER POEL, J.J., BAELJUSSEN, J.W.A., HILHORST, R., BIJSTERBOSCH, B.H., Effect of temperature on the reversed micellar extraction of enzymes [Agr. Univ. Wageningen, Dept. Food Sci., Wageningen, Netherlands; Agr. Univ. Wageningen, Dept. Biochem. Wageningen, Netherlands; Agr. Univ. Wageningen, Dept. Phys. & Colloid Chem., Wageningen, Netherlands]
- Vol. 46 No. 3 (1991) B75-B81
RAO, K.S.M.S.R., SZLAG, D.S., SIKDAR, S.K., JOSHI, J.B., SAWANT, S.B., Protein extraction in a spray column using a polyethylene-glycol maltodextrin two-phase polymer system [Natl. Inst. Stand. & Technol., Ctr. Chem. Technol., Boulder, CO, USA; Univ. Bombay, Dept. Chem. Technol., Bombay, Maharashtra, India]
- Vol. 46 No. 3 (1991) B83-B91
RADEZ, I., HUDCOVA, V., KOLOJMI, T., Heat transfer in aerated and non-aerated mycelial fermentation systems in stirred tank reactors [Krka, Pharmaceut. & Chem. Works, Novo Mesto, Yugoslavia; Prague Inst. Chem. Technol., Dept. Chem. Engr., Prague, Czech Rep.; Univ. Ljubljana, Dept. Chem. & Chem. Technol., Ljubljana, Slovenia]
- Vol. 46 No. 3 (1991) B93-B98
YU, Q.M., DO, D.D., Reversed displacement chromatography of adsorptions with unfavorable equilibrium isotherms [Univ. Queensland, Dept. Chem. Engr., Brisbane, QLD, Australia]
- Vol. 47 No. 1 (1991) 1-9
DAOUDI, M., WALTERS, J.K., A thermogravimetric study of the reaction of hydrogen chloride gas with calcined limestone: determination of kinetic parameters [Univ. Nottingham, Dept. Chem. Engr., Nottingham, England]
- Vol. 47 No. 1 (1991) 11-16
DAOUDI, M., WALTERS, J.K., The reaction of HCl gas with calcined commercial limestone particles: the effect of particle size [Univ. Nottingham, Dept. Chem. Engr., Nottingham, England]
- Vol. 47 No. 1 (1991) 17-24
ADESINA, A.A., Non-isothermal reactor design for variable-density systems [Univ. Waterloo, Dept. Chem. Engr., Waterloo, ON, Canada]
- Vol. 47 No. 1 (1991) 25-32
HUNG, T.M., LEE, C.J., A model analysis of a membrane-partitioned electrode reactor [Natl. Tsing-Hua Univ., Dept. Chem. Engr., Hsinchu, Taiwan]
- Vol. 47 No. 1 (1991) 33-45
CHANG, M.-Y., MORSI, B.I., Mass transfer characteristics of gases in *n*-decane at elevated pressures and temperatures in agitated reactors [Univ. Pittsburgh, Dept. Chem. & Petr. Engr., Pittsburgh, PA, USA]
- Vol. 47 No. 1 (1991) 47-50
LEE, G.S., KIM, S.D., BAIRD, M.H.I., Axial mixing of fine particles in fluidized beds [McMaster Univ., Dept. Chem. Engr., Hamilton, ON, Canada; Korea Adv. Inst. Sci. & Technol., Dept. Chem. Engr., Seoul, South Korea]
- Vol. 47 No. 1 (1991) 51-61
DEBALOYE, M.M., STOCKAR, U.V., LI, X.-P., The influence of viscosity on the liquid-phase mass transfer resistance in packed columns [Swiss Fed. Inst. Technol., Dept. Chem. Engr., Lausanne, Switzerland]
- Vol. 47 No. 1 (1991) B1-B10
CONVERTI, A., DEL BORGHI, M., SOMMARIVA, C., Ethanol production in an entrapped yeast cell column [Univ. Genoa, Inst. Sci. & Technol. Chem. Engr., Genoa, Italy; TECNAL, Genoa, Italy]
- Vol. 47 No. 2 (1991) 63-73
FRIMPONG, S., PLANK, C.A., LAUKHUF, W.L.S., Sorption and transport of sulfur dioxide in polycarbonate-polyarylate blends [NASA, Lewis Res. Ctr., Cleveland, OH, USA; Univ. Louisville, Dept. Chem. Engr., Louisville, KY, USA]
- Vol. 47 No. 2 (1991) 75-82
TSAI, F.-N., WU, J.-C., HUANG, T.-C., Ionic transport through an ion exchange membrane [Natl. Cheng Kung Univ., Dept. Chem. Engr., Tainan, Taiwan]

- Vol. 47 No. 2 (1991) 83-89
ADESINA, A.A., HUDGINS, R.R., SILVESTON, P.L., Effect of periodic dosing of ethene in the Fischer-Tropsch synthesis [Univ. Waterloo, Dept. Chem. Engr., Waterloo, ON, Canada]
- Vol. 47 No. 2 (1991) 91-103
SAXENA, S.C., RAO, N.S., YOUSUF, M., Heat transfer and hydrodynamic investigations conducted in a bubble column with powders of small particles and a viscous liquid [Univ. Illinois, Dept. Chem. Engr., Chicago, IL, USA]
- Vol. 47 No. 2 (1991) 105-112
GONZÁLEZ-VELASCO, J.R., GUTIÉRREZ-ORTIZ, M.A., GUTIÉRREZ-ORTIZ, J.I., GONZÁLEZ-MARCOS, J.A., Analysis of combined temperature and space time trajectories to maintain constant the exit conversion of fixed bed reactors with catalyst decay [Univ. País Vasco, Fac. Sci., Bilbao, Spain]
- Vol. 47 No. 2 (1991) 113-118
ABABIO, B.D., MCELROY, P.J., SALT, B., WILLIAMSON, A.G., On the determination of second virial coefficients from pressure measurements only [Univ. Canterbury, Dept. Chem. & Proc. Engr., Christchurch, New Zealand]
- Vol. 47 No. 2 (1991) 119-132
FLOQUET, P., PIBOULLEAU, L., DOMENECH, S., Setting up complex distillation columns (in French) [Ecole Natl. Super. Ingn. Genie Chim., CNRS, Toulouse, France]
- Vol. 47 No. 2 (1991) B11-B21
SHEINTUCH, M., WOLFFBERG, A., Fixed-bed reactor design for self-inhibitory substrates [Technion Israel Inst. Technol., Dept. Chem. Engr., Haifa, Israel]
- Vol. 47 No. 3 (1991) 135-139
ANABTAWI, M.Z., UYSAL, B.Z., JUMAH, R.Y., ABDEL-JALIL, N.K., Gas hold-up in a bidimensional two-phase spouted bed [Jordan Univ. Sci. & Technol., Dept. Chem. Engr., Irbid, Jordan]
- Vol. 47 No. 3 (1991) 141-148
NAUMAN, E.B., On residence time and trajectory calculations in motionless mixers [Rensselaer Polytech. Inst., Isermann Dept. Chem. Engr., Troy, NY, USA]
- Vol. 47 No. 3 (1991) 149-153
NAUMAN, E.B., A circulation time model for fed-batch reactors [Rensselaer Polytech. Inst., Isermann Dept. Chem. Engr., Troy, NY, USA]
- Vol. 47 No. 3 (1991) 155-162
BOURNE, J.R., LIPS, M., Micromixing in grid-generated turbulence: theoretical analysis and experimental study [Swiss Fed. Inst. Technol., Tech. Chem. Lab., Zurich, Switzerland]
- Vol. 47 No. 3 (1991) 163-167
DU, L.G., GUO, T.-M., A semi-theoretical viscosity model for non-polar liquids [Univ. Petr., Beijing, P.R. China]
- Vol. 47 No. 3 (1991) 169-185
RAMACHANDRAN, P.A., Boundary integral element method for linear diffusion-reaction problems with discontinuous boundary conditions [Washington Univ., Dept. Chem. Engr., St. Louis, MO, USA]
- Vol. 47 No. 3 (1991) 187-191
ZARRAA, M.A., EL-TAWIL, Y.A., FARAG, H.A., EL-ABD, M.Z., SEDAHEMED, G.H., Effect of gas sparging on the rate of mass transfer at a single sphere [Univ. Alexandria, Fac. Engr., Alexandria, Egypt]
- Vol. 47 No. 3 (1991) B23-B34
TING, Y.P., LAWSON, F., PRINCE, I.G., The influence of cadmium and zinc on the cell size distribution of the alga *Chlorella vulgaris* [Natl. Univ. Singapore, Dept. Chem. Engr., Singapore, Singapore; Monash Univ., Dept. Chem. Engr., Clayton, VIC, Australia]
- Vol. 47 No. 3 (1991) B35-B44
VASCONCELOS, J.M.T., ALVES, S.S., Direct dynamic $k_{1,a}$ measurement in viscous fermentation broths - the residual gas hold-up problem [Inst. Super Tecn, Dept. Chem. Engr., Lisbon, Portugal]
- Vol. 48 No. 1 (1992) 1-9
O'HARE, K.D., SPEDDING, P.L., Evaporation of a binary liquid mixture [British Gas Plc, Midlands Res. Sm., Solihull, West-Midlands, England; Queens Univ. Belfast, Dept. Chem. Engr., Belfast, Antrim, North Ireland]
- Vol. 48 No. 1 (1992) 11-16
ASAADI, M., WHITE, D.A., A model for determining the steady state flux of inorganic microfiltration membranes [Univ. London Imperial Coll. Sci. Technol. & Med., Dept. Chem. Engr., London, England]
- Vol. 48 No. 1 (1992) 17-29
KEISKI, R.L., SALMI, T., POHJOLA, V.J., Development and verification of a simulation model for a non-isothermal water-gas shift reactor [Univ. Oulu, Dept. Proc. Engr., Oulu, Finland; Finland Swedish Univ. Abo, Dept. Chem. Engr., Turku, Finland]
- Vol. 48 No. 1 (1992) 31-40
WANG, Y.W., XU, S., OTTO, F.D., MATHER, A.E., Solubility of N_2O in alkanolamines and in mixed solvents [Univ. Alberta, Dept. Chem. Engr., Edmonton, AB, Canada]
- Vol. 48 No. 1 (1992) 41-48
POIZAT, T., JAILLUT, C., ACCARY, A., LIETO, J., A novel experimental technique for measurement of mass transfer between liquids and gas bubbles in agitated vessels: application to highly viscous liquids [Univ. Lyon 1, Automat. & Genie Procédés Lab., Villeurbanne, France]
- Vol. 48 No. 1 (1992) 49-59
MARCHOT, P., CRINE, M., L'HOMME, G.A., Rational description of trickle flow through packed beds. Part I: Liquid distribution far from the distributor [Univ. Liege, Inst. Chim., Liege, Belgium]
- Vol. 48 No. 1 (1992) 61-70
MARCHOT, P., CRINE, M., L'HOMME, G.A., Rational description of trickle flow through packed beds. Part II: Radial spreading of the liquid [Univ. Liege, Inst. Chim., Liege, Belgium]
- Vol. 48 No. 1 (1992) B1-B7
OGASAWARA, K.-J., TSUDA, S., OZAWA, K., SAKAI, K., Protein adsorption on microporous membranes for plasma separation and its effects on flux decay [Waseda Univ., Dept. Chem. Engr., Tokyo, Japan]
- Vol. 48 No. 2 (1992) 71-81
ATIQUILLAH, M., HASSAN, M.M., BEG, S.A., Influence of the gel effect and backmixing on the dynamics and rate parameters of bulk copolymerization in a tubular reactor - theoretical analysis [King Fahd Univ. Petr. & Minerals, Res. Inst., Dhahran, Saudi Arabia; King Fahd Univ. Petr. & Minerals, Dept. Chem. Engr., Dhahran, Saudi Arabia]
- Vol. 48 No. 2 (1992) 83-99
LEDÉ, J., LI, H.Z., SOULIGNAC, F., VILLERMAUX, J., Cyclone reactor. IV: Measurement of heat transfer efficiency between

- walls and gas or solid-phases (in French) [*Ecole Natl. Super. Ind. Chim., CNRS, Nancy, France*]
- Vol. 48 No. 2 (1992) 101–110
 PUDJONO, P.I., TAVARE, N.S., GARSIDE, J., NIGAM, K.D.P.,
 Residence time distribution from a continuous Couette flow device [*Univ. Manchester, Inst. Sci. & Technol., Manchester, Lancs, England*]
- Vol. 48 No. 2 (1992) 111–118
 VETERE, A., A semi-empirical equation of state applied to vapor–liquid equilibria calculations [*Snamprogetti Res. Labs, San Donato Milanese, Italy*]
- Vol. 48 No. 2 (1992) 119–127
 FRANCES, C., BISCANS, B., LAGUÉRIE, C., Determination of the kinetics of growth and dissolution of sodium perborate tetrahydrate in a fluidized bed (in French) [*Ecole Natl. Super. Ingn. Genie Chim., CNRS, Toulouse, France*]
- Vol. 48 No. 2 (1992) 129–133
 OLIVER, D.R., The horizontal stretching of test liquid Al [*Univ. Birmingham, Sch. Mech. Engn., Birmingham, West-Midlands, England*]
- Vol. 48 No. 2 (1992) 135–140
 MASIUK, S., LACKI, H., STREK, F., Power consumption and mixing times for liquid mixing in a ribbon mixer [*Tech. Univ. Szczecin, Dept. Chem. Engn., Szczecin, Poland*]
- Vol. 48 No. 2 (1992) B9–B11
 MANKAD, T., NAUMAN, E.B., Modeling of microbial growth under dual limitations [*Rensselaer Polytech. Inst., Isermann Dept. Chem. Engn., Troy, NY, USA*]
- Vol. 48 No. 3 (1992) 141–151
 GHARAT, S.D., JOSHI, J.B., Transport phenomena in bubble column reactors. I: Flow pattern [*Univ. Bombay, Dept. Chem. Technol., Bombay, Maharashtra, India*]
- Vol. 48 No. 3 (1992) 153–166
 GHARAT, S.D., JOSHI, J.B., Transport phenomena in bubble column reactors. II: Pressure drop [*Univ. Bombay, Dept. Chem. Technol., Bombay, Maharashtra, India*]
- Vol. 48 No. 3 (1992) 167–172
 SCHOTTE, W., Prediction of the molar volume at the normal boiling point [*Wilmington, DE, USA*]
- Vol. 48 No. 3 (1992) 173–182
 BOSSY, A., FONDUER, D., JEDRZEJAK, A., A non-linear equilibrium analysis of blowdown policy in pressure-swing-adsorption separation [*Ecole Natl. Super. Ind. Chim., CNRS, Nancy, France; Tech. Univ. Szczecin, Dept. Chem. Engn., Szczecin, Poland*]
- Vol. 48 No. 3 (1992) 183–190
 ASH, S.N., Group unary Wilson model for liquid mixtures without arbitrary parameters [*Univ. Calcutta, Dept. Chem. Engn., Calcutta, West-Bengal, India*]
- Vol. 48 No. 3 (1992) 191–195
 ROSAL, R., CABO, F., DIEZ, F., SASTRE, H., Hydrogen incorporation during the hydrogenation reaction of an anthracene oil [*Univ. Oviedo, Dept. Chem. Engn., Oviedo, Spain*]
- Vol. 48 No. 3 (1992) 197–210
 HAND, N.P., SPEDDING, P.L., RALPH, S.J., The effect of surface tension on flow pattern, holdup and pressure drop during horizontal air-water pipe flow at atmospheric conditions [*Queens Univ. Belfast, Dept. Chem. Engn., Belfast, Antrim, North Ireland*]
- Vol. 48 No. 3 (1992) 211–214
 LAKSHMI, D.S., PRASAD, D.H.L., A rapid estimation method for thermal conductivity of pure liquids [*Indian Inst. Chem. Technol., Hyderabad, Andhra Pradesh, India*]
- Vol. 48 No. 3 (1992) B15–B22
 CARO, I., PEREZ, L., CANTERO, D., WEBB, C., Modelling of ethanol evaporative losses during batch alcohol fermentation [*Univ. Cadiz, Dept. Chem. Engn., Cadiz, Spain; Univ. Manchester, Inst. Sci. & Technol., Manchester, Lancs, England*]
- Vol. 49 No. 1 (1992) 1–10
 GIONA, M., ROMAN, H.E., A theory of transport phenomena in disordered systems [*Univ. Roma La Sapienza, Dept. Chem. Engn., Rome, Italy; Univ. Hamburg, Inst. Theoret. Phys. 1, Hamburg, Germany*]
- Vol. 49 No. 1 (1992) 11–16
 TORRESAN, A., GRENIER, PH., An experimental set-up for the thermal measurement of the kinetics of adsorption (in French) [*CNRS, LIMSI, Orsay, France*]
- Vol. 49 No. 1 (1992) 17–26
 ASH, M., KALOGERAKIS, N., BEHIE, L.A., On the constancy of axial dispersion coefficients in liquid fluidized beds [*Univ. Calgary, Fac. Engn., Calgary, AB, Canada*]
- Vol. 49 No. 1 (1992) 27–33
 VETERE, A., Again the Rackett equation [*Snamprogetti Res. Labs, San Donato Milanese, Italy*]
- Vol. 49 No. 1 (1992) 35–43
 KAO, Y.K., FAN, H.Q., CHEN, S.H., A membrane reactor with two dispersion-free interfaces for homogeneous catalytic reactions [*Univ. Cincinnati, Dept. Chem. Engn., Cincinnati, OH, USA*]
- Vol. 49 No. 1 (1992) 45–48
 ZRNCEVIC, S., MEIDER, H., PLAVSIC, D., Effect of catalyst preparation on Ni-Al₂O₃ poisoning by thiophene [*Univ. Zagreb, Dept. Chem. React. Engn., Zagreb, Croatia; Rudjer Boskovic Inst., Zagreb, Croatia*]
- Vol. 49 No. 1 (1992) 49–54
 MA, X.L., HONG, D.Z., HUANG, R.J., XU, T.P., Gas holdup and volumetric liquid phase mass transfer coefficients in a downjet loop reactor [*Prov. Res. Inst. Environm. Protect Sci., Shandong, P.R. China; Chengdu Univ. Sci. & Technol., Dept. Chem. Engn., Chengdu, P.R. China; Anqing Petrochem. Engn. Co., Anqing, P.R. China*]
- Vol. 49 No. 1 (1992) 55–64
 AZZOPARDI, B.J., Gas–liquid flows in cylindrical venturi scrubbers: boundary layer separation in the diffuser section [*Univ. Nottingham, Dept. Chem. Engn., Nottingham, England*]
- Vol. 49 No. 1 (1992) 65–71
 SOLANKI, M.K.S., MUKHERJEE, A.K., DAS, T.R., Bubble formation at closely spaced orifices in aqueous solutions [*Indian Inst. Sci., Dept. Chem. Engn., Bangalore, Karnataka, India*]
- Vol. 49 No. 1 (1992) B1–B12
 YENKIL, M.K.N., GLISSEN, S.U., VOGELPOHL, A., Biokinetics of wastewater treatment in the high performance compact reactor (HCR) [*Techn. Univ. Clausthal, Inst. Therm. Verfahrenstechnik, Clausthal-Zellerfeld, Germany*]
- Vol. 49 No. 1 (1992) B13–B16
 ALVAREZ, J., Gas–liquid bioreactors: maximum stable bubble size [*Univ. Autonoma Metropolitana Iztapalapa, Dept. Ingn. Proc. & Hidraul., Mexico City, Mexico*]

- Vol. 49 No. 2 (1992) 73–78
IBIDAPO, T., ADESANYA. Application of redox potentials in the selection of reducing agents for vat dyes [*Lagos State Univ., Fac. Engr., Apapa, Nigeria*]
- Vol. 49 No. 2 (1992) 79–88
GOURARI, S., ROUSSY, G., THIEBAUT, J.M., ZOULALIAN, A.. Study on catalytic reaction in presence of microwave-radiation (in French) [*Univ. Nancy I, CNRS, Vandoeuvre Nancy, France*]
- Vol. 49 No. 2 (1992) 89–105
LELE, S.S., JOSHI, J.B., Modelling of air-lift fluidized bed: optimization of mass transfer with respect to design and operational parameters [*Univ. Bombay, Dept. Chem. Technol., Bombay, Maharashtra, India*]
- Vol. 49 No. 2 (1992) 107–117
REWATKAR, V.B., JOSHI, J.B., Effect of addition of alcohol on the design parameters of mechanically agitated three-phase reactors [*Univ. Bombay, Dept. Chem. Technol., Bombay, Maharashtra, India*]
- Vol. 49 No. 2 (1992) 119–126
KENIG, E.YA., KHOLPANOV, L.P., Simultaneous mass and heat transfer with reactions in a multicomponent, laminar, falling liquid film [*Russian Acad. Sci., Inst. New Chem. Problems, Chernogolovka, Russia*]
- Vol. 49 No. 2 (1992) 127–131
HADJIEV, D., AURELLE, Y., CASAMATTA, G., GOURDON, C., PENEVA, L., Study on a new type of mixer-settler [*Inst. Natl. Sci. Appl., Dept. Genie Proc., Toulouse, France; Ecole Natl. Super. Ingn. Genie Chim., CNRS, Toulouse, France*]
- Vol. 49 No. 2 (1992) B17–B21
ADACHI, S., TANIMOTO, M., TANAKA, M., MATSUNO, R., Kinetics of the alkaline nitrobenzene oxidation of lignin in rice straw [*Kyoto Univ., Fac. Agr., Kyoto, Japan; Okayama Univ. Sci., Fac. Sci., Okayama, Japan*]
- Vol. 49 No. 2 (1992) B23–B28
SOMMARIVA, C., CONVERTI, A., DEL BORGHI, M., FERRAILOLO, G., A theoretical approach to the evaluation of the effectiveness factor in an entrapped yeast cell column [*Univ. Genoa, Inst. Sci. & Technol. Chem. Engr., Genoa, Italy; Univ. Genoa, Inst. Sci. & Technol. Chem. Engr., Genoa, Italy*]
- Vol. 49 No. 3 (1992) 133–139
YONEMOTO, T., NITTA, H., KAWATA, T., TADAKI, T., Modelling of the isothermal oxidative stabilization of mesophase pitch fibre [*Tohoku Univ., Dept. Biochem. & Engr., Sendai, Miyagi, Japan*]
- Vol. 49 No. 3 (1992) 141–149
BERNIE, J.P., LACOSTE, G., Determination of granulometric distribution of liquid–liquid, solid–liquid and solid–solid dispersed media – development of computer-assisted image-analysis (in French) [*Ecole Natl. Super. Ingn. Genie Chim., CNRS, Toulouse, France*]
- Vol. 49 No. 3 (1992) 151–159
SAXENA, S.C., RAO, N.S., THIMMAPURAM, P.R., Gas phase holdup in slurry bubble columns for two- and three-phase systems [*Univ. Illinois, Dept. Chem. Engr., Chicago, IL, USA*]
- Vol. 49 No. 3 (1992) 161–166
BUCZKO, Z., The modelling of a rinsing process in electroplating lines [*Inst. Precis Mech., Warsaw, Poland*]
- Vol. 49 No. 3 (1992) 167–175
TENU, R., COUINOUX, J.J., Quinary system H₂O–NaCl–CaCl₂–SrCl₂–BaCl₂ – exploitation of the 65°C isotherm for extraction of barium and strontium chlorides (in French) [*Univ. Lyon I, Lab. Phys. Chim. Minerale, Villeurbanne, France*]
- Vol. 49 No. 3 (1992) 177–180
BADIN, V., CVENGROS, J., Model of temperature profiles during condensation in a film in a molecular evaporator [*Slovak Tech. Univ., Fac. Chem. Technol., Bratislava, Slovakia*]
- Vol. 49 No. 3 (1992) B29–B39
HOSSAIN, M.M., DO, D.D., The effects of denaturation in the displacement chromatographic behaviour of proteins [*Univ. Queensland, Dept. Chem. Engr., Brisbane, QLD, Australia*]
- Vol. 49 No. 3 (1992) B41–B49
DO, D.D., HU, S.-G., NGUYEN, T.S., Separation of dipeptides on a reverse-phase column: effect of non-linear intrinsic adsorption kinetics [*Univ. Queensland, Dept. Chem. Engr., St. Lucia, QLD, Australia*]
- Vol. 50 No. 1 (1992) 1–7
KAWASE, Y., UMENO, S., KUMAGAI, T., The prediction of gas hold-up in bubble column reactors: newtonian and non-newtonian fluids [*Kanazawa Inst. Technol., Ctr. Biotechnol. Res., Nonoichi, Ishikawa, Japan*]
- Vol. 50 No. 1 (1992) 9–25
SASTRI, S.R.S., RAO, K.K., A new group contribution method for predicting viscosity of organic liquids [*Reg. Res. Lab., Bhubaneswar, Orissa, India*]
- Vol. 50 No. 1 (1992) 27–31
RATOARINORO, N., WILHELM, A.M., BERLAN, J., DELMAS, H., Effects of ultrasound emitter type and power on a heterogeneous reaction [*Ecole Natl. Super. Ingn. Genie Chim., CNRS, Toulouse, France*]
- Vol. 50 No. 1 (1992) 33–45
NAKAYAMA, A., SHENOY, A.V., A unified similarity transformation for Darcy and non-Darcy forced-, free- and mixed-convection heat transfer in non-newtonian inelastic fluid-saturated porous media [*Shizuoka Univ., Dept. Energy & Mech. Engr., Hamamatsu, Shizuoka, Japan*]
- Vol. 50 No. 1 (1992) 47–56
JAMIALAHMADI, M., MÜLLER-STEINHAGEN, H., Effect of alcohol, organic acid and potassium chloride concentration on bubble size, bubble rise velocity and gas hold-up in bubble columns [*Univ. Auckland, Dept. Chem. & Mat. Engr., Auckland, New Zealand*]
- Vol. 50 No. 1 (1992) B1–B7
MIGIRO, C.L.C., SOKOL, W., Operational range for a continuous stirred-tank bioreactor degrading an inhibitory substrate [*Univ. Dar-es-Salaam, Dept. Chem. & Proc. Engr., Dar-es-Salaam, Tanzania*]
- Vol. 50 No. 1 (1992) B9–B16
WEBB, C., ATKINSON, B., The role of chemical engineering in biotechnology [*Univ. Manchester, Inst. Sci. & Technol., Manchester, Lancs, England; Brewing Ind. Res. Fdn., Nutfield, Surrey, England*]
- Vol. 50 No. 2 (1992) 59–67
ZIMMELS, Y., Use of the composite energy density for analysis of the stability of the composite phase in magnetized fluidized beds [*Technion Israel Inst. Technol., Dept. Civil Engr., Haifa, Israel; Technion Israel Inst. Technol., Dept. Chem. Engr., Haifa, Israel*]
- Vol. 50 No. 2 (1992) 69–77
BALUAI, G., DODDS, J.A., The calculation of drainage rates of filter cakes with a two-phase flow model [*Ecole Natl. Super. Ind. Chim., CNRS, Nancy, France*]

- Vol. 50 No. 2 (1992) 79–86
LEE, W.-C., Solution method for a class of heat and mass transfer problems in a heterogeneous system [*Chung-Yuan Christian Univ., Dept. Chem. Engn., Chungli, Taiwan*]
- Vol. 50 No. 2 (1992) 87–94
CHIANESE, A., FRANCES, C., DI BERARDINO, F., BRUNO, L., On the behaviour of a liquid fluidized bed of monosized sodium perborate crystals [*Ecole Natl. Super. Ingn. Genie Chim., CNRS, Toulouse, France; Univ. Roma La Sapienza, Rome, Italy; Montefluos Spa, Bussi Officine, Italy*]
- Vol. 50 No. 2 (1992) 95–107
PENLIDIS, A., PONNUSWAMY, S.R., KIPARISIDES, C., O'DRISCOLL, K.F., Polymer reaction engineering: modelling considerations for control studies [*Univ. Waterloo, Dept. Chem. Engn., Waterloo, ON, Canada*]
- Vol. 50 No. 2 (1992) 109–113
FAHIDY, T.Z., A study of performance and optimization of tank-electrolyzer cascades [*Univ. Waterloo, Dept. Chem. Engn., Waterloo, ON, Canada*]
- Vol. 50 No. 2 (1992) B17–B22
MELIN, E., SHIEH, W.K., Continuous ethanol production from glucose using *Saccharomyces cerevisiae* immobilized on fluidized microcarriers [*Univ. Penn, Dept. Syst. Philadelphia, PA, USA; Tampere Univ., Tampere, Finland*]
- Vol. 50 No. 2 (1992) B23–B28
BARKER, P.E., GANETSOS, G., AJONGWEN, J., AKINTOYE, A., Bioreaction-separation on continuous chromatographic systems [*Univ. Aston, Dept. Chem. Engn. & Appl. Chem., Birmingham, West-Midlands, England*]
- Vol. 50 No. 2 (1992) B29–B37
KAWALEC-PIETRENKO, B.T., Time-dependent gas hold-up and bubble size distributions in a gas–highly viscous liquid–solid system [*Gdansk Tech. Univ., Dept. Chem. Engn. & Apparatus, Gdansk, Poland*]
- Vol. 50 No. 3 (1992) 115–121
VITAL, J., ALMEIDA, V., LOBO, L.S., Kinetic modelling with phase equilibria of α -pinene hydration to terpine in isobutanol-water [*Univ. Nova Lisboa, Dept. Quim., Monte de Caparica, Portugal*]
- Vol. 50 No. 3 (1992) 123–131
BARRESI, A.A., HUNG, S.L., PFEFFERLE, L.D., Methane combustion in a catalytically stabilized thermal burner [*Yale Univ., Dept. Chem. Engn., New Haven, CT, USA*]
- Vol. 50 No. 3 (1992) 133–141
TI, H.C., PREECE, P.E., Large-scale fluid network analysis: mixed pressure and flow specifications [*Natl. Univ. Singapore, Dept. Chem. Engn., Singapore, Singapore; Univ. Coll. Swansea, Dept. Chem. Engn., Swansea, West-Glam. Wales*]
- Vol. 50 No. 3 (1992) 143–147
ANABTAWI, M.Z., UYSAL, B.Z., Gas hold-up in a bi-dimensional three-phase spouted bed [*Univ. Bahrain, Dept. Chem. Engn., Isa Town, Bahrain; Gazi Univ., Dept. Chem. Engn., Ankara, Turkey*]
- Vol. 50 No. 3 (1992) 149–157
SKOCZYLAŚ, A., URBANSKI, A., Influence of vibrating element on heat transfer in a thin layer evaporator [*Wroclaw Tech. Univ., Inst. Chem. Engn., Wroclaw, Poland*]
- Vol. 50 No. 3 (1992) 159–163
RANGAIAH, G.P., KRISHNASWAMY, P.R., Set point weighting for simplified model predictive control [*Natl. Univ. Singapore, Dept. Chem. Engn., Singapore, Singapore*]
- Vol. 50 No. 3 (1992) 165–168
AHMED, K., CHOWDHURY, H.M., Dehydrogenation of cyclohexane and cyclohexene over supported nickel and platinum catalysts [*Bangladesh Univ. Engn. & Technol., Dept. Chem. Engn., Dhaka, Bangladesh*]
- Vol. 50 No. 3 (1992) 169–171
LE GOFF, H., SOETRISNANTO, A., SCHWARZER, B., LE GOFF, P., A new falling film evaporator with spiral fins [*Ecole Natl. Super. Ind. Chim., CNRS, Nancy, France*]
- Vol. 50 No. 3 (1992) B39–B43
YANG, Z.F., YU, S.Q., CHEN, C.Y., The extraction of penicillin G with neutral phosphorus esters [*Chinese Acad. Sci., Inst. Chem. Met., Beijing, P.R. China*]
- Vol. 50 No. 3 (1992) B45–B49
LINKO, P., RAUMAN AALTO, P., MÖLLER, S., AARTS, R.J., KORTELA, U., ARMAX modelling and state estimation of an enzyme fermentation process [*Helsinki Univ. Technol., Biotechnol. & Food Engn. Lab., Espoo, Finland; Helsinki Univ. Technol., Proc. Control Lab., Espoo, Finland*]
- Vol. 51 No. 1 (1993) 1–6
SHAH, P.R., KOVVALI, A.S., KHAN, G.Y., KHAN, A.A., Prediction of permselectivity of nitrate and acetate ions in the electro dialysis of aqueous solutions [*Indian Inst. Chem. Technol., Div. Chem. Engn., Hyderabad, Andhra Pradesh, India*]
- Vol. 51 No. 1 (1993) 7–18
HOPKINS, J.S., GOLDING, J.A., The effect of heat transfer rate on the characteristics and operation of a tubular reactor [*Univ. Ottawa, Dept. Chem. Engn., Ottawa, ON, Canada*]
- Vol. 51 No. 1 (1993) 19–28
RATNAM, G.S.V., ANANTH, M.S., VARMA, Y.B.G., A model for the pressure drop in gas–liquid cocurrent downflow through packed beds [*Indian Inst. Technol., Dept. Chem. Engn., Madras, Tamil Nadu, India*]
- Vol. 51 No. 1 (1993) 29–39
GEISLER, R.K., BUURMAN, C., MERSMANN, A.B., Scale-up of the necessary power input in stirred vessels with suspensions [*Koninklijke Shell Exptl. Prod. Lab., Amsterdam, Netherlands; Techn. Univ. Munich, Munich, Germany*]
- Vol. 51 No. 1 (1993) 41–44
DUIT, N.V.K., RAVIKUMAR, Y.V.L., RAJIAH, A., Prediction of liquid viscosities of phosphorus-containing compounds by Souders' method [*Indian Inst. Chem. Technol., Div. Chem. Engn., Hyderabad, Andhra Pradesh, India*]
- Vol. 51 No. 1 (1993) 45–52
SAN JOSÉ, M.J., OLÁZAR, M., AGUAYO, A.T., ARANDES, J.M., BILBAO, J., Expansion of spouted beds in conical contactors [*Univ. Pais Vasco, Dept. Chem. Engn., Bilbao, Spain*]
- Vol. 51 No. 1 (1993) 53–60
OLÁZAR, M., SAN JOSÉ, M.J., AGUAYO, A.T., ARANDES, J.M., BILBAO, J., Pressure-drop in conical spouted beds [*Univ. Pais Vasco, Dept. Chem. Engn., Bilbao, Spain*]
- Vol. 51 No. 1 (1993) B1–B9
TSAI, S.-W., CHIANG, C.-L., Strategy for deciding between the use of single or biphasic systems as media for biocatalytic transformations using chemical equilibrium analysis [*Natl. Cheng-Kung Univ., Dept. Chem. Engn., Tainan, Taiwan*]
- Vol. 51 No. 1 (1993) B11–B16
ALVAREZ, J., MERAZ, M., Control of enzyme activity in stirred bioreactors [*Univ. Autonoma Metropolitana Iztapalapa, Dept.*

- Ingn. Proc. & Hidraul., Mexico City, Mexico; Univ. Autonoma Metropolitana Iztapalapa, Dept. Biotecnol., Mexico City, Mexico*
- Vol. 51 No. 2 (1993) 63–75
VAZQUEZ-ESPARRAGOZA, J.J., LATIL, S.L., HOLLAND, C.D., NAUGLE, N.W., Solution of difficult steady state separation problems by use of the functional transformation method [*Texas Inst. Adv. Chem. Technol., Coll. Str., TX, USA; Texas A&M Univ. Syst., Dept. Math., Coll. Str., TX, USA*]
- Vol. 51 No. 2 (1993) 77–81
WU, J.-Y., CHEN, T.-L., WENG, H.-S., Estimation of kinetic parameters in a fixed bed reactor: application of fast Fourier transform [*Natl. Cheng-Kung Univ., Dept. Chem. Engn., Tainan, Taiwan*]
- Vol. 51 No. 2 (1993) 83–92
JANG, S.-S., Dynamic optimization of multicomponent batch distillation processes using continuous and discontinuous collocation polynomial policies [*Natl. Tsing-Hua Univ., Dept. Chem. Engn., Hsinchu, Taiwan*]
- Vol. 51 No. 2 (1993) 93–98
MIDDA, U., RAY, P., DUTTA, B.K., Non-isothermal enhancement factor for mass transfer with instantaneous reaction in a rigid drop [*Univ. Calcutta, Dept. Chem. Engn., Calcutta, West-Bengal, India*]
- Vol. 51 No. 2 (1993) 99–108
OLAUSSON, S., WALLIN, M., BJERLE, I., A model for the absorption of sulfur dioxide into a limestone slurry [*Lund Univ., Ctr. Chem., Lund, Sweden*]
- Vol. 51 No. 2 (1993) 109–112
KRISHNAIAH, K., GURU, S., SEKAR, V., Hydrodynamic studies on inverse gas–liquid–solid fluidization [*Indian Inst. Technol., Dept. Chem. Engn., Madras, Tamil Nadu, India*]
- Vol. 51 No. 2 (1993) 113–119
OLIVER, D.R., Uniaxial and biaxial stretching of silicone putty [*Univ. Birmingham, Sch. Chem. Engn., Birmingham, West-Midlands, England*]
- Vol. 51 No. 2 (1993) B17–B23
GHILDYAL, N.P., RAMAKRISHNA, M., LONSANE, B.K., KARANTH, N.G., KRISHNAIAH, M.M., Temperature variations and amyloglucosidase levels at different bed depths in a solid state fermentation system [*Ctr. Food Technol. Res. Inst., Fermentat Technol. & Bioengn., Mysore, Karnataka, India*]
- Vol. 51 No. 2 (1993) B25–B33
ATIQUILLAH, M., RAHMAN, A.K.M.S., BEG, S.A., HASSAN, M.M., The order of micromixing and segregation effects on the biological growth process in a stirred-tank reactor [*King Fahd Univ. Petr. & Minerals, Res. Inst., Dhahran, Saudi Arabia; King Fahd Univ. Petr. & Minerals, Dept. Chem. Engn., Dhahran, Saudi Arabia*]
- Vol. 51 No. 2 (1993) B35–B42
STERBACEK, Z., VOTRUBA, J., An expert system applied to the control of an industrial-scale bioreactor [*Acad. Sci. Czech Rep., Inst. Microbiol., Prague, Czech Rep.*]
- Vol. 51 No. 3 (1993) 121–128
MARUYAMA, T., KOYANAGI, T., Fluidization in tapered vessels [*Kyoto Univ., Fac. Engn., Kyoto, Japan*]
- Vol. 51 No. 3 (1993) 129–133
KUMAZAWA, H., HORI, Y., SADA, E., Synthesis of spherical zirconia fine particles by controlled hydrolysis of zirconium tetrabutoxide in 1-propanol [*Kyoto Univ., Dept. Chem. Engn., Kyoto, Japan*]
- Vol. 51 No. 3 (1993) 135–150
BASCOU, A., COUDERC, J.P., DELMAS, H., Movement of solid particles in liquid fluidized beds (in French) [*Ecole Natl. Super. Ingn. Genie Chim., CNRS, Toulouse, France*]
- Vol. 51 No. 3 (1993) 151–158
VAN DER WALT, T.J., VAN DEVENTER, J.S.J., BARNARD, E., The estimation of kinematic viscosity of petroleum crude oils and fractions with a neural net [*Univ. Stellenbosch, Dept. Met. Engn., Stellenbosch, South Africa; Univ. Pretoria, Dept. Electr. & Comput. Engn., Pretoria, South Africa*]
- Vol. 51 No. 3 (1993) 159–166
LEITAO, A., RODRIGUES, A., Modelling of solid-liquid adsorption: effects of adsorbent heterogeneity [*Univ. Oporto, Dept. Chem. Engn., Oporto, Portugal; Agostinho Neto Univ., Fac. Engn., Luanda, Angola*]
- Vol. 51 No. 3 (1993) 167–176
GAYUBO, A.G., ARANDES, J.M., AGUAYO, A.T., OLAZAR, M., BILBAO, J., Temperature vs. time sequences to palliate deactivation in parallel and in series-parallel with the main reaction: parametric study [*Univ. Pais Vasco, Dept. Chem. Engn., Bilbao, Spain*]
- Vol. 51 No. 3 (1993) B43–B50
AIONGWEN, J.N., AKINTOYE, A., BARKER, P.E., GANETSOS, G., SHIEH, M.T., Large-scale purification of *Leuconostoc mesenteroides* NRRL-B512F dextranase for use in the biosynthesis of dextran by batch and continuous chromatography [*Univ. Aston, Dept. Chem. Engn. & Appl. Chem., Birmingham, West-Midlands, England*]
- Vol. 51 No. 3 (1993) B51–B56
SMIDOVNIK, A., PLAZL, I., KOLOINI, T., Kinetics of catalytic transfer hydrogenation of soybean oil [*Natl. Inst. Chem., Dept. Food Chem., Ljubljana, Slovenia; Univ. Ljubljana, Dept. Chem. & Chem. Technol., Ljubljana, Slovenia*]
- Vol. 51 No. 3 (1993) B57–B61
GARCIA, A.I., GARCIA, L.A., DIAZ, M., Mixing in unstirred batch fermenters [*Univ. Oviedo, Dept. Chem. Engn., Oviedo, Spain*]
- Vol. 51 No. 3 (1993) B63–B66
JAYARAMAN, V.K., Solution of hollow fibre bioreactor design equations for zero-order limit of Michaelis–Menten kinetics [*Natl. Chem. Lab., Div. Chem. Engn., Poona, Maharashtra, India*]
- Vol. 52 No. 1 (1993) 1–7
FAVRE, E., VOUMARD, P., STOCKAR, U.V., PÉRINGER, P., A capacitance probe to characterize gas bubbles in stirred tank reactors [*Ecole Polytech. Fed. Lausanne, Lab. Genie Biol., Lausanne, Switzerland; Ecole Polytech. Fed. Lausanne, Inst. Genie Chim., Lausanne, Switzerland*]
- Vol. 52 No. 1 (1993) 9–12
NETUSIL, J., RIEGER, F., Power consumption of screw and helical ribbon agitators in highly viscous pseudoplastic fluids [*Czech Tech. Univ., Dept. Chem. & Food Proc. Equipment Design, Prague, Czech Rep.*]
- Vol. 52 No. 1 (1993) 13–17
MASIUK, S., LACKI, H., Power consumption and mixing time for newtonian and non-newtonian liquids mixing in a ribbon mixer [*Tech. Univ. Szczecin, Dept. Chem. Engn., Szczecin, Poland*]
- Vol. 52 No. 1 (1993) 19–29
RAO, S.P., KRISHNA, R., Film model for mass transfer in non-ideal multicomponent fluid mixtures [*Ctr. Leather Res. Inst., Div.*

- Chem. Engr., Madras, Tamil Nadu, India; Univ. Amsterdam, Dept. Chem. Engr., Amsterdam, Netherlands*
- Vol. 52 No. 1 (1993) 31–35
PRASAD, T.E., VITTAL, RAJIAH, A., PRASAD, D.H.L., On the dependence of liquid heat capacity on temperature and molecular structure [*Indian Inst. Chem. Technol., Div. Chem. Engr., Hyderabad, Andhra Pradesh, India*]
- Vol. 52 No. 1 (1993) 37–39
RIVERA-UTRILLA, J., MORENO-CASTILLA, C., UTRERA-HIDALGO, E., CARRASCO-MARÍN, F., Removal of tannic acid from aqueous solutions by activated carbons [*Univ. Granada, Fac. Ciencias, Granada, Spain*]
- Vol. 52 No. 1 (1993) 41–47
MARCHETTI, A., TAGLIAZUCCHI, M., TASSI, L., TOSI, G., Kinematic viscosities of binary mixtures of 1,2-ethanediol and 2-methoxyethanol at different temperatures [*Univ. Modena, Dept. Chem., Modena, Italy*]
- Vol. 52 No. 1 (1993) 49–50
SUH, I.-S., DECKWER, W.-D., Comment on studies on the heat transfer in slurry bubble columns [*Ges. Biotechnol. Forsch. mbH, Braunschweig, Germany*]
- Vol. 52 No. 1 (1993) 51–52
SAXENA, S.C., CHEN, Z.D., Comment on studies on the heat transfer in slurry bubble columns – reply [*Univ. Illinois, Dept. Chem. Engr., Chicago, IL, USA*]
- Vol. 52 No. 1 (1993) B1–B12
PAPAYANNAKOS, N., MARKAS, G., KEKOS, D., Studies on modelling and simulation of lactose hydrolysis by free and immobilized β -galactosidase from *Aspergillus niger* [*Natl. Tech. Univ., Dept. Chem. Engr., Zografos, Greece*]
- Vol. 52 No. 1 (1993) B13–B19
BADER, J., BELLGARDT, K.-H., SCHÜGERL, K., Modelling and simulation of the enzymatic hydrolysis of potato pulp by a complex enzyme mixture [*Univ. Hannover, Inst. Tech. Chem., Hannover, Germany*]
- Vol. 52 No. 1 (1993) B21–B28
CONVERTI, A., DEL BORGHI, M., FERRAILOLO, G., Influence of organic loading rate on the anaerobic treatment of high strength semisynthetic waste waters in a biological fluidized bed [*Univ. Genoa, Inst. Sci. & Technol. Chem. Engr., Genoa, Italy*]
- Vol. 52 No. 1 (1993) B29–B34
LIN, H., YANG, Z., CHEN, L.F., Inactivation of *Leuconostoc dextranicum* with carbon dioxide under pressure [*Purdue Univ., Dept. Food Sci., West-Lafayette, IN, USA*]
- Vol. 52 No. 2 (1993) 55–62
YAU, J.-S., TSAI, F.-N., Solubilities of carbon dioxide in normal paraffins [*Natl. Cheng-Kung Univ., Dept. Chem. Engr., Tainan, Taiwan*]
- Vol. 52 No. 2 (1993) 63–71
MONTILLET, A., COMITI, J., LEGRAND, J., Axial dispersion in liquid flow through packed reticulated metallic foams and fixed beds of different structures [*Inst. Univ. Technol., Genie Proc. Lab., St. Nazaire, France*]
- Vol. 52 No. 2 (1993) 73–77
WHITE, D.A., LESECO, P., Optimization of intermittently operated microfiltration processes [*Univ. London Imperial Coll. Sci. Technol. & Med., Dept. Chem. Engr., London, England*]
- Vol. 52 No. 2 (1993) 79–88
BARRESI, A.A., MAZZARINO, I., VANNI, M., BALDI, G., Catalytic afterburners with not fully developed flow: modelling and experimental performances [*Politecn. Turin, Dipt. Sci. Mat. & Ingn. Chim., Turin, Italy*]
- Vol. 52 No. 2 (1993) 89–92
FERNÁNDEZ-LOZANO, J.A., Production of potassium sulfate-magnesium sulfate double salt and magnesium-chloride-rich solution from seawater bitterns [*Univ. Oriente, Dept. Chem. Engr., Puerto La Cruz, Venezuela*]
- Vol. 52 No. 2 (1993) 93–98
VETERE, A., The prediction of pure component properties in the subcritical range using an equation of state [*Snamprogetti Res. Labs, San Donato Milanese, Italy*]
- Vol. 52 No. 2 (1993) 99–103
MARIYAMA, T., KOYANAGI, T., Slugging fluidized beds in tapered vessels [*Kyoto Univ., Fac. Engr., Kyoto, Japan*]
- Vol. 52 No. 2 (1993) B35–B48
NANCIB, N., MOSRATI, R., BOUDRANT, J., Modelling of batch fermentation of a recombinant *Escherichia coli* producing glyceraldehyde-3-phosphate dehydrogenase on a complex selective medium [*ENSAIA, Sci. Genie Chim. Lab., Vandoeuvre Nancy, France*]
- Vol. 52 No. 2 (1993) B49–B58
AITKEN, M.D., Waste treatment applications of enzymes: opportunities and obstacles [*Univ. North-Carolina, Sch. Publ. Hlth., Chapel Hill, NC, USA*]
- Vol. 52 No. 3 (1993) 107–114
NI, X., MACKLEY, M.R., Chemical reaction in batch pulsatile flow and stirred tank reactors [*Teesside Polytech, Sch. Sci. & Technol., Middlesbrough, Cleveland, England; Univ. Cambridge, Dept. Chem. Engr., Cambridge, England*]
- Vol. 52 No. 3 (1993) 115–120
SINHA, A.S.K., SHANKAR, V., Characterization and activity of cobalt oxide catalysts for total oxidation of hydrocarbons [*Banaras Hindu Univ., Dept. Chem. Engr. & Technol., Varanasi, Uttar Pradesh, India*]
- Vol. 52 No. 3 (1993) 121–129
PANJA, N.C., RAO, D.P., Measurement of gas-liquid parameters in a mechanically agitated contactor [*Indian Inst. Technol., Dept. Chem. Engr., New Delhi, India*]
- Vol. 52 No. 3 (1993) 131–135
HWANG, S.-J., LIU, C.-B., LU, W.-J., Solid-liquid mass transfer in a non-newtonian liquid fluidized bed [*Natl. Tsing-Hua Univ., Dept. Chem. Engr., Hsinchu, Taiwan*]
- Vol. 52 No. 3 (1993) 137–147
LEGENTILHOMME, P., AOUABED, H., LEGRAND, J., Developing mass transfer for annular swirling decaying flow induced by means of a tangential inlet [*Inst. Univ. Technol., Genie Proc. Lab., St. Nazaire, France*]
- Vol. 52 No. 3 (1993) B59–B69
MODAK, J.M., Choice of control variable for optimization of fed-batch fermentation [*Indian Inst. Sci., Dept. Chem. Engr., Bangalore, Karnataka, India*]
- Vol. 52 No. 3 (1993) B71–B75
CASILLAS, J.L., MARTINEZ, M., ADDO-YOBO, F., ARACIL, J., Modelling of the adsorption of Cephalosporin C on modified resins in a stirred tank [*Univ. Complutense Madrid, Dept. Chem. Engr., Madrid, Spain; Univ. Bradford, Dept. Chem. Engr., Bradford, West-Yorkshire, England*]

- Vol. 53 No. 1 (1993) v
KRISHNA, R., HEIJNEN, J.J., Chemical engineering research in the Netherlands - preface [*Univ. Amsterdam, Dept. Chem. Engr., Amsterdam, Netherlands*]
- Vol. 53 No. 1 (1993) 1-11
SIE, S.T., Intraparticle diffusion and reaction kinetics as factors in catalyst particle design [*Delft Univ. Technol., Fac. Chem. Technol. & Mat. Sci., Delft, Netherlands*]
- Vol. 53 No. 1 (1993) 13-24
MOENE, R., MAKKEE, M., MOULIJN, J.A., Chemical vapour deposition as a novel technique for catalyst preparation: modelling of active phase profiles [*Delft Univ. Technol., Dept. Chem. Proc. Technol., Delft, Netherlands*]
- Vol. 53 No. 1 (1993) 25-37
HEESINK, A.B.M., PRINS, W., VAN SWAAU, W.P.M., A grain size distribution model for non-catalytic gas-solid reactions [*Twente Univ. Technol., Dept. Chem. Engr., Enschede, Netherlands*]
- Vol. 53 No. 1 (1993) 39-46
DE VRIES, J.E., VAN DER MEER, TH.H., HOOGENDOORN, C.J., OH concentration fluctuations in turbulent natural gas jet flames [*Delft Univ. Technol., Fac. Appl. Phys., Delft, Netherlands*]
- Vol. 53 No. 1 (1993) 47-54
LIE, A.B.K., HOEBINK, J., MARIN, G.B., The effects of oscillatory feeding of CO and O₂ on the performance of a monolithic catalytic converter of automobile exhaust gas: a modelling study [*Eindhoven Univ. Technol., Chem. Technol. Lab., Eindhoven, Netherlands*]
- Vol. 53 No. 1 (1993) 55-66
STOTER, F., OLUJIC, Z., DE GRAAUW, J., Modelling and measurement of gas flow distribution in corrugated sheet structured packings [*Delft Univ. Technol., Proc. Equipment Lab., Delft, Netherlands*]
- Vol. 53 No. 1 (1993) 67-73
CRAMERS, P.H.M.R., SMIT, L., LEUTERITZ, G.M., VAN DIERENDONCK, L.L., BEENACKERS, A.A.C.M., Hydrodynamics and local mass transfer characteristics of gas-liquid ejectors [*Univ. Groningen, Dept. Chem. Engr., Groningen, Netherlands; DSM Res. & Patents, Dept. Chem. Engr., Geleen, Netherlands; Buss AG, Basel, Switzerland*]
- Vol. 53 No. 1 (1993) 75-87
VAN DEN BLEEK, C.M., SCHOUTEN, J.C., Deterministic chaos: a new tool in fluidized bed design and operation [*Delft Univ. Technol., Fac. Chem. Technol. & Mat. Sci., Delft, Netherlands*]
- Vol. 53 No. 1 (1993) 89-101
KRISHNA, R., ELLENBERGER, J., HENNEPHOF, D.E., Analogous description of the hydrodynamics of gas-solid fluidized beds and bubble columns [*Univ. Amsterdam, Dept. Chem. Engr., Amsterdam, Netherlands*]
- Vol. 53 No. 1 (1993) B1-B11
VOS, H.J., LUYBEN, K.CH.A.M., WESTERTERP, K.R., Design strategy and process optimization for reactors with continuous transport of an immobilized enzyme [*Delft Univ. Technol., Dept. Biochem. Engr., Delft, Netherlands; Univ. Twente, Chem. React. Engr. Labs, Enschede, Netherlands*]
- Vol. 53 No. 1 (1993) B13-B24
VAN DER MEER, A.B., MIEDEMA, W.A., LUYBEN, K.CH.A.M., BEENACKERS, A.A.C.M., Modelling the inhibitory effect of 1,2-epoxyoctane on the growth kinetics of *Pseudomonas oleovorans* [*Univ. Groningen, Dept. Chem. Engr., Groningen, Netherlands; Delft Univ. Technol., Dept. Biochem. Engr., Delft, Netherlands*]
- Vol. 53 No. 2 (1993) 107-113
WANG, T.-T., HUANG, T.-C., Kinetics of the quaternizations of tertiary amines with benzyl chloride [*Natl. Cheng-Kung Univ., Dept. Chem. Engr., Tainan, Taiwan; Natl. Ctr. Univ., Dept. Chem. Engr., Chungli, Taiwan*]
- Vol. 53 No. 2 (1993) 115-123
HILLS, J.H., The behaviour of a bubble column at high throughputs. II. Radial voidage profiles [*Univ. Nottingham, Dept. Chem. Engr., Nottingham, England*]
- Vol. 53 No. 2 (1993) 125-135
MYDLARZ, J., JONES, A.G., On the estimation of size-dependent crystal growth rate functions in MSMR crystallizers [*Univ. London Univ. Coll., Dept. Chem. & Biochem. Engr., London, England; Eastman Kodak Co., Rochester, NY, USA*]
- Vol. 53 No. 2 (1993) 137-146
LE BOLAY, N., GUILLAND, J.-F., RICARD, A., Kinetics of the synthesis of poly-(18-dibenzo-6-crown) in an electrochemical reactor with a pulsed percolated porous-electrode (in French) [*Ecole Natl. Super. Ingn. Genie Chim., CNRS, Toulouse, France*]
- Vol. 53 No. 2 (1993) 147-150
ZHONG, G.M., GRENIER, PH., MEUNIER, F., Influence of transfers between adsorbent particles on gravimetric-determination of adsorption-kinetics (in French) [*CNRS, LIMSI, Orsay, France*]
- Vol. 53 No. 2 (1993) 151-153
ITYOKUMBUL, M.T., Effect of vertical misalignment of liquid dispersion in bubble columns [*Ahmadu Bello Univ., Dept. Chem. Engr., Zaria, Nigeria*]
- Vol. 53 No. 2 (1993) B25-B33
HODGES, G.E., LOWE, E.K., PATERSON, A.H.J., A mathematical model for lactose dissolution [*Massey Univ., Dept. Proc. & Environm. Technol., Palmerston North, New Zealand*]
- Vol. 53 No. 2 (1993) B35-B40
BEROVIC, M., KOLOINI, T., OLSVIK, E.S., KRISTIANSEN, B., Rheological and morphological properties of submerged citric acid fermentation broth in stirred-tank and bubble column reactors [*Natl. Inst. Chem., Ljubljana, Slovenia; Univ. Ljubljana, Dept. Chem. & Chem. Technol., Ljubljana, Slovenia; Univ. Strathclyde, Dept. Biosci. & Biotechnol., Glasgow, Lanark, Scotland*]
- Vol. 53 No. 3 (1994) xiii
WEBB, C., Editorial [*Univ. Manchester, Inst. Sci. & Technol., Manchester, Lancs, England*]
- Vol. 53 No. 3 (1994) 157-165
PETKOVSKA, M., MITROVIC, M., Microscopic modelling of electrothermal desorption [*Univ. Belgrade, Fac. Technol. & Met., Belgrade, Yugoslavia*]
- Vol. 53 No. 3 (1994) 167-172
ITYOKUMBUL, M.T., KOSARIC, N., BULANI, W., Gas hold-up and liquid mixing at low and intermediate gas velocities. I. Air-water system [*Univ. Western Ontario, Dept. Chem. & Biochem. Engr., London, ON, Canada*]
- Vol. 53 No. 3 (1994) 173-181
ÇALIK, G., OZDAMAR, T.H., Alkylation of naphthalene by propene with BF₃H₃PO₄ catalyst in a three-phase system [*Ankara Univ., Dept. Chem. Engr., Ankara, Turkey*]
- Vol. 53 No. 3 (1994) 183-191
LAI, C.-C., KU, Y., Mass transfer and kinetic behaviour of chelated cadmium solutions [*Natl. Taiwan Inst. Technol., Dept. Chem. Engr., Taipei, Taiwan*]

- Vol. 53 No. 3 (1994) 193–199
LEITAO, A., CARLOS, P., SANTOS, S., RODRIGUES, A., Tracer experiments in fixed beds: effects of flow maldistribution on the estimation of transport kinetic parameters [*Agostinho Neto Univ., Fac. Engn., Luanda, Angola*]
- Vol. 53 No. 3 (1994) B41–B46
GARCIA-OCHOA, F., CASAS, J.A., Apparent yield stress in xanthan gum solutions at low concentrations [*Univ. Complutense Madrid, Dept. Chem. Engn., Madrid, Spain*]
- Vol. 53 No. 3 (1994) B47–B55
LALLAI, A., MURA, G., Steady-state behaviour of an aerobic mixed culture growing on phenol in a continuous stirred reactor [*Univ. Cagliari, Dipt. Ingn. Chim., Cagliari, Italy*]
- Vol. 54 No. 1 (1994) 1–6
TYOKUMBUL, M.T., A non-parametric method for particle settling velocity determination in a slurry bubble column [*Canada Ctr. Mineral & Energy Technol., Western Res. Ctr., Devon, AB, Canada*]
- Vol. 54 No. 1 (1994) 7–16
HARIKRISHNAN, T.L., PRABHAVATHI, N.K., VARMA, Y.B.G., Liquid–liquid mass transfer in a reciprocating-plate column [*Indian Inst. Technol., Dept. Chem. Engn., Madras, Tamil Nadu, India*]
- Vol. 54 No. 1 (1994) 17–22
FERNÁNDEZ, A., RODRIGUES, A.E., DÍAZ, M., Modelling of K-Na exchange in fixed beds with highly concentrated feed [*Univ. Oviedo, Dept. Chem. Engn., Oviedo, Spain; Univ. Oporto, Dept. Chem. Engn., Oporto, Portugal*]
- Vol. 54 No. 1 (1994) 23–33
BOUROUIS, M., PRÉVOST, M., Experimental study on the hydrodynamics of an isothermal liquid film flowing along the corrugated wall of a tubular column (in French) [*Ecole Natl. Super. Ingn. Genie Chim., CNRS, Toulouse, France*]
- Vol. 54 No. 1 (1994) 35–40
GAYUBO, A.G., ARANDES, J.M., AGUAYO, A.T., OLAZAR, M., BILBAO, J., Calculation of the kinetics of catalyst regeneration by burning coke following a temperature ramp [*Univ. Pais Vasco, Dept. Chem. Engn., Bilbao, Spain*]
- Vol. 54 No. 1 (1994) 41–50
RODRIGUES, A.E., LU, Z.P., LOPES, J.C.B., DIAS, M.M., SILVA, A.M., The effect of intraparticle convection on conversion in heterogeneous isothermal fixed-bed reactors with large-pore catalysts for first-order reactions [*Univ. Oporto, Sch. Engn., Oporto, Portugal*]
- Vol. 54 No. 1 (1994) 51–55
ZARRAA, M.A., EL-ABD, M.Z., EL-TAWIL, Y.A., FARAG, H.A., SEDAHMED, G.H., Liquid–solid mass transfer in a batch-packed bubble column [*Univ. Alexandria, Fac. Engn., Alexandria, Egypt*]
- Vol. 54 No. 1 (1994) B1–B8
GU, Y.X., HU, Z.C., KORUS, R.A., Effects of adsorption on mass transfer in immobilization matrices [*Univ. Idaho, Dept. Chem. Engn., Moscow, ID, USA*]
- Vol. 54 No. 1 (1994) B9–B14
BORJA, R., SANCHEZ, E., WEILAND, P., TRAVIESO, L., MARTIN, A., Kinetics of anaerobic-digestion of cow manure with biomass immobilized on zeolite [*CSIC, Inst. Grasa, Seville, Spain; Natl. Ctr. Sci. Res., Havana, Cuba; FAL, Inst. Technol., Braunschweig, Germany; Fac. Ciencias, Dept. Ingn. Quim., Cordoba, Spain*]
- Vol. 54 No. 1 (1994) B15–B24
ROMERO, L.E., GÓMEZ, J.M., CARO, J., CANTERO, D., Kinetic model for growth of *Acetobacter aceti* in submerged culture [*Univ. Cadiz, Dept. Ingn. Quim., Cadiz, Spain*]
- Vol. 54 No. 2 (1994) 63–77
KONERIPALLI, N., TEKIE, Z., MORSE, B.I., CHIANG, M.-Y., Mass transfer characteristics of gases in methanol and ethanol under elevated pressures and temperatures [*Univ. Pittsburgh, Dept. Chem. & Petr. Engn., Pittsburgh, PA, USA; Noxso Corp., Library, PA, USA*]
- Vol. 54 No. 2 (1994) 79–85
PARIKH, P.A., SUBRAHIMANYAM, N., BHAT, Y.S., HALGERI, A.B., Kinetics of zeolite-catalyzed toluene isopropylation [*Maharaja Sayajirao Univ. Baroda, Fac. Technol. & Engn., Baroda, Gujarat, India; Indian Petrochem. Corp. Ltd., Res. Ctr., Baroda, Gujarat, India*]
- Vol. 54 No. 2 (1994) 87–93
UDRIOT, H., ARAQUE, A., STOCKAR, U.V., Azeotropic mixtures may be broken by membrane distillation [*Swiss Fed. Inst. Technol., Inst. Chem. Engn., Lausanne, Switzerland*]
- Vol. 54 No. 2 (1994) 95–106
ALBET, J., LE LANN, J.-M., JOULIA, X., KOEHRET, B., Developments and trends in batch-distillation simulation (in French) [*Ecole Natl. Super. Ingn. Genie Chim., CNRS, Toulouse, France*]
- Vol. 54 No. 2 (1994) B25–B32
BORJA, R., BANKS, C.J., Kinetics of an anaerobic fluidized bed system used for the purification of fruit processing waste-water [*Univ. Manchester, Inst. Sci. & Technol., Manchester, Lancs, England*]
- Vol. 54 No. 2 (1994) B33–B39
TOMIOKA, K., FUKUDA, H., KATOH, S., Characterization of antigen-coupled liposomes for homogenous immunoassay of polyclonal antibodies [*Kaneka Corp., Res. Inst., Takasago, Hyogo, Japan; Kyoto Univ., Dept. Synthet. Chem. & Biol. Chem., Kyoto, Japan*]
- Vol. 54 No. 2 (1994) B41–B48
BONIARDI, N., VAITA, G., ROTA, R., NANO, G., CARRA, S., Removal of water pollutants by *Lemma gibba* [*Politecn. Milan, Dipt. Chim. Fis. Appl., Milan, Italy*]
- Vol. 54 No. 3 (1994) ix
GLASSER, D., Chemical engineering research in South-Africa – preface [*Univ. Witwatersrand, Dept. Chem. Engn., Johannesburg, South Africa*]
- Vol. 54 No. 3 (1994) 115–123
MÖLLER, K.P., KOJIMA, M., O'CONNOR, C.T., Diffusion and adsorption of zeolite Y and mordenite deactivated by propene oligomerization and hexane cracking [*Univ. Cape Town, Dept. Chem. Engn., Rondebosch, South Africa*]
- Vol. 54 No. 3 (1994) 125–135
ALDRICH, C., VAN DEVENTER, J.S.J., The use of connectionist systems to reconcile inconsistent process data [*Univ. Stellenbosch, Dept. Met. Engn., Stellenbosch, South Africa*]
- Vol. 54 No. 3 (1994) 137–145
BRADSHAW, S., VILJOEN, H., WRIGHT, C., The stability of a compressible fluid with variable transport properties in a horizontal chemical vapour deposition reactor [*Univ. Stellenbosch, Dept. Chem. Engn., Stellenbosch, South Africa; Univ. Witwatersrand, Ctr. Nonlinear Studies, Witwatersrand,*

- South Africa; Univ. Witwatersrand, Dept. Computat. & Appl. Math., Witwatersrand, South Africa]
- Vol. 54 No. 3 (1994) 147–153
DE KLERK, A., Estimating the critical temperatures of inorganic substances [*Forens. Sci. Lab., Chem. Unit Precious Met. Anal., Pretoria, South Africa*]
- Vol. 54 No. 3 (1994) 155–166
DOHNAL, M., EXALL, D.I., CARSKY, M., MORRIS, R.M., DOHNALOVA, J., A revitalization of chemical engineering knowledge with fuzzy calculus [*Univ. Natal, Dept. Chem. Engn., Durban, South Africa; Appl. Informat. Technol., Troubsko, Czech Rep.; Univ. Durban-Westville, Dept. Chem. Engn., Durban, South Africa*]
- Vol. 54 No. 3 (1994) 167–173
GLÜCK, T., Mechanisms of nitriding electrolytic manganese metal [*Manganese Met. Co., Nelspruit, South Africa*]
- Vol. 54 No. 3 (1994) 175–186
GODORR, S.A., HILDEBRANDT, D., GLASSER, D., The attainable region for systems with mixing and multiple-rate processes: finding optimal reactor structures [*Univ. Witwatersrand, Dept. Chem. Engn., Witwatersrand, South Africa*]
- Vol. 54 No. 3 (1994) 187–197
HILDEBRANDT, D., GLASSER, D., Predicting phase and chemical equilibrium using the convex hull of the Gibbs free energy [*Univ. Witwatersrand, Dept. Chem. Engn., Witwatersrand, South Africa*]
- Vol. 54 No. 3 (1994) 199–205
ALDRICH, C., VAN DEVENTER, J.S.J., Observations on induced aeration in agitated slurries [*Univ. Stellenbosch, Dept. Met. Engn., Stellenbosch, South Africa*]
- Vol. 54 No. 3 (1994) 207–220
CRUNDWELL, F.K., Mathematical modelling of batch and continuous bacterial leaching [*Univ. Witwatersrand, Dept. Chem. Engn., Witwatersrand, South Africa*]
- Vol. 54 No. 3 (1994) 221–240
STARZAK, M., KRZYSZEK, L., NOWICKI, L., MICHALSKI, H., Macroapproach kinetics of ethanol fermentation by *Saccharomyces cerevisiae*: experimental studies and mathematical modelling [*Univ. Natal, Dept. Chem. Engn., Durban, South Africa; Tech. Univ. Lodz, Fac. Proc. & Environm. Engn., Lodz, Poland*]
- Vol. 55 No. 1-2 (1994) 1–14
DEL POZO, M., BRIENS, C.L., WILD, G., Effect of liquid coalescing properties on mass transfer, heat transfer and hydrodynamics in a three-phase fluidized bed [*Univ. Western Ontario, London, ON, Canada; Ecole Natl. Super. Ind. Chim., CNRS, Nancy, France*]
- Vol. 55 No. 1-2 (1994) 15–25
BOUROUS, M., PRÉVOST, M., Numerical study of fully developed flow arrangement in a wavy-walled pipe under laminar conditions (in French) [*Ecole Natl. Super. Ingn. Genie Chim., CNRS, Toulouse, France*]
- Vol. 55 No. 1-2 (1994) 27–37
OLAZAR, M., SAN JOSÉ, M.J., AGUAYO, A.T., ARANDES, J.M., BILBAO, J., Hydrodynamics of nearly flat base spouted beds [*Univ. Pais Vasco, Dept. Chem. Engn., Bilbao, Spain*]
- Vol. 55 No. 1-2 (1994) 39–44
ÖZBELGE, T.A., SOMER, T.G., A heat transfer correlation for liquid–solid flows in horizontal pipes [*Middle-East Tech. Univ., Dept. Chem. Engn., Ankara, Turkey*]
- Vol. 55 No. 1-2 (1994) 45–51
SHAMLOU, P.A., SYNOWIEC, P., ZOLFAGHARIAN, A., Critical suspension conditions in stirred crystallizers [*Univ. London Univ. Coll., Dept. Chem. & Biochem. Engn., London, England; Silesian Tech. Univ., Inst. Chem. Engn. & Apparatus Construct, Gliwice, Poland*]
- Vol. 55 No. 1-2 (1994) 53–59
ALPER, E., AL-ROWEIH, M., BOUHAMRA, W., Reaction kinetics of COS with primary and secondary amines in alcoholic solutions [*Kuwait Univ., Dept. Chem. Engn., Safat, Kuwait*]
- Vol. 55 No. 1-2 (1994) 61–68
SCHMIDL, H., WEIHS, C., Evaporation loss from solvent tanks [*Ciba Geigy AG, Math. Applicat., Basel, Switzerland*]
- Vol. 55 No. 1-2 (1994) 69–80
MYDLARZ, J., JONES, A.G., An assessment of MSMR crystallization kinetics data for systems modelled by size-dependent crystal growth rate functions [*Univ. London Univ. Coll., Dept. Chem. & Biochem. Engn., London, England*]
- Vol. 55 No. 1-2 (1994) 81–86
LEITAO, A., DIAS, M., RODRIGUES, A., Effectiveness of bidisperse catalysts with convective flow in the macropores [*Univ. Oporto, Sch. Engn., Oporto, Portugal; Agostinho Neto Univ., Fac. Engn., Luanda, Angola*]
- Vol. 55 No. 1-2 (1994) 87–92
WU, C.-H., CHANG, C.-Y., HOR, J.-L., SHIH, S.-M., CHEN, L.-W., Pyrolysis kinetics of waste PVC at high conversion [*Natl. Taiwan Univ., Grad. Inst. Environm. Engn., Taipei, Taiwan; Natl. Taiwan Univ., Dept. Chem. Engn., Taipei, Taiwan*]
- Vol. 55 No. 1-2 (1994) 93–96
KUMAZAWA, H., INOUE, T., SADA, E., Synthesis of fine spherical zirconia particles by controlled hydrolysis of zirconium alkoxide in the high temperature range above 50°C [*Kyoto Univ., Dept. Chem. Engn., Kyoto, Japan*]
- Vol. 55 No. 1-2 (1994) B1–B17
BHAWSAR, P.C.M., PANDIT, A.B., SAWANT, S.B., JOSHI, J.B., Enzyme mass transfer coefficient in a sieve plate extraction column [*Univ. Bombay, Dept. Chem. Technol., Bombay, Maharashtra, India*]
- Vol. 55 No. 1-2 (1994) B19–B27
BLOOMINGBURG, G.F., CARTA, G., Separation of protein mixtures by continuous annular chromatography with step elution [*Univ. Virginia, Dept. Chem. Engn., Charlottesville, VA, USA*]
- Vol. 55 No. 1-2 (1994) B29–B33
TAILLANDIER, P., CAZOTTES, M.L., STREHAIANO, P., Deacidification of grape musts by *Schizosaccharomyces* entrapped in alginate beads: a continuous fluidized-bed process [*Ecole Natl. Super. Ingn. Genie Chim., CNRS, Toulouse, France*]
- Vol. 55 No. 1-2 (1994) B35–B39
AXELSSON, A., SISAK, C., WESTRIN, B.A., SZAJÁNI, B., Diffusional characteristics of a swelling gel and its consequences for bioreactor performance [*Lund Univ., Dept. Chem. Engn. 1, Lund, Sweden; Hungarian Acad. Sci., Chem. Engn. Res. Inst., Veszprém, Hungary; Perstorp Ab, Perstorp, Sweden; Reanal Factory Lab. Chem., Budapest, Hungary*]
- Vol. 55 No. 1-2 (1994) B41–B45
VASUDEVAN, P.T., WEILAND, R.H., Studies on the morphology of immobilized catalase [*Clemson Univ., Dept. Chem. Engn., Clemson, SC, USA*]

- Vol. 55 No. 1-2 (1994) B47–B53
SOKÓL, W., Upper limits to the stability characteristics of a continuous stirred-tank bioreactor fed with an inhibitory substrate [*Univ. Dar-es-Salaam, Dept. Chem. & Proc. Engr., Dar-es-Salaam, Tanzania*]
- Vol. 55 No. 3 (1994) 103–114
MORI, S., TSUJI, M., TAKAHASHI, K., TANIMOTO, A., SAKAKIBARA, M., Coupling of laminar flow heat transfer in a vertical circular tube with external free convection [*Kanazawa Univ., Dept. Chem. & Chem. Engr., Kanazawa, Ishikawa, Japan; Fukui Univ., Dept. Appl. Chem. & Biotechnol., Fukui, Japan*]
- Vol. 55 No. 3 (1994) 115–124
VETTERE, A., An improved method for predicting the vapor-liquid equilibria of subcritical mixtures [*Snampromgetti Res. Labs, San Donato Milanese, Italy*]
- Vol. 55 No. 3 (1994) 125–134
GAYUBO, A.G., ARANDES, J.M., AGUAYO, A.T., OLAZAR, M., BILBAO, J., Contributions to the calculation of coke deactivation kinetics. A comparison of methods [*Univ. Pais Vasco, Dept. Chem. Engr., Bilbao, Spain*]
- Vol. 55 No. 3 (1994) 135–138
VIOLLAZ, P.E., SUAREZ, C., An exact solution of the diffusion equation with shrinking [*Fac. Ciencias Exactas & Nat. Buenos Aires, Dept. Ind., Buenos Aires, Argentina*]
- Vol. 55 No. 3 (1994) 139–141
BRANDANI, S., A vapor pressure correlation for polar substances based on four-parameter corresponding states [*Univ. L'Aquila, Dept. Chem. Engr., L'Aquila, Italy*]
- Vol. 55 No. 3 (1994) 143–144
KARAMANEV, D.G., CHAVARIE, C., Modelling of air-lift fluidized bed: optimization of mass transfer with respect to design and operational parameters – comment [*Ecole Polytech., Dept. Chem. Engr., Montreal, PQ, Canada*]
- Vol. 55 No. 3 (1994) 145–146
LELE, S.S., JOSHI, J.B., Modelling of air-lift fluidized bed: optimization of mass transfer with respect to design and operational parameters – reply [*Univ. Bombay, Dept. Chem. Technol., Bombay, Maharashtra, India*]
- Vol. 55 No. 3 (1994) B55–B66
ALATIQUI, I.M., DADKHAH, A.A., AKBAR, A.M., HAMOUDA, M.F., Comparison between dynamics and control performance of mesophilic and thermophilic anaerobic sludge digesters [*Kuwait Univ., Dept. Chem. Engr., Safat, Kuwait*]
- Vol. 55 No. 3 (1994) B67–B72
SAVE, S.S., PANDIT, A.B., JOSHI, J.B., Microbial cell disruption: role of cavitation [*Univ. Bombay, Dept. Chem. Technol., Bombay, Maharashtra, India*]
- Vol. 55 No. 3 (1994) B73–B75
JAYARAMAN, V.K., Solution of hollow fibre bioreactor design equations: the case of power-law fluids [*Natl. Chem. Lab., Div. Chem. Engr., Poona, Maharashtra, India*]
- Vol. 56 No. 1 (1994) Bv
WEBB, C., Preface [*Univ. Manchester, Inst. Sci. & Technol., Manchester, Lancs, England*]
- Vol. 56 No. 1 (1994) B1–B8
JOB, C., BLASS, E., Problems concerning liquid-liquid extraction of extracellular products directly from fermenter broths [*Sandoz Pharma AG, Pharma Engr., Basel, Switzerland; Techn. Univ. Munich, Lehrstuhl Verfahrenstechn. A, Munich, Germany*]
- Vol. 56 No. 1 (1994) B9–B14
TEIXEIRA, J.A., MOTA, M., VENANCIO, A., Model identification and diffusion coefficients determination of glucose and malic acid in calcium alginate membranes [*Univ. Minho, Dept. Engr. Biol., Braga, Portugal*]
- Vol. 56 No. 1 (1994) B15–B21
JU, L.-K., SUNDARARAJAN, A., The effects of cells on oxygen transfer in bioreactors: physical presence of cells as solid particles [*Univ. Akron, Dept. Chem. Engr., Akron, OH, USA*]
- Vol. 56 No. 1 (1994) B23–B35
ARCAND, Y., GUIOT, S.R., DESROCHERS, M., CHAVARIE, C., Impact of the reactor hydrodynamics and organic loading on the size and activity of anaerobic granules [*Natl. Res. Council Canada, Biotechnol. Res. Inst., Montreal, PQ, Canada; Univ. Montreal, Ecole Polytech., Montreal, PQ, Canada*]
- Vol. 56 No. 1 (1994) B37–B41
GREEN, M., SHELEF, G., BILANOVIC, D., The effect of various citrus waste fractions on xanthan fermentation [*Technion Israel Inst. Technol., Ctr. Environm. & Water Resources Engr., Haifa, Israel*]
- Vol. 56 No. 1 (1994) B43–B48
DEEPAK, D., GUPTA, R.K., BHATTACHARYA, S.D., COD reduction kinetics in a biological batch reactor: effect of impeller submergence and speed [*Univ. Roorkee, Dept. Chem. Engr., Roorkee, Uttar Pradesh, India*]
- Vol. 56 No. 1 (1994) B49–B52
BHARDWAJ, A., PRASAD, R., Process conditions to obtain high yield of 4-cyanopyridine from 4-picoline [*Devi Ahilya Univ., Dept. Chem., Indore, India*]
- Vol. 56 No. 1 (1994) B53–B59
HALUK, BEYENAL, TANYOLAÇ, A., A mathematical model for hollow fiber biofilm reactors [*Hacettepe Univ., Dept. Chem. Engr., Ankara, Turkey*]
- Vol. 56 No. 1 (1994) B61–B67
CANO, G.V., CABANES, A.L., A generalized analysis of internal diffusion of immobilized enzyme in multi-enzyme reactions [*Univ. Murcia, Dept. Chem. Engr., Murcia, Spain*]
- Vol. 56 No. 1 (1994) B69–B74
TSAO, J.H., WU, W.-T., Global control of a continuous stirred tank bioreactor [*Natl. Tsing-Hua Univ., Dept. Chem. Engr., Hsinchu, Taiwan*]
- Vol. 56 No. 1 (1994) B75–B77
LAKSHMI, PRASANNA, GOPAL, K.V., SIVAMANI, E., RENGANARAYANAN, S., KUNTHALA, UDHAYAKUMAR, MOHAN, V., JAYARAMAN, K., Construction of a low cost and simple electroporator for high transformation efficiencies in *Escherichia coli* strains [*Alagappa Coll. Technol., Dept. Chem. Engr., Madras, Tamil Nadu, India; Anna Univ., Ctr. Biotechnol., Madras, Tamil Nadu, India; Anna Univ., Coll. Engr., Madras, Tamil Nadu, India*]
- Vol. 56 No. 1 (1994) B79–B85
SPISAK, W., IDZIK, J., Gas hold-up in stalactite and slug flows with highly viscous liquids [*Alcor Ltd., Ctr. Res. & Dev., Opole, Poland*]
- Vol. 56 No. 1 (1994) B87–B90
TAMER, I.M., MUTLU, M., A new approach to modelling enzyme kinetics by a novel enzyme from *Onopordum turcicum* and powdered calf rennet [*Hacettepe Univ., Dept. Food Engr., Ankara, Turkey*]

- Vol. 56 No. 1 (1994) B91-B96
DEEPAK, D., ANAND, K.V., BHARGAVA, R., Biodegradation kinetics of metal cutting oil: evaluation of kinetic parameters [Univ. Roorkee, Dept. Chem. Engn., Roorkee, Uttar Pradesh, India; Univ. Roorkee, Dept. Civil Engn., Roorkee, Uttar Pradesh, India]
- Vol. 56 No. 2 (1995) 1-9
LEE, A.-C., CHOU, T.-C., The role of Ag(I)/Ag(II) mediators in the anodic oxidation of toluene [Nat. Cheng-Kung Univ., Dept. Chem. Engn., Tainan, Taiwan]
- Vol. 56 No. 2 (1995) 11-18
HAO, X.-R., WANG, J.-S., YANG, Z.-R., BAO, J., Novel catafractionation technology for the production of methyl tert-butyl ether [Sinopec, Qilu Petrochem. Corp., Shandong, P.R. China]
- Vol. 56 No. 2 (1995) 19-26
OLAZAR, M., SAN JOSÉ, M.J., PEÑAS, F.J., AGUAYO, A.T., ARANDES, J.M., BILBAO, J., A simplified model for gas flow in conical spouted beds [Univ. País Vasco, Dept. Chem. Engn., Bilbao, Spain]
- Vol. 56 No. 2 (1995) 27-32
BELKACEM, M., HADJIEV, D., AURELLE, Y., A model for calculating the steady state flux of organic ultrafiltration membranes for the case of cutting oil emulsions [Inst. Natl. Sci. Appl., Dept. Genie Proc., Toulouse, France; Univ. Sci. & Tech. Houari Boumediene, Inst. Chim. Ind., Algiers, Algeria]
- Vol. 56 No. 2 (1995) 33-37
DELPLACE, F., LEULIET, J.C., Generalized Reynolds number for the flow of power law fluids in cylindrical ducts of arbitrary cross-section [INRA, CRETTIA, Villeneuve Dascq, France]
- Vol. 56 No. 2 (1995) 39-50
LUHISAN, J., CVENGROS, J., Mean free path of molecules on molecular distillation [Slovak Tech. Univ., Fac. Chem. Technol., Bratislava, Slovakia]
- Vol. 56 No. 2 (1995) 51-58
SKOCZYLAŚ, A., URBANSKI, A., Residence time of liquid in a thin layer evaporator equipped with a spiral element [Wrocław Tech. Univ., Inst. Chem. Engn., Wrocław, Poland]
- Vol. 56 No. 2 (1995) 59-65
CHIU, K.H., HASHIM, M.A., Simulated countercurrent adsorption processes: a comparison of modelling strategies [Univ. Malaya, Inst. Adv. Studies, Kuala Lumpur, Malaysia]
- Vol. 56 No. 2 (1995) 67-72
DUIT, N.V.K., KUMAR, Y.V.L. RAVI, PRASAD, D.H.L., A simple generalization of low-pressure viscosity of gases and mixtures [Indian Inst. Chem. Technol., Div. Chem. Engn., Hyderabad, Andhra Pradesh, India]
- Vol. 56 No. 2 (1995) 73-76
VIRENDRA, U., RAJAH, A., PRASAD, D.H.L., Dependence of the second virial coefficient on temperature [Indian Inst. Chem. Technol., Div. Chem. Engn., Hyderabad, Andhra Pradesh, India]
- Vol. 56 No. 2 (1995) B101-B107
LI, G.-Q., YANG, S.-Z., CAI, Z.-L., CHEN, J.-Y., Mass transfer and gas-liquid circulation in an airlift bioreactor with viscous non-Newtonian fluids [Chinese Acad. Sci., Inst. Chem. Met., Beijing, P.R. China]
- Vol. 56 No. 2 (1995) B109-B113
SRIVASTAVA, R.C., Kinetics of fresh water hyacinth digestion in semi-continuous operation [Reg. Res. Lab., Jorhat, Assam, India]
- Vol. 56 No. 2 (1995) B115-B124
EL-ZEKY, M., ATTIA, Y.A., Effect of bacterial adaptation on kinetics and mechanisms of bioleaching ferrous sulfides [Suez Canal Univ., Coll. Petr. & Min. Engn., Suez, Egypt; Attia Appl. Sci. Inc., Taasi Lab., Columbus, OH, USA]
- Vol. 56 No. 3 (1995) vii
WILLIAMS, R.A., Process tomography - preface [Univ. Exeter, Camborne Sch. Mines, Redruth, Cornwall, England]
- Vol. 56 No. 3 (1995) 83-93
SIMONS, S.J.R., Imaging techniques for fluidized bed systems: a review [Univ. London Univ. Coll., Dept. Chem. & Biochem. Engn., London, England]
- Vol. 56 No. 3 (1995) 95-100
WANG, S.J., DYAKOWSKI, T., XIE, C.G., WILLIAMS, R.A., BECK, M.S., Real time capacitance imaging of bubble formation at the distributor of a fluidized bed [Univ. Manchester, Inst. Sci. & Technol., Manchester, Lancs, England; Univ. Exeter, Camborne Sch. Mines, Redruth, Cornwall, England]
- Vol. 56 No. 3 (1995) 101-107
MCKEE, S.L., WILLIAMS, R.A., BOXMAN, A., Development of solid-liquid mixing models using tomographic techniques [Univ. Manchester, Inst. Sci. & Technol., Manchester, Lancs, England; Univ. Exeter, Camborne Sch. Mines, Redruth, Cornwall, England; Dupont Co. Inc., Exptl. Stn., Wilmington, DE, USA]
- Vol. 56 No. 3 (1995) 109-117
PARKER, D.J., HAWKESWORTH, M.R., BEYNON, T.D., Process applications of emission tomography [Univ. Birmingham, Sch. Phys. & Space Res., Birmingham, West-Midlands, England]
- Vol. 56 No. 3 (1995) 119-125
BROADBENT, C.J., BRIDGWATER, J., PARKER, D.J., The effect of fill level on powder mixer performance using a positron camera [Univ. Birmingham, Sch. Chem. Engn., Birmingham, West-Midlands, England; Univ. Cambridge, Dept. Chem. Engn., Cambridge, England; Univ. Birmingham, Sch. Phys. & Space Res., Birmingham, West-Midlands, England]
- Vol. 56 No. 3 (1995) 127-133
XIE, C.G., REINECKE, N., BECK, M.S., MEWES, D., WILLIAMS, R.A., Electrical tomography techniques for process engineering applications [Univ. Manchester, Inst. Sci. & Technol., Manchester, Lancs, England; Univ. Hannover, Inst. Chem. Proc. Engn., Hannover, Germany; Univ. Exeter, Camborne Sch. Mines, Redruth, Cornwall, England]
- Vol. 56 No. 3 (1995) 135-141
WILLIAMS, R.A., ILYAS, O.M., DYAKOWSKI, T., DICKIN, F.J., GUTIERREZ, J.A., WANG, M., BECK, M.S., SHAH, C., RUSHTON, A., Air core imaging in cyclonic separators: implications for separator design and modelling [Univ. Exeter, Camborne Sch. Mines, Redruth, Cornwall, England; Univ. Manchester, Inst. Sci. & Technol., Manchester, Lancs, England; British Coal Corp., Tech. Serv. & Res. Execut., Burton upon Trent, Staffs, England; British Nucl. Fuels Plc, Preston, Lancs, England]
- Vol. 56 No. 3 (1995) 143-148
WILLIAMS, R.A., NISBET, A., DICKIN, F.J., TAYLOR, S.E., Microelectrical tomography of flowing colloidal dispersions and dynamic interfaces [Univ. Exeter, Camborne Sch. Mines, Redruth, Cornwall, England; Univ. Manchester, Inst. Sci. & Technol., Manchester, Lancs, England; BP Int Ltd., Ctr. Grp. Res. & Engn., Sunbury, Middx, England]

- Vol. 56 No. 3 (1995) 149–158
GLADDEN, L.F., Industrial applications of nuclear magnetic resonance [Univ. Cambridge, Dept. Chem. Engr., Cambridge, England]
- Vol. 56 No. 3 (1995) 159–165
DAILY, W., RAMIREZ, A., Environmental process tomography in the United States [Lawrence Livermore Natl. Lab., Livermore, CA, USA]
- Vol. 56 No. 3 (1995) 167–173
LUCAS, G.P., Modelling velocity profiles in inclined multiphase flow to provide *a priori* information for flow imaging [Univ. Huddersfield, Sch. Engr., Huddersfield, West-Yorkshire, England]
- Vol. 56 No. 3 (1995) 175–182
JOHANSEN, G.A., FRØYSTEIN, T., HIERTAKER, B.T., ISAKSEN, Ø., OLSEN, Ø., STRANDØS, S.K., SKOGLUND, T.O., ÅBRO, E., HAMMER, E.A., The development of a dual mode tomograph for three-component flow imaging [Univ. Bergen, Dept. Phys., Bergen, Norway; Christian Michelsen Res. As., Fantoft, Norway]
- Vol. 56 No. 3 (1995) 183–185
MARTIN, P.D., BEESLEY, M., MYERS, P.E., Ultrasound imaging in large gas and liquid processing vessels [AEA Technol., AERE, Harwell, Oxon, England]
- Vol. 56 No. 3 (1995) 187–192
THOMAS, P.D., DARTON, R.C., WHALLEY, P.B., Liquid foam structure analysis by visible light tomography [Univ. Oxford, Dept. Engr. Sci., Oxford, England]
- Vol. 57 No. 1 (1995) 1–7
POHORECKI, R., NOWOSIELSKI, J., Activity of the ionic bubbles during absorption with chemical reaction on column plates [Warsaw Univ. Technol., Dept. Chem. & Proc. Engr., Warsaw, Poland]
- Vol. 57 No. 1 (1995) 9–15
BONI, A., N'KOPMIN, A., FRANÇOIS, O., ANTONINI, G., Charcoal deashing by an oil agglomeration process: effect of various operating parameters [Univ. Abidjan, Dept. Phys., Abidjan, Cote d'Ivoire; Univ. Technol. Compiègne, Div. Genie Transferts & Energet., Compiègne, France]
- Vol. 57 No. 1 (1995) 17–25
FERNÁNDEZ, A., DÍAZ, M., RODRIGUES, A., Kinetic mechanisms in ion exchange processes [Univ. Oviedo, Dept. Chem. Engr., Oviedo, Spain; Univ. Oporto, Dept. Chem. Engr., Oporto, Portugal]
- Vol. 57 No. 1 (1995) 27–38
SHAIKH, A.A., JAMAL, A., ZAROOK, S.M., Boundary-value problems in reactive gas absorption [King Fahd Univ. Petr. & Minerals, Dept. Chem. Engr., Dhahran, Saudi Arabia]
- Vol. 57 No. 1 (1995) 39–52
AZZARO, C., COUDERC, J.P., Thermal modeling of tubular horizontal hot-wall low pressure chemical vapor deposition reactors [Ecole Natl. Super. Ingn. Genie Chim., CNRS, Toulouse, France]
- Vol. 57 No. 1 (1995) 53–60
UL-HAQ, E., WHITE, D.A., ADELEYE, S.A., Freezing in an ultrasonic bath as a method for the decontamination of aqueous effluents [Pakistan Atom Energy Commiss, Lahore, Pakistan; Univ. London Imperial Coll. Sci. Technol. & Med., Dept. Chem. Engr., London, England]
- Vol. 57 No. 1 (1995) 61–66
DELALI, H., EL KHATIR, M., MARCHAND, A., COUMIOUX, J.J., Mathematical treatment of kinetics governing the synthesis of *N,N*-dialkylhydrazines by the Raschig process [Univ. Lyon 1, Villeurbanne, France]
- Vol. 57 No. 1 (1995) 67–71
EVREN, V., ÖZDURAL, A.R., A new technique for the determination of mass transfer coefficients in packed columns for physical gas absorption systems [Hacettepe Univ., Dept. Chem. Engr., Ankara, Turkey]
- Vol. 57 No. 1 (1995) B1–B5
THALASSO, F., NAVEAU, H., NYNS, E.-J., Design and performance of a bioreactor equipped with a Venturi injector for high gas transfer rates [Univ. Catholique Louvain, Bioenrg. Unit, Louvain, Belgium]
- Vol. 57 No. 1 (1995) B7–B13
CHISTI, Y., WENGE, F., MOO-YOUNG, M., Relationship between riser and downcomer gas hold-up in internal-loop airlift reactors without gas-liquid separators [Univ. Waterloo, Dept. Chem. Engr., Waterloo, ON, Canada]
- Vol. 57 No. 1 (1995) B15–B21
RAMACHANDRAN, K.B., RATHORE, A.S., GUPTA, S.K., Modelling the effects of electrostatic interaction with reaction-generated pH change on the kinetics of immobilized enzymes [Indian Inst. Technol., Dept. Biochem. Engr. & Biotechnol., New Delhi, India; Indian Inst. Technol., Dept. Chem. Engr., New Delhi, India]
- Vol. 57 No. 1 (1995) B23–B29
ALFANI, F., CANTARELLA, M., GALLIFUOCO, A., ROMANO, V., On the effectiveness factor of immobilized enzymes with linear mixed-type product inhibition kinetics [Univ. L'Aquila, Dept. Chem. Engr., L'Aquila, Italy; Univ. Salerno, Dept. Food & Chem. Engr., Fisciano, Italy]
- Vol. 57 No. 2 (1995) vii–ix
KRISHNA, R., WESSELINGH, J.A., TAYLOR, R., Preface [Univ. Amsterdam, Dept. Chem. Engr., Amsterdam, Netherlands]
- Vol. 57 No. 2 (1995) 75–89
WESSELINGH, J.A., VONK, P., KRAAIJEVELD, G., Exploring the Maxwell–Stefan description of ion exchange [Univ. Groningen, Groningen, Netherlands]
- Vol. 57 No. 2 (1995) 91–99
ARNOST, D., SCHNEIDER, P., Dynamic transport of multicomponent mixtures of gases in porous solids [Acad. Sci. Czech Rep., Inst. Chem. Proc. Fundamentals, Prague, Czech Rep.]
- Vol. 57 No. 2 (1995) 101–114
NAN, H.S., DIAS, M.M., RODRIGUES, A.E., Effect of forced convection on reaction with mole changes in porous catalysts [Univ. Oporto, Sch. Engr., Oporto, Portugal]
- Vol. 57 No. 2 (1995) 115–125
VELDSINK, J.W., VAN DAMME, R.M.J., VERSTEEG, G.F., VAN SWAAU, W.P.M., The use of the dusty-gas model for the description of mass transport with chemical reaction in porous media [Univ. Twente, Dept. Chem. Engr., Enschede, Netherlands; Univ. Twente, Dept. Appl. Math., Enschede, Netherlands]
- Vol. 57 No. 2 (1995) 127–136
KUIJLAARS, K.J., KLEIJN, C.R., VAN DEN AKKER, H.E.A., Multi-component diffusion phenomena in multiple-wafer chemical vapour deposition reactors [Delft Univ. Technol., Kramers Lab. Phys. Technol., Delft, Netherlands]

- Vol. 57 No. 2 (1995) 137–144
SRINIVASAN, R., AUVIL, S.R., SCHORK, J.M., Mass transfer in carbon molecular sieves – an interpretation of Langmuir kinetics [*Air Prod. & Chem. Inc., Allentown, PA, USA*]
- Vol. 57 No. 2 (1995) 145–153
KAPTEJN, F., BAKKER, W.J.W., ZHENG, G.H., POPPE, J., MOULIJN, J.A., Permeation and separation of light hydrocarbons through a silicalite-1 membrane. Application of the generalized Maxwell–Stefan equations [*Delft Univ. Technol., Dept. Chem. Engn., Delft, Netherlands*]
- Vol. 57 No. 2 (1995) 155–162
KRISHNA, R., VAN DEN BROEKE, L.J.P., The Maxwell–Stefan description of mass transport across zeolite membranes [*Univ. Amsterdam, Dept. Chem. Engn., Amsterdam, Netherlands*]
- Vol. 57 No. 2 (1995) 163–176
KRAAIJEVELD, G., SUMBEROVA, V., KUINDERSMA, S., WESSELINGH, H., Modelling electro dialysis using the Maxwell–Stefan description [*Univ. Groningen, Dept. Chem. Engn., Groningen, Netherlands*]
- Vol. 57 No. 2 (1995) 177–188
KOOIJMAN, H.A., TAYLOR, R., Modelling mass transfer in multicomponent distillation [*Clarkson Univ., Dept. Chem. Engn., Potsdam, NY, USA*]
- Vol. 57 No. 2 (1995) 189–204
KENG, E.Y.A., Mass transfer–reaction coupling in two-phase multicomponent fluid systems [*Russian Acad. Sci., Inst. New Chem. Problems, Chernogolovka, Russia*]
- Vol. 57 No. 2 (1995) 205–217
VANNI, M., VALERIO, S., BALDI, G., The role of non-ideal phenomena in interfacial mass transfer with chemical reaction [*Politecn. Turin, Dipt. Sci. Mat. & Ingn. Chim., Turin, Italy*]
- Vol. 57 No. 2 (1995) 219–228
SUNDMACHER, K., HOFFMANN, U., Oscillatory vapor–liquid transport phenomena in a packed reactive distillation column for fuel ether production [*Techn. Univ. Clausthal, Inst. Chem. Verfahrenstechnik, Clausthal-Zellerfeld, Germany*]
- Vol. 57 No. 2 (1995) 229–236
ZIMMERMANN, A., JOULIA, X., GOURDON, C., GORAK, A., Maxwell–Stefan approach in extractor design [*Ecole Natl. Super. Ingn. Genie Chim., CNRS, Toulouse, France; Univ. Dortmund, Fachbereich Chem. Tech., Dortmund, Germany*]
- Vol. 57 No. 2 (1995) 237–246
RAO, D.P., KUMAR, R.S., PREM, PANDIT, P., DAS, T.C.T., Multicomponent tray efficiencies accounting for entrainment [*Indian Inst. Technol., Dept. Chem. Engn., Kanpur, Uttar Pradesh, India*]
- Vol. 57 No. 3 (1995) 247–251
XU, Y.H., DODDS, J., LECLERC, D., Optimization of a discontinuous microfiltration-backwash process [*Ecole Natl. Super. Ind. Chim., CNRS, Nancy, France*]
- Vol. 57 No. 3 (1995) 253–260
LEE, C.-J., YANG, B.-R., Extraction of trivalent europium via a supported liquid membrane containing PC-88A as a mobile carrier [*Natl. Tsing-Hua Univ., Dept. Chem. Engn., Hsinchu, Taiwan*]
- Vol. 57 No. 3 (1995) 261–271
BI, H.T., GRACE, J.R., Effect of measurement method on the velocities used to demarcate the onset of turbulent fluidization [*Univ. British Columbia, Dept. Chem. Engn., Vancouver, BC, Canada*]
- Vol. 57 No. 3 (1995) 273–283
VELDSINK, J.W., VERSTEEG, G.F., VAN SWAAIJ, W.P.M., Intrinsic kinetics of the oxidation of methane over an industrial copper(II) oxide catalyst on a γ -alumina support [*Univ. Twente, Dept. Chem. Engn., Enschede, Netherlands*]
- Vol. 57 No. 3 (1995) 285–294
SUN, W.U., COSTA, C.A.V., RODRIGUES, A.E., Determination of effective diffusivities and convective coefficients of pure gases in single pellets [*Univ. Oporto, Dept. Chem. Engn., Oporto, Portugal*]
- Vol. 57 No. 3 (1995) 295–298
SINGH, K.P., KAKATI, M.C., Comprehensive models for computation of the specific energy of coals [*Reg. Res. Lab., Div. Chem. Engn., Jorhat, Assam, India*]
- Vol. 57 No. 3 (1995) 299–301
CARMICHAEL, K.E., On the outlet boundary condition for solids leaving slurry-bubble columns – letter [*Union Carbide Corp., Cit. Tech., South-Charleston, WV, USA*]
- Vol. 57 No. 3 (1995) 303–304
IYOKUMBUL, M.T., On the outlet boundary condition for solids leaving slurry-bubble columns – reply [*Penn State Univ., Dept. Mineral Engn., University Park, PA, USA*]
- Vol. 57 No. 3 (1995) B31–B36
TAN, W.S., DAI, G.C., YE, W., SHEN, J.P., Local flow behavior of the liquid phase in an airlift bioreactor for potential use in animal cell suspension cultures [*East-China Univ. Sci. & Technol., Shanghai, P.R. China*]
- Vol. 57 No. 3 (1995) B37–B48
VATTA, G., ROTA, R., BONIARDI, N., NANO, G., Dynamic modelling of waste-water treatment plants based on *Lemma gibba* [*Politecn. Milan, Dipt. Chim. Fis. Appl., Milan, Italy*]
- Vol. 58 No. 1 (1995) 1–5
LAYEILLON, L., DOLLET, A., DESPAX, B., Plasma enhanced deposition of A-Si-H: comparison of two reactor arrangements [*Ecole Natl. Super. Ingn. Genie Chim., CNRS, Toulouse, France; Univ. Toulouse 3, Genie Elect. Lab., Toulouse, France*]
- Vol. 58 No. 1 (1995) 7–13
RODRIGUEZ, J.C., PEÑA, J.A., MONZÓN, A., HUGHES, R., LI, K., Kinetic modelling of the deactivation of a commercial silica-alumina catalyst during isopropylbenzene cracking [*Univ. Zaragoza, Fac. Ciencias, Zaragoza, Spain; Univ. Salford, Chem. Engn. Unit, Salford, Lancs, England*]
- Vol. 58 No. 1 (1995) 15–20
BOURNE, J.R., GHOLAP, R.V., REWATKAR, V.B., The influence of viscosity on the product distribution of fast parallel reactions [*Swiss Fed. Inst. Technol., Tech. Chem. Lab., Zurich, Switzerland*]
- Vol. 58 No. 1 (1995) 21–32
GIONA, M., GIUSTINIANI, M., VIOLA, A., Two-step adsorption models in molecular sieves [*Univ. Cagliari, Dipt. Ingn. Chim., Cagliari, Italy; Univ. Roma La Sapienza, Dept. Chem. Engn., Rome, Italy*]
- Vol. 58 No. 1 (1995) 33–44
ARANDES, J., DE LASA, H., Pseudoadiabatic operation for fixed-bed catalytic reactors: methods for finding the limits of the regime [*Univ. Pais Vasco, Dept. Chem. Engn., Bilbao, Spain; Univ. Western Ontario, Fac. Engn. Sci., London, ON, Canada*]
- Vol. 58 No. 1 (1995) 45–51
HADJIEV, D., AURELLE, Y., Phase inversion: a method for separation of fine liquid–liquid dispersions [*Inst. Univ. Technol.,*

- Dept. Genie Chim., Caen, France; Inst. Natl. Sci. Appl., Dept. Genie Proc., Toulouse, France]*
- Vol. 58 No. 1 (1995) 53–57
MALDONADO HODÁR, F.J., RIVERA UTRILLA, J., MASTRAL, A.M., IZQUIERDO, M.T., Influence of the porous nature of coals on Mo-catalyzed hydrogenation kinetics [Univ. Granada, Fac. Ciencias, Granada, Spain; CSIC, Inst. Carboquim, Zaragoza, Spain]
- Vol. 58 No. 1 (1995) 59–63
HEIM, A., KRASLAWSKI, A., RZYSKI, E., STELMACH, J., Aeration of bioreactors by self-aspirating impellers [Tech. Univ. Lodz, Dept. Chem. Equipment, Lodz, Poland; Lappeenranta Univ. Technol., Dept. Chem. Technol., Lappeenranta, Finland]
- Vol. 58 No. 1 (1995) 65–70
DENKBAS, E.B., HOFFMAN, A.S., PISKIN, E., Silicone-based microcarriers: preparation and BHK cell culture [Hacettepe Univ., Dept. Chem. Engn., Ankara, Turkey; Hacettepe Univ., Div. Bioengn, Ankara, Turkey; Univ. Washington, Ctr. Bioengn., Seattle, WA, USA]
- Vol. 58 No. 1 (1995) 71–79
STREVIETT, K.A., VIETH, R.F., GRASSO, D., Chemo-autotrophic biogas purification for methane enrichment: mechanism and kinetics [Univ. Connecticut, Dept. Civil & Environm. Engn., Storrs, CT, USA; Univ. Connecticut, Dept. Chem. Engn., Storrs, CT, USA; Univ. Connecticut, Ctr. Biotechnol., Storrs, CT, USA; Univ. Connecticut, Environm. Engn. Program, Storrs, CT, USA]
- Vol. 58 No. 2 (1995) vii
POHORECKI, R., Chemical engineering research in Poland – preface [Warsaw Univ. Technol., Dept. Chem. & Proc. Engn., Warsaw, Poland]
- Vol. 58 No. 2 (1995) 83–99
BURGHARDT, A., BARTELMUS, G., JAROSZYNSKI, M., KOŁODZIEJ, A., Hydrodynamics and mass transfer in a three-phase fixed-bed reactor with cocurrent gas–liquid downflow [Polish Acad. Sci., Inst. Chem. Engn., Gliwice, Poland]
- Vol. 58 No. 2 (1995) 101–108
SKRZYPEK, J., LACHOWSKA, M., GRZESIK, M., SŁOCZYNSKI, J., NOWAK, P., Thermodynamics and kinetics of low pressure methanol synthesis [Polish Acad. Sci., Inst. Chem. Engn., Gliwice, Poland]
- Vol. 58 No. 2 (1995) 109–121
PODGÓRSKI, A., GRADON, L., GRZYBOWSKI, P., Theoretical study on deposition of flexible and stiff fibrous aerosol particles on a cylindrical collector [Warsaw Univ. Technol., Dept. Chem. & Proc. Engn., Warsaw, Poland]
- Vol. 58 No. 2 (1995) 123–133
ZBICINSKI, I., Development and experimental verification of momentum, heat and mass transfer model in spray drying [Tech. Univ. Lodz, Fac. Proc. & Environm. Engn., Lodz, Poland]
- Vol. 58 No. 2 (1995) 135–143
KARCZ, I., STREK, F., Heat transfer in jacketed agitated vessels equipped with non-standard baffles [Tech. Univ. Szczecin, Szczecin, Poland]
- Vol. 58 No. 2 (1995) 145–150
RUDNIAK, L., WRONSKI, S., Laminar flow hydrodynamics of rotary dynamics filters [Warsaw Univ. Technol., Dept. Chem. & Proc. Engn., Warsaw, Poland]
- Vol. 58 No. 2 (1995) 151–160
WARMUZINSKI, K., BUZEK, J., PODKANSKI, J., Marangoni instability during absorption accompanied by chemical reaction [Polish Acad. Sci., Inst. Chem. Engn., Gliwice, Poland]
- Vol. 58 No. 2 (1995) 161–173
BALDYGA, J., HENCZKA, M., Closure problem for parallel chemical reactions [Warsaw Univ. Technol., Dept. Chem. & Proc. Engn., Warsaw, Poland]
- Vol. 58 No. 2 (1995) 175–182
KOLTUNIEWICZ, A.B., NOWORYTA, A., Method of yield evaluation for pressure-driven membrane processes [Wroclaw Tech. Univ., Inst. Chem. Engn., Wroclaw, Poland]
- Vol. 58 No. 2 (1995) 183–195
BALDYGA, J., POHORECKI, R., Turbulent micromixing in chemical reactors – a review [Warsaw Univ. Technol., Dept. Chem. & Proc. Engn., Warsaw, Poland]
- Vol. 58 No. 2 (1995) 197–204
STRUMILLO, C., KAMINSKI, W., ZBICINSKI, I., Some aspects of the drying of protein products [Tech. Univ. Lodz, Fac. Proc. & Environm. Engn., Lodz, Poland]
- Vol. 58 No. 3 (1995) 209–214
CHIANESE, A., KAREL, M., MAZZAROTTA, B., Nucleation kinetics of pentaerythritol [Univ. Roma La Sapienza, Dept. Chem. Engn., Rome, Italy; Acad. Sci. Czech Rep., Inst. Inorg. Chem., Prague, Czech Rep.]
- Vol. 58 No. 3 (1995) 215–221
CHIANESE, A., KAREL, M., MAZZAROTTA, B., Crystal growth kinetics of pentaerythritol [Univ. Roma La Sapienza, Dept. Chem. Engn., Rome, Italy; Acad. Sci. Czech Rep., Inst. Inorg. Chem., Prague, Czech Rep.]
- Vol. 58 No. 3 (1995) 223–237
CAUSSAT, B., HÉMATI, M., COUDERC, J.P., Modeling of gas–solid fluidized-bed reactors – reconsideration of gas-flow variation due to chemical reactions (in French) [Ecole Natl. Super. Ingn. Genie Chim., CNRS, Toulouse, France]
- Vol. 58 No. 3 (1995) 239–244
LEITAO, A., RODRIGUES, A., The simulation of solid–liquid adsorption in activated carbon columns using estimates of intraparticle kinetic parameters obtained from continuous stirred tank reactor experiments [Agostinho Neto Univ., Fac. Engn., Luanda, Angola; Univ. Oporto, Sch. Engn., Oporto, Portugal]
- Vol. 58 No. 3 (1995) 245–250
VAN ZEE, G., VIENSTRA, R., DE GRAAUW, J., Axial dispersion in packed fiber beds [Delft Univ. Technol., Proc. Equipment Lab., Delft, Netherlands]
- Vol. 58 No. 3 (1995) 251–258
LASO, M., DE BRITO, M.H., BOMIO, P., STOCKAR, U.V., Liquid-side mass transfer characteristics of a structured packing [Swiss Fed. Inst. Technol., Dept. Chem. Engn., Lausanne, Switzerland; Swiss Fed. Inst. Technol., Tech. Chem. Lab., Zurich, Switzerland; Sulzer Chemtech, Winterthur, Switzerland; , Sao Paulo, Brazil]
- Vol. 58 No. 3 (1995) 259–264
LIANG, W.G., YU, Z.Q., JIN, Y., WANG, Z.W., WU, Q.W., The phase holdups in a gas–liquid–solid circulating fluidized bed [Tsing Hua Univ., Dept. Chem. Engn., Beijing, P.R. China]
- Vol. 58 No. 3 (1995) 265–273
SAG, Y., KUTSAL, T., Copper(II) and nickel(II) adsorption by *Rhizopus arrhizus* in batch stirred reactors in series [Hacettepe Univ., Dept. Chem. Engn., Ankara, Turkey]
- Vol. 58 No. 3 (1995) 275–283
HASSAN, M.M., ATIQULLAH, M., BEG, S.A., CHOWDHURY, H.M., Analysis of non-isothermal tubular reactor packed with immobilized enzyme systems [King Fahd Univ. Petr. &

- Minerals, Dept. Chem. Engn., Dhahran, Saudi Arabia; King Fahd Univ. Petr. & Minerals, Res. Inst., Dhahran, Saudi Arabia]*
- Vol. 58 No. 3 (1995) 285–290
WANG, S.S., LEE, C.J., Kinetics of penicillin G extraction by Amberlite LA-2 as a mobile carrier in a constant-interface-area cell [*Natl. Tsing-Hua Univ., Dept. Chem. Engn., Hsinchu, Taiwan*]
- Vol. 59 No. 1 (1995) v
DAVIES, G.A., Special issue containing papers dedicated to Prof. Ted Woodburn on the occasion of his retirement – preface [*Univ. Manchester, Inst. Sci. & Technol., Manchester, Lancs, England*]
- Vol. 59 No. 1 (1995) 1–6
O'CONNOR, C.T., MILLS, P.J.T., CILLIERS, J.J., Prediction of large-scale column flotation cell performance using pilot plant data [*Univ. Cape Town, Dept. Chem. Engn., Rondebosch, South Africa*]
- Vol. 59 No. 1 (1995) 7–13
HULBERT, D.G., Optimization of counter-current flotation circuits [*Mintek, Randburg, South Africa*]
- Vol. 59 No. 1 (1995) 15–21
LOVEDAY, B.K., BROUCKAERT, C.J., An analysis of flotation circuit design principles [*Univ. Natal, Dept. Chem. Engn., Durban, South Africa*]
- Vol. 59 No. 1 (1995) 23–31
AUSTIN, L.G., The graphical representation of ash liberation in milled coal [*Penn State Univ., Dept. Mineral Engn., University Park, PA, USA*]
- Vol. 59 No. 1 (1995) 33–38
MOYS, M.H., ENGELBRECHT, J.A., Simulation of the behaviour of flexible baffles in flotation columns [*Univ. Witwatersrand, Dept. Chem. Engn., Johannesburg, South Africa; Multotec Cyclones, Kempton Pk, South Africa*]
- Vol. 59 No. 1 (1995) 39–50
MANN, R., PILLAI, S.K., EL-HAMOUZ, A.M., YING, P., TOGATOROP, A., EDWARDS, R.B., Computational fluid mixing for stirred vessels: progress from seeing to believing [*Univ. Manchester, Inst. Sci. & Technol., Manchester, Lancs, England; Unilever Res., Port Sunlight Lab., Wirral, Bebington Mersey, England*]
- Vol. 59 No. 1 (1995) 51–70
JOBSON, M., HILDEBRANDT, D., GLASSER, D., Attainable products for the vapour–liquid separation of homogeneous ternary mixtures [*Univ. Witwatersrand, Sch. Proc. & Mat. Engn., Johannesburg, South Africa*]
- Vol. 59 No. 1 (1995) 71–85
WILLIAMS, R.A., Tomographic imaging for modelling and control of mineral processes [*Univ. Exeter, Camborne Sch. Mines, Redruth, Cornwall, England*]
- Vol. 59 No. 2 (1995) 91–100
KANTAK, M.V., HESKETH, R.P., KELKAR, B.G., Effect of gas and liquid properties on gas phase dispersion in bubble columns [*Univ. Tulsa, Dept. Chem. Engn., Tulsa, OK, USA; Univ. Tulsa, Dept. Petr. Engn., Tulsa, OK, USA*]
- Vol. 59 No. 2 (1995) 101–109
AN, W.F., LI, J.Y., CHENG, W.W., GAO, J.D., Estimation of heat of vaporization for pure compounds with a residual function method [*Zhengzhou Inst. Technol., Dept. Chem. Engn., Zhengzhou, P.R. China*]
- Vol. 59 No. 2 (1995) 111–119
HELMREICH, A., VORWERK, J., STEGER, R., MÜLLER, M., BRUNN, P.O., Non-viscous effects in the flow of xanthan gum solutions through a packed bed of spheres [*Kraft Gen Foods Inc., Munich, Germany; Ulrich Brunner GmbH, Eggenfelden, Germany; Vorwerk & Co. Elektowerk, Wuppertal, Germany; Lehrstuhl Strömungsmech., Erlangen, Germany*]
- Vol. 59 No. 2 (1995) 121–126
DUÉE, I., BERLAN, J., CASAMATTA, G., DELMAS, H., WILHELM, A.M., RATOARINO, R., VUIGLIO, L., New process for the synthesis of the 2-propyl pentane nitrile under ultrasonic irradiation [*Ecole Mines Albi, Albi, France; Ecole Natl. Super. Ingn. Genie Chim., CNRS, Toulouse, France; Sanofi, Mourenx, France*]
- Vol. 59 No. 2 (1995) 127–132
LIU, Z.-Y., CHEN, Z.-C., Estimation of critical pressures of pure substances from data of density and vaporization heat of liquids [*Hebei Inst. Technol., Dept. Chem. Engn., Tianjin, P.R. China*]
- Vol. 59 No. 2 (1995) 133–141
REDDY, S., FARELL, A., STANFORD, T., Evaluation and implementation of control strategies for moving-bed coal gasifiers using MGAS [*Univ. South-Carolina, Dept. Chem. Engn., Columbia, SC, USA*]
- Vol. 59 No. 2 (1995) 143–152
FÉVOTTE, G., KLEIN, J.P., Crystallization calorimetry for the assessment of batch seeding and cooling policies [*Univ. Lyon 1, Automat. & Genie Proceses Lab., Villeurbanne, France*]
- Vol. 59 No. 2 (1995) 153–159
ROSÉN, C., TRÄGÅRDH, C., Prediction of turbulent high Schmidt number mass transfer using a low Reynolds number $\kappa\epsilon$ turbulence model [*Lund Univ., Div. Food Engn., Lund, Sweden*]
- Vol. 59 No. 2 (1995) 161–167
YIN, Q.X., LI, S.F., Approximate analytical solutions of effectiveness factors for parallel catalytic reactions [*Tianjin Univ., Dept. Chem. Engn., Tianjin, P.R. China*]
- Vol. 59 No. 2 (1995) 169–175
RAY, A.K., Performance improvement of a chemical reactor by non-linear natural oscillations [*Univ. Groningen, Tech. Scheikunde Lab., Groningen, Netherlands*]
- Vol. 59 No. 2 (1995) 177–180
JAYARAMAN, V.K., Shape normalization of biporous pellets [*Natl. Chem. Lab., Div. Chem. Engn., Poona, Maharashtra, India*]
- Vol. 59 No. 2 (1995) 181–186
SASTRI, S.R.S., RAO, K.K., A simple method to predict surface tension of organic liquids [*Reg. Res. Lab., Bhubaneswar, Orissa, India*]
- Vol. 59 No. 2 (1995) 187–193
KAMEN, A.A., GARNIER, A., ANDRÉ, G., ARCHAMBAULT, J., CHIAVARIE, C., Determination of mass transfer parameters in surface aerated bioreactors with bubble entrainment [*Natl. Res. Council Canada, Biotechnol. Res. Inst., Montreal, PQ, Canada; Ecole Polytech., Dept. Chem. Engn., Montreal, PQ, Canada*]
- Vol. 59 No. 2 (1995) 195–204
GRASSO, D., STREVETT, K., FISHER, R., Uncoupling mass transfer limitations of gaseous substrates in microbial systems [*Univ. Connecticut, Dept. Civil & Environm. Engn., Storrs, CT, USA; Univ. Connecticut, Environm. Engn. Program, Storrs, CT, USA; Univ. Connecticut, Dept. Chem. Engn., Storrs, CT, USA*]

- Vol. 59 No. 3 (1995) 205–220
DE KOCK, F.P., VAN DEVENTER, J.S.J., Stochastic model for equilibrium adsorption onto activated carbon [Univ. Stellenbosch, Dept. Chem. Engn., Stellenbosch, South Africa]
- Vol. 59 No. 3 (1995) 221–228
MOURAD, M., HEMATI, M., LAGUÉRIE, C., Drying of corn in a flotation fluidized bed. I: Experimental study on the kinetics of drying (in French) [Ecole Natl. Super. Ingn. Genie Chim., CNRS, Toulouse, France]
- Vol. 59 No. 3 (1995) 229–241
GARCIA, V., CABASSUD, M., LE LANN, M.V., PIBOULEAU, L., CASAMATTA, G., Constrained optimization for fine chemical productions in batch reactors [Ecole Natl. Super. Ingn. Genie Chim., CNRS, Toulouse, France]
- Vol. 59 No. 3 (1995) 243–252
HOGENDOORN, J.A., VAN SWAAIJ, W.P.M., VERSTEEG, G.F., The absorption of carbon monoxide in COSORB solutions: absorption rate and capacity [Twente Univ. Technol., Dept. Chem. Engn., Enschede, Netherlands]
- Vol. 59 No. 3 (1995) 253–257
PLAZL, I., LESKOVSEK, S., KOLOINI, T., Hydrolysis of sucrose by conventional and microwave heating in stirred tank reactor [Univ. Ljubljana, Dept. Chem. & Chem. Technol., Ljubljana, Slovenia]
- Vol. 59 No. 3 (1995) 259–263
CVENGROS, J., BADIN, V., POLLÁK, S., Residence time distribution in a wiped liquid film [Slovak Tech. Univ., Fac. Chem. Technol., Bratislava, Slovakia]
- Vol. 59 No. 3 (1995) 265–271
JOSHI, P., NIGAM, K.D.P., NAUMAN, E.B., The Kenics static mixer: new data and proposed correlations [Indian Inst. Technol., Dept. Chem. Engn., New Delhi, India; Rensselaer Polytech. Inst., Isermann Dept. Chem. Engn., Troy, NY, USA]
- Vol. 59 No. 3 (1995) 273–275
JIRICKOVÁ, E., RIEGER, F., Mixing of suspensions in tall vessels with a draught tube [Czech Tech. Univ., Dept. Chem. & Food Proc. Equipment Design, Prague, Czech Rep.]
- Vol. 59 No. 3 (1995) 277–280
CHIANDRA, K., GOKUL, KALE, D.D., Pressure drop for two-phase air–non-newtonian liquid flow in static mixers [Univ. Bombay, Dept. Chem. Technol., Bombay, Maharashtra, India]
- Vol. 59 No. 3 (1995) 281–285
AGUTA, R.M., OLSEN, K.E., BØE, A., SAASEN, A., AAS, B., Experimental investigation of liquid accumulation effects during orifice gas metering of two-phase flow [Rogaland Univ. Ctr., Stavanger, Norway; RF Rogaland Res., Stavanger, Norway]
- Vol. 59 No. 3 (1995) 287–291
DUFOUR, J., LÓPEZ, L., FORMOSO, A., NEGRO, C., LATORRE, R., LÓPEZ-MATEOS, F., Mathematical model of goethite synthesis by oxyprecipitation of steel pickling liquors [CSIC, Natl. Ctr. Met. Res., Madrid, Spain; Univ. Complutense Madrid, Dept. Chem. Engn., Madrid, Spain]
- Vol. 59 No. 3 (1995) 293–296
BOURNE, J.R., GHOLAP, R.V., An approximate method for predicting the product distribution of fast reactions in stirred-tank reactors [Swiss Fed. Inst. Technol., Tech. Chem. Lab., Zurich, Switzerland]
- Vol. 59 No. 3 (1995) 297–301
NISHIKI, T., MUTO, A., KATAOKA, T., KATO, D., Back extraction of proteins from reversed micellar to aqueous phase: partitioning behaviour and enrichment [Univ. Osaka Prefecture, Dept. Chem. Engn., Sakai, Osaka, Japan; Osaka Prefectural Tech. Coll., Dept. Ind. Chem., Neyagawa, Osaka, Japan]
- Vol. 59 No. 3 (1995) 303–308
CHANG, Q.-L., CHEN, J.-Y., Separation and purification of two enzymes from *Bacillus subtilis* using Aliquat 336 reversed micelles: study of the effect of cosolvent concentration [Chinese Acad. Sci., Inst. Chem. Met., Beijing, P.R. China]
- Vol. 59 No. 3 (1995) 309–314
DERVAKOS, G.A., WEBB, C., Effect of product inhibition patterns on the effectiveness factor of immobilized cell aggregates [Univ. Manchester, Inst. Sci. & Technol., Manchester, Lancs, England]
- Vol. 59 No. 3 (1995) 315–319
FUJII, M., MORI, J., HOMMA, T., TANIGUCHI, M., Synergy between an endoglucanase and cellobiohydrolases from *Trichoderma koningii* [Niigata Coll. Technol., Niigata, Japan; Niigata Univ., Dept. Chem. Engn., Niigata, Japan]
- Vol. 60 No. 1-3 (1995) 1–29
MÜHLBAUER, A.L., RAAL, J.D., Computation and thermodynamic interpretation of high-pressure vapour–liquid equilibrium – a review [Univ. Natal, Dept. Chem. Engn., Natal, South Africa]
- Vol. 60 No. 1-3 (1995) 31–37
HOLDICH, R.G., ZHANG, G.M., Internal fouling of microporous cross-flow filtration membranes with dilute latex suspensions [Loughborough Univ. Technol., Dept. Chem. Engn., Loughborough, Leics, England]
- Vol. 60 No. 1-3 (1995) 39–47
MOURAD, M., HEMATI, M., LAGUÉRIE, C., Drying of corn in a fluidized flotation bed. II: Modeling of the drying kinetics (in French) [Ecole Natl. Super. Ingn. Genie Chim., CNRS, Toulouse, France]
- Vol. 60 No. 1-3 (1995) 49–54
N'KPOMIN, A., BONI, A., ANTONINI, G., FRANÇOIS, O., The deashed charcoal–oil–water mixture: a liquid fuel for biomass energetical valorization [Univ. Natl. Cote Ivoire, Dept. Phys., Abidjan, Cote Ivoire; Univ. Technol. Compiegne, Div. Genie Transferts & Energet., Compiegne, France]
- Vol. 60 No. 1-3 (1995) 55–62
WANG, W., JIA, X.D., DAVIES, G.A., A theoretical study of transient cross-flow filtration using force balance analysis [Univ. Manchester, Inst. Sci. & Technol., Manchester, Lancs, England]
- Vol. 60 No. 1-3 (1995) 63–73
CHITRA, K.R., GAIKWAD, A.G., SURENDER, G.D., DAMODARAN, A.D., Studies on kinetics of forward and backward extraction of neodymium by using phosphonic acid monoester as an acidic extractant [CSIR, Reg. Res. Lab., Trivandrum, Kerala, India]
- Vol. 60 No. 1-3 (1995) 75–79
SABERI, SH., SABERI, B., SHAKOURZADEHI, K., GUIGON, P., Comparative study of tuyere designs for fluidized beds [Univ. Technol. Compiegne, Compiegne, France]
- Vol. 60 No. 1-3 (1995) 81–87
LEITAO, A., RODRIGUES, A., Adsorptive processes using "large-pore" materials: analysis of a criterion for equivalence of diffusion-convection "apparent" diffusion and "extended" linear driving force models [Agostinho Neto Univ., Fac. Engn., Luanda, Angola; Univ. Oporto, Sch. Engn., Oporto, Portugal]
- Vol. 60 No. 1-3 (1995) 89–95
SCIAZKO, M., BANDROWSKI, J., High-pressure segregation of solids with a wide particle size distribution when fluidized with a

- gas [Polish Acad.Sci., Inst. Chem. Engn., Gliwice, Poland; Inst. Chem. Proc. Coal, Zabrze, Poland]
- Vol. 60 No. 1-3 (1995) 97-100
GOVINDARAJAN, M., SABARATHINAM, PL., Salt effect parameter from tie line correlation constants [Annamalai Univ., Dept. Technol., Annamalaiagar, Annamalaiagar 6, India]
- Vol. 60 No. 1-3 (1995) 101-104
BURKE, M., HOQ, M., FAZLUL, ERNST, W.R., Rate of reaction of chlorine dioxide and hydrogen peroxide [Georgia Inst. Technol., Sch. Chem. Engn., Atlanta, GA, USA]
- Vol. 60 No. 1-3 (1995) 105-110
WANG, J.F., Flow reactor models for fluid-fluid systems, based on the two-film theory [Tsing Hua Univ., Dept. Chem. Engn., Beijing, P.R. China]
- Vol. 60 No. 1-3 (1995) 111-116
LEIFAO, A., RODRIGUES, A., Catalytic processes using "large-pore" materials: effects of the flow rate and operating temperature on the conversion in a plug-flow reactor for irreversible first-order reactions [Agostinho Neto Univ., Fac. Engn., Luanda, Angola; Univ. Oporto, Sch. Engn., Oporto, Portugal]
- Vol. 60 No. 1-3 (1995) 117-121
RODRIGUEZ, M., GALAN, M., Viscosity of triglyceride and alcohol solutions: application of the Krone, Doolittle and Macedo-Litovitz equations [Univ. Cadiz, Dept. Chem. Engn., Cadiz, Spain]
- Vol. 60 No. 1-3 (1995) 123-129
LAMMERS, J.N.J.J., HARINGA, J., LITTEL, R.J., Effect of polyhydroxyalcohols on COS absorption in aqueous methyl-diethanolamine [Koninklijke Shell Expt. Prod. Lab., Amsterdam, Netherlands; Univ. Twente, Dept. Chem. Engn., Enschede, Netherlands]
- Vol. 60 No. 1-3 (1995) 131-139
RESHETNIKOV, S.I., BALZHINIMAEV, B.S., GAEVOI, V.P., IVANOV, A.A., Mathematical modeling of a fluidized bed reactor taking into account unsteady state of the catalyst [Inst. Catalysts, Novosibirsk, Russia]
- Vol. 60 No. 1-3 (1995) 141-146
DUFFY, B.R., MOFFATT, H.K., Flow of a viscous trickle on a slowly varying incline [Univ. Strathclyde, Dept. Math., Glasgow, Lanark, Scotland; Univ. Cambridge, Dept. Appl. Math. & Theoret. Phys., Cambridge, England]
- Vol. 60 No. 1-3 (1995) 147-154
SANTOS, A., GARCÍA-ÓCHOA, F., Direct test of adsorption enthalpy in 1-butene isomerization over a silica-alumina catalyst [Univ. Complutense Madrid, Dept. Chem. Engn., Madrid, Spain]
- Vol. 60 No. 1-3 (1995) 155-160
PIRONTI, F.F., MEDINA, V.R., CALVO, R., SÁEZ, A.E., Effect of draft tube position on the hydrodynamics of a draft tube slurry bubble column [Univ. Simon Bolívar, Dept. Termodinam. & Fenomenos Transferencia, Caracas, Venezuela]
- Vol. 60 No. 1-3 (1995) 161-167
SOONG, Y., GAMWO, I.K., BLACKWELL, A.G., SCHEHL, R.R., ZAROCHAK, M.F., Measurements of solids concentration in a three-phase reactor by an ultrasonic technique [US DOE, Fed. Energy Technol. Ctr., Pittsburgh, PA, USA]
- Vol. 60 No. 1-3 (1995) 169-172
SINGH, K.P., Effect of miscibility-to-extraction temperature ratio on selectivity, refining power and overall processing solvent index in solvent extraction [Reg. Res. Lab., Div. Chem. Engn., Jorhat, Assam, India]
- Vol. 60 No. 1-3 (1995) 181-188
SAG, Y., KUTSAL, T., Biosorption of heavy metals by *Zoogloea ramigera*: use of adsorption isotherms and a comparison of biosorption characteristics [Hacettepe Univ., Dept. Chem. Engn., Ankara, Turkey]
- Vol. 60 No. 1-3 (1995) 189-198
MARIANO, G.-R., RICHARD, A., CLAUDE, B.J., SERGIO, R., A mathematical model for solid state fermentation of mycelial fungi on inert support [Univ. Autonoma Metropolitana Iztapalapa, Dept. Biotecnol., Mexico City, Mexico; Univ. Autonoma Metropolitana Iztapalapa, Dept. Ingn. Proc. & Hidraul., Mexico City, Mexico; ORSTOM, Inst. Francais Rech. Sci. Dev. Cooperat., Paris, France; Univ. Montpellier 2, Lab. Genie Civil, Montpellier, France]
- Vol. 60 No. 1-3 (1995) 199-204
SANGSURASAK, P., MITCHELL, D.A., The investigation of transient multidimensional heat transfer in solid state fermentation [Univ. Queensland, Dept. Chem. Engn., St. Lucia, QLD, Australia]
- Vol. 61 No. 1 (1996) 1-6
TAIWO, O., KREBS, V., Robust control system design for plants with recycle [Univ. Karlsruhe, Inst. Regelung & Steuerungssyst., Karlsruhe, Germany]
- Vol. 61 No. 1 (1996) 7-12
KHAN, S.H., RAHMAN, K., Inversion of sucrose solution by ion exchange: evaluation of reaction rate and diffusivity [Bangladesh Univ. Engr. & Technol., Dept. Chem. Engr., Dhaka, Bangladesh]
- Vol. 61 No. 1 (1996) 13-20
SCOTT, K., HUI, W., Production of ethene oxide in a sieve plate electrochemical reactor. Part II: Mathematical reactor model and factors affecting the relative concentrations of ethene and bromine [Univ. Newcastle upon Tyne, Dept. Chem. & Proc. Engr., Newcastle upon Tyne, Tyne & Wear, England; British Gas Plc, Loughborough, Leics, England]
- Vol. 61 No. 1 (1996) 21-26
DUNNEBEIL, S., SADOWSKI, G., ARLT, W., Comparison of two predictive g^E models for vapour-liquid equilibrium calculations [Techn. Univ. Berlin, Dept. Chem. Engr., Berlin, Germany]
- Vol. 61 No. 1 (1996) 27-33
OHTA, T., On the application of G^E models to high-pressure vapour-liquid equilibrium calculations [Kanazawa Univ., Dept. Chem. & Chem. Engr., Kanazawa, Ishikawa, Japan]
- Vol. 61 No. 1 (1996) 35-40
I, Y.-P., WU, W.-T., LIU, Y.-C., Neural network modelling for on-line state estimation in fed-batch culture of L-lysine production [Natl. Tsing-Hua Univ., Dept. Chem. Engr., Hsinchu, Taiwan]
- Vol. 61 No. 1 (1996) 41-52
MIDDELBERG, A.P.J., The influence of protein refolding strategy on cost for competing reactions [Univ. Adelaide, Dept. Chem. Engr., Adelaide, SA, Australia]
- Vol. 61 No. 1 (1996) 53-61
HOEKS, F.W.J.M.M., MÜHLE, J., BÖHLEN, L., PSENICKA, I., Process integration aspects for the production of fine chemicals illustrated with the biotransformation of γ -butyrobetaine into L-carnitine [Lonza AG, Visp, Switzerland; Lonza Biotec SRO, Kourim, Czech Rep.]

- Vol. 61 No. 2 (1996) 63-71
CHEN, Z., ARCE, P., LOCKE, B.R., Convective-diffusive transport with a wall reaction in Couette flows [*Florida A&M Univ., Florida State Univ., Tallahassee, FL, USA*]
- Vol. 61 No. 2 (1996) 73-82
CHEHBOUNI, A., CHAOUKI, J., GUY, C., KLVANA, D., Description and modeling of global and local structures of turbulent fluidized beds (in French) [*Ecole Polytech., Dept. Chem. Engn., Montreal, PQ, Canada*]
- Vol. 61 No. 2 (1996) 83-93
ROMAN, R.V., TUDOSE, R.Z., Studies on transfer processes in mixing vessels: hydrodynamic of the modified Rushton turbine agitators in gas-liquid dispersions [*Chem. Pharmaceut. Res. Inst., Res. Ctr. Antibiot. Iasi, Romania; Techn. Univ. G.H. Asachi, Fac. Ind. Chem., Iasi, Romania*]
- Vol. 61 No. 2 (1996) 95-105
KOURI, R.J., SOHLO, J., Liquid and gas flow patterns in random packings [*Univ. Oulu, Dept. Proc. Engn., Oulu, Finland*]
- Vol. 61 No. 2 (1996) 107-112
MASIUK, S., Heat transfer measurements in a liquid vessel that is mixed using a vibratory agitator [*Tech. Univ. Szczecin, Dept. Chem. Engn., Szczecin, Poland*]
- Vol. 61 No. 2 (1996) 113-122
NAN, H.S., DIAS, M.M., LOPES, J.C.B., RODRIGUES, A.E., Diffusion, convection and reaction in catalyst particles: analogy between slab and cylinder geometries [*Univ. Oporto, Sch. Engn., Oporto, Portugal*]
- Vol. 61 No. 2 (1996) 123-132
DE LA VEGA, M., RENDUELES, LOUREIRO, J.M., RODRIGUES, A.E., Equivalence between Nernst-Planck and "corrected" Fick's law in modeling fixed-bed ion exchange processes [*Univ. Oporto, Sch. Engn., Oporto, Portugal*]
- Vol. 61 No. 2 (1996) 133-138
GURGEL, J.M., KLÜPPEL, R.P., Thermal conductivity of hydrated silica-gel [*UFPPB, Lab. Energia Solar, Pessoa Paraiba, Brazil*]
- Vol. 61 No. 2 (1996) 139-148
TARTAKOVSKY, B., DAINSON, B.E., LEWIN, D.R., SHEINTUCH, M., Observer-based non-linear control of a fed-batch autoinductive fermentation process [*Technion Israel Inst. Technol., Dept. Chem. Engn., Haifa, Israel*]
- Vol. 61 No. 2 (1996) 149-156
GANDHI, N.N., VUJAYALAKSHMI, V., SAWANT, S.B., JOSHI, J.B., Immobilization of *Mucor miehei* lipase on ion exchange resins [*Univ. Bombay, Dept. Chem. Technol., Bombay, Maharashtra, India*]
- Vol. 61 No. 2 (1996) 157-159
TEKIC, M.N., KURJACKI, J., VATAI, GY., Modelling of batch ultrafiltration [*Univ. Novi Sad, Fac. Technol., Novi Sad, Yugoslavia*]
- Vol. 61 No. 3 (1996) 161-170
DABRAL, M.M., ROY, S., BHASKARWAR, A.N., General kinetic invariant model of dissolution of large polydisperse particles [*Indian Inst. Technol., Dept. Chem. Engn., New Delhi, India*]
- Vol. 61 No. 3 (1996) 171-178
HWANG, S.-J., CHANG, D.-J., CHEN, C.-H., Steady state permeate flux for particle cross-flow filtration [*Natl. Tsing-Hua Univ., Dept. Chem. Engn., Hsinchu, Taiwan*]
- Vol. 61 No. 3 (1996) 179-190
EGE, P., GRISLINGÁS, A., DE LASA, H.L., Modelling turbulent fluidized bed reactors: tracer and fibre optic probe studies [*Norwegian Inst. Technol., Chem. Engn. Lab., Trondheim, Norway; Univ. Western Ontario, Fac. Engn. Sci., London, ON, Canada*]
- Vol. 61 No. 3 (1996) 191-201
RODRIGUES, A.E., CHENOU, C., DE LA VEGA, M.R., Protein separation by liquid chromatography using permeable POROS Q/M particles [*Univ. Oporto, Sch. Engn., Oporto, Portugal*]
- Vol. 61 No. 3 (1996) 203-211
ALLEN, R.W.K., VAN SANTEN, A., Designing for pressure drop in Venturi scrubbers: the importance of dry pressure drop [*Univ. Sheffield, Dept. Mech. & Proc. Engn., Sheffield, South-Yorkshire, England; ETSU, Harwell Lab., Harwell, Oxon, England*]
- Vol. 61 No. 3 (1996) 213-225
PAN, H.-Q., GUO, T.-M., A modified Kurihara mixing rule and a comparison of density-independent mixing rules [*Univ. Petr., High Pressure Fluid Phase Behav. & Property Res. Labs, Beijing, P.R. China*]
- Vol. 61 No. 3 (1996) 227-231
GÓMEZ, A., MOLERO, LÓPEZ, C., PEREYRA, DE LA OSSA, E., MARTINEZ, Recovery of grape seed oil by liquid and supercritical carbon dioxide extraction: a comparison with conventional solvent extraction [*Univ. Cadiz, Dept. Chem. Engn., Cadiz, Spain*]
- Vol. 61 No. 3 (1996) 233-240
GUÉNETTE, M., DUVNIAK, Z., Wood blocks as a carrier for *Saccharomyces Cerevisiae* used in the production of ethanol and fructose [*Ilogen Corp., Ottawa, ON, Canada; Univ. Ottawa, Dept. Chem. Engn., Ottawa, ON, Canada*]
- Vol. 61 No. 3 (1996) 241-246
WEBB, C., KANG, H.-K., MOFFAT, G., WILLIAMS, R.A., ESTÉVEZ, A.-M., CUÉLLAR, J., JARAIZ, E., GALÁN, M.-A., The magnetically stabilized fluidized bed bioreactor: a tool for improved mass transfer in immobilized enzyme systems? [*Univ. Manchester, Inst. Sci. & Technol., Manchester, Lancs, England; Univ. Salamanca, Dept. Chem. Engn., Salamanca, Spain*]
- Vol. 61 No. 3 (1996) 247-253
ISMAIL, A.-M.S., SOBIEH, U.I., ABDEL-FATTAH, A.F., Biosynthesis of cyclodextrin glucosyltransferase and β -cyclodextrin by *Bacillus macerans* 314 and properties of the crude enzyme [*Natl. Res. Ctr., Dept. Chem. Nat. & Microb. Prod., Cairo, Egypt*]
- Vol. 62 No. 1 (1996) 1-12
KING, R.P., Random geometrical models for porous media and other two-phase materials [*Univ. Utah, Commun. Ctr., Salt Lake City, UT, USA*]
- Vol. 62 No. 1 (1996) 13-21
LÉDÉ, J., MERCADIER, J., VILLERMAUX, J., The cyclone, a reactor for sublimation: sublimation of isocyanuric acid [*Ecole Natl. Super. Ind. Chim., CNRS, Nancy, France*]
- Vol. 62 No. 1 (1996) 23-34
SHAMLLOU, P.A., GIERCZYCKI, A.T., TITCHENER-HOOKER, N.J., Breakage of flocs in liquid suspensions agitated by vibrating and rotating mixers [*Univ. London Univ. Coll., Dept. Chem. & Biochem. Engn., London, England; Silesian Tech. Univ., Inst. Chem. Engn. & Apparatus Construct., Gliwice, Poland*]

- Vol. 62 No. 1 (1996) 35-42
KAWASE, Y., HASHIGUCHI, N., Gas-liquid mass transfer in external-loop airlift columns with newtonian and non-newtonian fluids [*Toyo Univ., Dept. Appl. Chem., Kawagoe, Saitama, Japan*]
- Vol. 62 No. 1 (1996) 43-50
CHEN, L.-J., CHEN, L.-C., WAN, C.-C., LIEN, C.-S., Convective mass transfer effect on short-time liquid phase epitaxial growth [*Natl. Tsing-Hua Univ., Dept. Chem. Engn., Hsinchu, Taiwan; Natl. Tsing-Hua Univ., Dept. Elect. Engn., Hsinchu, Taiwan*]
- Vol. 62 No. 1 (1996) 51-60
LAWAL, A., Convective diffusion of power-law fluids inside ducts with single homogeneous and catalytic wall reactions [*King Fahd Univ. Petr. & Minerals, Dept. Chem. Engn., Dhahran, Saudi Arabia*]
- Vol. 62 No. 1 (1996) 61-65
SEDAHIMED, G.H., EL-KAYAR, A.M., FARAG, H.A., NOSEIR, S.A., Liquid-solid mass transfer in packed beds of Raschig rings with upward two-phase (gas-liquid) flow [*Univ. Alexandria, Fac. Engn., Alexandria, Egypt*]
- Vol. 62 No. 1 (1996) 67-72
SOKÓL, W., MIGIRO, C.L.C., Controlling a continuous stirred-tank bioreactor degrading phenol in the stability range [*Univ. Dar-es-Salaam, Dept. Chem. & Proc. Engn., Dar-es-Salaam, Tanzania*]
- Vol. 62 No. 1 (1996) 73-79
KOKUBO, K.-I., TAGUCHI, M., SAKAI, K., Changes in charge and ion permeability of PAN-DX dialysis membrane caused by protein adsorption [*Waseda Univ., Dept. Chem. Engn., Tokyo, Japan*]
- Vol. 62 No. 1 (1996) 81-88
KHOSHIMANESH, A., LAWSON, F., PRINCE, I.G., Cadmium uptake by unicellular green microalgae [*Monash Univ., Dept. Chem. Engn., Clayton, VIC, Australia*]
- Vol. 62 No. 2 (1996) 89-95
SKOCZYLAS, A., URBANSKI, A., The influence of a spiral element on the longitudinal dispersion of liquid in thin layer evaporator [*Wroclaw Tech. Univ., Inst. Chem. Engn., Wroclaw, Poland*]
- Vol. 62 No. 2 (1996) 97-102
TREMBLAY-GOUTAUDIER, C., REY, S., COHEN-ADA, M.T., Preparation of alkylhydrazine by phase transfer (in French) [*Univ. Lyon 1, Lab. Phys. Chim. Minerale, Villeurbanne, France*]
- Vol. 62 No. 2 (1996) 103-111
MA, L., JIANG, C., ADESINA, A.A., TRIMM, D.L., WAINWRIGHT, M.S., Simulation studies of autothermal reactor system for H₂ production from methanol steam reforming [*Univ. New South-Wales, Sch. Chem. Engn. & Ind. Chem., Sydney, NSW, Australia*]
- Vol. 62 No. 2 (1996) 113-120
SAN JOSÉ, M.J., OLAZAR, M., AGUADO, R., BILBAO, J., Influence of the conical section geometry on the hydrodynamics of shallow spouted beds [*Univ. Pais Vasco, Dept. Chem. Engn., Bilbao, Spain*]
- Vol. 62 No. 2 (1996) 121-141
JOSHI, J.B., ELIAS, C.B., PATOLE, M.S., Role of hydrodynamic shear in the cultivation of animal, plant and microbial cells [*Univ. Bombay, Dept. Chem. Technol., Bombay, Maharashtra, India; Natl. Fac. Animal Tissue & Cell Culture, Dept. Biotechnol., Poona, Maharashtra, India*]
- Vol. 62 No. 2 (1996) 143-148
BAIERI, H.R., HILL, G.A., ROELSNER, W.J., Optimum design for production of tryptophan synthetase subunit from recombinant *Escherichia coli* in a two-stage continuous flow stirred tank reactor (growth and production stage) [*Univ. Saskatchewan, Dept. Chem. Engn., Saskatoon, SK, Canada; Univ. Saskatchewan, Dept. Biochem., Saskatoon, SK, Canada*]
- Vol. 62 No. 2 (1996) 149-154
TANYOLAC, A., BEYENAL, H., Effectiveness factor for a hollow-fiber biofilm reactor at maximum substrate consumption [*Hacettepe Univ., Dept. Chem. Engn., Ankara, Turkey*]
- Vol. 62 No. 3 (1996) v
WEBB, C., Editor's note [*Univ. Manchester, Inst. Sci. & Technol., Manchester, Lancs, England*]
- Vol. 62 No. 3 (1996) 155-167
CONVERTI, A., DEL BORGHI, M., FERRAILOLO, G., SOMMARIVA, C., Mechanical mixing and biological deactivation: the role of shear stress application time [*Univ. Genoa, Fac. Ingn., Genoa, Italy; Univ. Genoa, Inst. Sci. & Technol. Chem. Engn., Genoa, Italy*]
- Vol. 62 No. 3 (1996) 169-174
TOMIOKA, K., OKADA, W., FUKUDA, H., KATOH, S., Peptide-coupled liposomes for homogeneous immunoassay of polyclonal antibodies against proteins [*Kaneka Corp., Res. Inst., Takasago, Hyogo, Japan; Kobe Univ., Dept. Sci. & Chem. Engn., Kobe, Hyogo, Japan; Kyoto Univ., Dept. Synthet. Chem. & Biol. Chem., Kyoto, Japan*]
- Vol. 62 No. 3 (1996) 175-181
MHELWARD, H.R., BELLHOUSE, B.J., SOBEY, I.J., The vortex wave membrane bioreactor: hydrodynamics and mass transfer [*Univ. Oxford, Dept. Engn. Sci., Oxford, England*]
- Vol. 62 No. 3 (1996) 183-191
MACÍAS, M., CARO, I., CANTERO, D., Optimum operating conditions in closed-system industrial acetifiers (batch operation): a study by computer simulation [*Univ. Cadiz, Dept. Chem. Engn., Cadiz, Spain*]
- Vol. 62 No. 3 (1996) 193-206
CAULET, P.J.C., VAN DER LANS, R.G.J.M., LUYBEN, K.CH.A.M., Hydrodynamical interactions between particles and liquid flows in biochemical applications [*Delft Univ. Technol., Dept. Biochem. Engn., Delft, Netherlands*]
- Vol. 62 No. 3 (1996) 207-214
ZIU, Y.-H., RAJALAHTI, T., LINKO, S., Application of neural networks to lysine production [*Helsinki Univ. Technol., Dept. Chem. Engn., Espoo, Finland*]
- Vol. 62 No. 3 (1996) 215-222
KRZYSZEK, L., GLUSZCZ, P., LEDAKOWICZ, S., Determination of yield and maintenance coefficients in citric acid production by *Aspergillus niger* [*Tech. Univ. Lodz, Dept. Bioproc. Engn., Lodz, Poland*]
- Vol. 62 No. 3 (1996) 223-229
CHOI, K.H., CHISTI, Y., MOO-YOUNG, M., Comparative evaluation of hydrodynamic and gas-liquid mass transfer characteristics in bubble column and airlift slurry reactors [*Univ. Waterloo, Dept. Chem. Engn., Waterloo, ON, Canada*]
- Vol. 62 No. 3 (1996) 231-236
JIANG, R.-S., LIN, Y.-S., Distribution equilibrium of penicillin G between water and organic solutions of Amberlite LA-2 [*Yuan-Ze Inst. Technol., Dept. Chem. Engn., Tayan, Taiwan*]

- Vol. 62 No. 3 (1996) 237–240
SAMB, F.M., DERONT, M., ADLER, N., PÉRINGER, P., Dynamic liquid holdup and oxygen mass transfer in a cocurrent upflow bioreactor with small packing at low Reynolds numbers [*Ecole Polytech. Fed. Lausanne, Lab. Genie Biol., Lausanne, Switzerland*]
- Vol. 63 No. 1 (1996) v
DARTON, R., WEBB, C., A new look – editorial [*Univ. Oxford, Dept. Engr. Sci., Oxford, England; Univ. Manchester, Inst. Sci. & Technol., Manchester, Lancs, England*]
- Vol. 63 No. 1 (1996) 1–9
SEGUIN, D., MONTILLET, A., BRUNJAIL, D., COMITI, J., Liquid–solid mass transfer in packed beds of variously shaped particles at low Reynolds numbers: experiments and model [*Inst. Univ. Technol., Genie Proc. Lab., St. Nazaire, France*]
- Vol. 63 No. 1 (1996) 11–17
FAN, J.R., ZHAO, H., JIN, J., Two-phase velocity measurements in particle-laden coaxial jets [*Zhejiang Univ., Dept. Energy Engr., Hangzhou, P.R. China*]
- Vol. 63 No. 1 (1996) 19–25
SALAÜN, P., HOUZELOT, J.-L., VILLERMAUX, J., MARCHAL, S., Sequential method for the determination of operating conditions for optimizing end-use properties of a terpolymer [*Ecole Natl. Super. Ind. Chim., CNRS, Nancy, France; Rhone Poulenc Ind., Cir. Rech. Ingn. & Technol., Decines Charpieu, France*]
- Vol. 63 No. 1 (1996) 27–36
HUANG, T.-C., KANG, B.-C., Hydrogenation of naphthalene with platinum-aluminium borate catalysts [*Natl. Cheng-Kung Univ., Dept. Chem. Engr., Tainan, Taiwan*]
- Vol. 63 No. 1 (1996) 37–43
RODRÍGUEZ, F., REVENGA, J., TIJERO, J., Study of anthraquinone reaction with sodium sulfide [*Univ. Complutense Madrid, Dept. Chem. Engr., Madrid, Spain*]
- Vol. 63 No. 1 (1996) 45–51
GAYUBO, A.G., BENITO, P.L., AGUAYO, A.T., AGUIRRE, I., BILBAO, J., Analysis of kinetic models of the methanol-to-gasoline (MTG) process in an integral reactor [*Univ. Pais Vasco, Dept. Chem. Engr., Bilbao, Spain*]
- Vol. 63 No. 1 (1996) 53–58
VASCONCELOS, J.M.T., BARATA, J.M., ALVES, S.S., Transitional mixing in multiple-turbine agitated tanks [*Inst. Super Tecn, Dept. Chem. Engr., Lisbon, Portugal*]
- Vol. 63 No. 1 (1996) 59–64
BUHDMA, A., PAL, R., Flow measurement of two-phase oil-in-water emulsions using wedge meters and segmental orifice meters [*Univ. Waterloo, Dept. Chem. Engr., Waterloo, ON, Canada*]
- Vol. 63 No. 2 (1996) 65–77
DIRION, J.-L., CABASSUD, M., LE LANN, M.V., CASAMATTA, G., Development of adaptive neural networks for flexible control of batch processes [*Ecole Natl. Super. Ingn. Genie Chim., CNRS, Toulouse, France*]
- Vol. 63 No. 2 (1996) 79–83
JAMSHIDI, E., EBRAHIM, H. ALE, A new solution technique of moving boundary problems for gas–solid reactions: application to half-order volume reaction model [*Ami Kabir Univ., Dept. Chem. Engr., Tehran, Iran*]
- Vol. 63 No. 2 (1996) 85–91
BISCANS, B., GUIRAUD, P., LAGUÉRIE, C., MASSARELLI, A., MAZZAROTTA, B., Abrasion and breakage phenomena in mechanically stirred crystallizers [*Ecole Natl. Super. Ingn. Genie Chim., CNRS, Toulouse, France; Univ. Roma La Sapienza, Dept. Chem. Engr., Rome, Italy*]
- Vol. 63 No. 2 (1996) 93–103
BEG, S.A., HASSAN, M.M., NAOVI, M.S.M., Hydrodynamics and mass transfer in a cocurrent packed column: a theoretical study [*King Fahd Univ. Petr. & Minerals, Dept. Chem. Engr., Dhahran, Saudi Arabia*]
- Vol. 63 No. 2 (1996) 105–115
BACHE, D.H., RASOOL, E., Measurement of the rate of energy dissipation around an oscillating grid by an energy balance approach [*Univ. Strathclyde, Dept. Civil Engr., Glasgow, Lanark, Scotland*]
- Vol. 63 No. 2 (1996) 117–126
MICKAILY-HUBER, E.S., BERTRAND, F., TANGUY, P., MEYER, T., RENKEN, A., RYS, F.S., WEHRLI, M., Numerical simulations of mixing in an SMRX static mixer [*Ecole Polytech., Dept. Chem. Engr., Montreal, PQ, Canada; Swiss Fed. Inst. Technol., Inst. Chem. Engr., Lausanne, Switzerland; Swiss Fed. Inst. Technol., Tech. Chem. Lab., Zurich, Switzerland; Rheotek Inc., Montreal, PQ, Canada*]
- Vol. 63 No. 2 (1996) 127–137
MOK, Y.S., LEE, W.K., LEE, Y.K., Modeling of liquid emulsion membranes facilitated by two carriers [*Pohang Iron & Steel Co. Ltd., Tech. Res. Labs, Kyungbuk, South Korea; Korea Adv. Inst. Sci. & Technol., Dept. Chem. Engr., Taejon, South Korea*]
- Vol. 63 No. 3 (1996) 139–139
GEORGAKIS, C., Editorial [*Lehigh Univ., Chem. Proc. Modeling & Control Res. Ctr., Bethlehem, PA, USA*]
- Vol. 63 No. 3 (1996) 141–147
FRANCES, C., LAGUÉRIE, C., MAZZAROTTA, B., VECCIA, T., On the analysis of fine wet grinding in a batch ball mill [*Ecole Natl. Super. Ingn. Genie Chim., CNRS, Toulouse, France; Univ. Roma La Sapienza, Dept. Chem. Engr., Rome, Italy*]
- Vol. 63 No. 3 (1996) 149–155
FAVELUKIS, M., ALBALAK, R.J., Bubble growth in viscous newtonian and non-newtonian liquids [*Technion Israel Inst. Technol., Dept. Chem. Engr., Haifa, Israel; MIT, Dept. Chem. Engr., Cambridge, MA, USA*]
- Vol. 63 No. 3 (1996) 157–166
NI, X., GAO, S., Scale-up correlation for mass transfer coefficients in pulsed baffled reactors [*Univ. Strathclyde, Dept. Chem. & Proc. Engr., Glasgow, Lanark, Scotland*]
- Vol. 63 No. 3 (1996) 167–180
WJN, E.F., The effect of downcomer layout pattern on tray efficiency [*Shell Int. Oil Prod., Amsterdam, Netherlands*]
- Vol. 63 No. 3 (1996) 181–188
LIANG, W.G., JIN, Y., YU, Z.Q., WANG, Z.W., ZHU, J.X., CHEN, J., Flow characteristics and mixing properties in a high velocity liquid–solid loop reactor [*Tsing Hua Univ., Dept. Chem. Engr., Beijing, P.R. China; Univ. Western Ontario, Dept. Chem. & Biochem. Engr., London, ON, Canada*]
- Vol. 63 No. 3 (1996) 189–194
SINGH, K.P., Correlations for estimation of acid equivalents of regenerated humic acid [*Reg. Res. Lab., Div. Chem. Engr., Jorhat, Assam, India*]
- Vol. 63 No. 3 (1996) 195–199
PAL, R., Anomalous effects in the flow behaviour of oil-in-water emulsions [*Univ. Waterloo, Dept. Chem. Engr., Waterloo, ON, Canada*]

- Vol. 64 No. 1 (1996) v–vii
GIONA, M., VAN DEN BLEEK, C.M., KRISHNA, R., Special issue on chaos and fractals in chemical engineering – preface [Univ. Cagliari, Cagliari, Italy; Univ. Delft, Delft, Netherlands; Univ. Amsterdam, Amsterdam, Netherlands]
- Vol. 64 No. 1 (1996) 1–5
PUNCOCHÁR, M., DRAHOS, J., SLEZÁK, J., Application of partially scaled fractals in the analysis of natural objects [Acad.Sci. Czech Rep., Inst. Chem. Proc. Fundamentals, Prague, Czech Rep.]
- Vol. 64 No. 1 (1996) 7–19
ADROVER, A., GIONA, M., A predictive model for permeability of correlated porous media [Univ. Roma La Sapienza, Dept. Chem. Engn., Rome, Italy]
- Vol. 64 No. 1 (1996) 21–44
SAHIMI, M., Linear and nonlinear, scalar and vector transport processes in heterogeneous media: Fractals, percolation, and scaling laws [Univ. South-California, Dept. Chem. Engn., Los Angeles, CA, USA]
- Vol. 64 No. 1 (1996) 45–61
GIONA, M., SCHWALM, W.A., ADROVER, A., SCHWALM, M.K., Analysis of linear transport phenomena on fractals [Univ. Roma La Sapienza, Dept. Chem. Engn., Rome, Italy; Univ. North-Dakota, Dept. Phys., Grand Forks, ND, USA]
- Vol. 64 No. 1 (1996) 63–68
MOUGIN, P., PONS, M., VILLERMAUX, J., Catalytic reactions at an artificial fractal interface: Simulation with the "Devil's Comb" [Ecole Natl. Super. Ind. Chim., CNRS, Nancy, France]
- Vol. 64 No. 1 (1996) 69–76
COPPENS, M.-O., FROMENT, G.F., Catalyst design accounting for the fractal surface morphology [State Univ. Ghent, Petrochem. Tech. Lab., Ghent, Belgium]
- Vol. 64 No. 1 (1996) 77–84
BORRELLI, S., GIORDANO, M., SALATINO, P., Modelling diffusion-limited gasification of carbons by branching pore models [Univ. Naples, Dept. Chem. Engn., Naples, Italy; Univ. Naples Federico II, Dipt. Ingn. Mat. & Produzione, Naples, Italy]
- Vol. 64 No. 1 (1996) 85–98
RUDZINSKI, W., DOMINKO, A., WOJCIECHOWSKI, B.W., Mixed-gas adsorption on real solid surfaces: Lack of correlations between adsorption energies of various components related to the wide applicability of the generalized Langmuir–Freundlich isotherm equation [Marie Curie Skłodowska Univ., Dept. Theoret. Chem., Lublin, Poland; Queens Univ., Dept. Chem. Engn., Kingston, ON, Canada]
- Vol. 64 No. 1 (1996) 99–106
LAPASIN, R., GRASSI, M., PRICL, S., Rheological modeling of fractal and dense suspensions [Univ. Trieste, Dept. Chem. Environm. & Raw Mat. Engn., Trieste, Italy]
- Vol. 64 No. 1 (1996) 107–115
ZHONG, H., BAKSHI, B.R., JIANG, P.J., FAN, L.-S., Multifractal characterization of flow in circulating fluidized beds [Ohio State Univ., Dept. Chem. Engn., Columbus, OH, USA]
- Vol. 64 No. 1 (1996) 117–127
MUZZIO, F.J., LU, M., Chemical reactions in chaotic flows [Rutgers State Univ., Dept. Chem. & Biochem. Engn., Piscataway, NJ, USA; Rutgers State Univ., Ctr. Comp Aids Ind. Prod., Piscataway, NJ, USA]
- Vol. 64 No. 1 (1996) 129–139
SAWYERS, D.R., SEN, M., CHANG, H.-C., Effect of chaotic interfacial stretching on bimolecular chemical reaction in helical coil reactors [Univ. Notre Dame, Dept. Aerosp. & Mech. Engn., Notre Dame, IN, USA; Univ. Notre Dame, Dept. Chem. Engn., Notre Dame, IN, USA]
- Vol. 64 No. 1 (1996) 141–148
QAMMAR, H., SESHADHRI, K.R., GOMATAM, R., VENKATESAN, A., Control of a chaotic polymerization reaction using linear and nonlinear controllers [Univ. Akron, Dept. Chem. Engn., Akron, OH, USA]
- Vol. 64 No. 1 (1996) 149–156
DRAHOS, J., THON, J., SERIO, C., LUBBERT, A., Deterministic chaos analysis of pressure fluctuations in a horizontal pipe at intermittent flow regime [Acad.Sci. Czech Rep., Inst. Chem. Proc. Fundamentals, Prague, Czech Rep.; Univ. Basilicata, Dipt. Ingn. & Fis. Ambiente, Potenza, Italy; Univ. Hannover, Inst. Tech. Chem., Hannover, Germany]
- Vol. 64 No. 1 (1996) 157–167
HAY, J.M., HUDSON, C., BRIENS, C.L., Correlation dimension for a gas–liquid contactor [Univ. Western Ontario, Dept. Chem. & Biochem. Engn., London, ON, Canada]
- Vol. 64 No. 1 (1996) 169–178
BRIENS, C.L., HUDSON, C., BRIENS, L.A., Rapid characterization of flow regimes in multiphase reactors through box-counting dimensions with an embedding dimension of two [Univ. Western Ontario, Dept. Chem. & Biochem. Engn., London, ON, Canada]
- Vol. 64 No. 1 (1996) 179–189
FULLER, T.A., FLYNN, T.J., DAW, C.S., Analysis of dynamic boiler measurements: A practical approach [Babcock & Wilcox Co., Div. Res. & Dev., Alliance, OH, USA; Oak Ridge Natl. Lab., Oak Ridge, TN, USA]
- Vol. 64 No. 1 (1996) 191–197
NGUYEN, K., DAW, C.S., CHAKKA, P., CHENG, M., BRUNS, D.D., FINNEY, C.E.A., KENNEL, M.B., Spatio-temporal dynamics in a train of rising bubbles [Univ. Tennessee, Knoxville, TN, USA; Oak Ridge Natl. Lab., Oak Ridge, TN, USA]
- Vol. 64 No. 2 (1996) ix
KUNG, H.H., Preface [Northwestern Univ., Dept. Chem. Engn., Evanston, IL, USA]
- Vol. 64 No. 2 (1996) 203–214
KUNG, H.H., KO, E.I., Preparation of oxide catalysts and catalyst supports – a review of recent advances [Northwestern Univ., Dept. Chem. Engn., Evanston, IL, USA; Carnegie Mellon Univ., Dept. Chem. Engn., Pittsburgh, PA, USA]
- Vol. 64 No. 2 (1996) 215–223
LEE, K.T., POZARNSKY, G., ZAREMBOVITCH, O., McCORMICK, A., ⁵¹V NMR of homogeneous multicomponent vanadium oxide solutions [Univ. Minnesota, Dept. Chem. Engn. & Mat. Sci., Minneapolis, MN, USA]
- Vol. 64 No. 2 (1996) 225–237
YING, J.Y., TSCHOPE, A., Synthesis and characteristics of non-stoichiometric nanocrystalline cerium oxide-based catalysts [MIT, Dept. Chem. Engn., Cambridge, MA, USA]
- Vol. 64 No. 2 (1996) 239–246
MOSER, W.R., CONNOLLY, K.E., Synthesis and characterization of copper-modified zinc chromites by the high temperature aerosol decomposition process for higher alcohol synthesis [Worcester Polytech. Inst., Dept. Chem. Engn., Worcester, MA, USA]
- Vol. 64 No. 2 (1996) 247–254
SOLED, S., MISEO, S., McVICKER, G., GATES, W.E., GUTIERREZ, A., PALES, J., Preparation and catalytic properties of

- supported heteropolyacid salts [Exxon Res. & Engr. Co., Annandate, NJ, USA]
- Vol. 64 No. 2 (1996) 255–263
FENG, X.B., LEE, J.S., LEE, J.W., LEE, J.Y., WEI, D., HALLER, G.L., Effect of pore size of mesoporous molecular sieves (MCM-41) on Al stability and acidity [Yale Univ., Dept. Chem. Engr., New Haven, CT, USA; Korea Adv. Inst. Sci. & Technol., Dept. Elect. Mat. Engr., Taejon, South Korea; Pohang Univ. Sci. & Technol., Dept. Chem. Engr., Pohang, South Korea]
- Vol. 64 No. 2 (1996) 265–272
CONTESCU, C., POPA, V.T., MILLER, J.B., KO, E.I., SCHWARZ, J.A., Brønsted-type relationship for surface-active sites on solid acid catalysts: 1-butene isomerization on TiO₂-SiO₂, ZrO₂-SiO₂, and Al₂O₃-SiO₂ mixed oxide catalysts [Syracuse Univ., Dept. Chem. Engr. & Mat. Sci., New York, NY, USA; Carnegie Mellon Univ., Dept. Chem. Engr., Pittsburgh, PA, USA; Romanian Acad. Inst. Phys. Chem., Bucharest, Romania]
- Vol. 64 No. 2 (1996) 273–281
MILLER, J.B., KO, E.I., A Brønsted acid strength hierarchy for zirconia-silica-sulfate aerogels [Carnegie Mellon Univ., Dept. Chem. Engr., Pittsburgh, PA, USA]
- Vol. 64 No. 2 (1996) 283–294
LIU, W., FLYTZANI-STEFANOPOULOS, M., Transition metal-promoted oxidation catalysis by fluorite oxides: A study of CO oxidation over Cu-CeO₂ [MIT, Dept. Chem. Engr., Cambridge, MA, USA; Tufts Univ., Dept. Chem. Engr., Medford, MA, USA]
- Vol. 64 No. 2 (1996) 295–302
NEEFT, J.P.A., MAKKEE, M., MOULIJN, J.A., Metal oxides as catalysts for the oxidation of soot [Delft Univ. Technol., Sect. Ind. Catalysis, Delft, Netherlands]
- Vol. 64 No. 3 (1996) 307–317
CARRERE, H., BASCOUL, A., FLOQUET, P., WILHELM, A.M., DELMAS, H., Whey proteins extraction by fluidized ion exchange chromatography: simplified modeling and economical optimization [Ecole Nat. Super. Ingn. Genie Chim., CNRS, Toulouse, France]
- Vol. 64 No. 3 (1996) 319–343
KERKHOF, P.J.A.M., A modified Maxwell-Stefan model for transport through inert membranes: the binary friction model [Eindhoven Univ. Technol., Fac. Chem. Engr. & Chem., Eindhoven, Netherlands]
- Vol. 64 No. 3 (1996) 345–352
WEI, F., ZHU, J.-X., Effect of flow direction on axial solid dispersion in gas-solids cocurrent upflow and downflow systems [Univ. Western Ontario, Dept. Chem. & Biochem. Engr., London, ON, Canada; Tsing Hua Univ., Dept. Chem. Engr., Beijing, P.R. China]
- Vol. 64 No. 3 (1996) 353–359
SAN JOSÉ, M.J., OLAZAR, M., LLAMOSAS, R., IZQUIERDO, M.A., BILBAO, J., Study of dead zone and spout diameter in shallow spouted beds of cylindrical geometry [Univ. Pais Vasco, Dept. Chem. Engr., Bilbao, Spain]
- Vol. 64 No. 3 (1996) 361–362
KUBACZKA, A., BANDROWSKI, J., Film model for mass transfer in non-ideal multicomponent fluid mixtures – comment [Polish Acad. Sci., Inst. Chem. Engr., Gliwice, Poland; Silesian Tech. Univ., Inst. Chem. Engr. & Apparatus Construct., Gliwice, Poland]
- Vol. 65 No. 1 (1997) 1–11
JAUREGI, P., GILMOUR, S., VARLEY, J., Characterization of colloidal gas aphrons for subsequent use for protein recovery [Univ. Reading, Biotechnol. & Biochem. Engr. Grp., Reading, Berks, England; Univ. Reading, Dept. Appl. Stat., Reading, Berks, England]
- Vol. 65 No. 1 (1997) 13–19
KHOSHMANESH, A., LAWSON, F., PRINCE, I.G., Cell surface area as a major parameter in the uptake of cadmium by unicellular green microalgae [Monash Univ., Dept. Chem. Engr., Clayton, VIC, Australia]
- Vol. 65 No. 1 (1997) 21–26
CILLIERS, J.J., HARRISON, S.T.L., The application of mini-hydrocyclones in the concentration of yeast suspensions [Univ. Manchester, Inst. Sci. & Technol., Manchester, Lancs, England; Univ. Cape Town, Dept. Chem. Engr., Rondebosch, South Africa]
- Vol. 65 No. 1 (1997) 27–36
LACKI, K., DUVNJAK, Z., Enzymatic transformation of sinapine using polyphenol oxidase from *Trametes versicolor*. Effect of pH and temperature and model development [Univ. Ottawa, Dept. Chem. Engr., Ottawa, ON, Canada]
- Vol. 65 No. 1 (1997) 37–46
GUPTA, N., GUPTA, S.K., RAMACHANDRAN, K.B., Modelling and simulation of anaerobic stratified biofilm for methane production and prediction of multiple steady states [Indian Inst. Technol., Dept. Chem. Engr., New Delhi, India; Indian Inst. Technol., Dept. Biochem. Engr. & Biotechnol., New Delhi, India]
- Vol. 65 No. 1 (1997) 47–53
JUANG, R.-S., HUANG, R.-H., Equilibrium studies on reactive extraction of lactic acid with an amine extractant [Yuan-Ze Inst. Technol., Dept. Chem. Engr., Tayuan, Taiwan]
- Vol. 65 No. 1 (1997) 55–61
ZAROOK, S.M., SHAIKH, A.A., Analysis and comparison of biofilter models [King Fahd Univ. Petr. & Minerals, Dept. Chem. Engr., Dhahran, Saudi Arabia]
- Vol. 65 No. 1 (1997) 63–69
NATH, S., SHUKLA, V., A new approach to evaluate kinetic parameters and mass transfer coefficients in continuous stirred tank reactors. Application to antibiotic separation [Indian Inst. Technol., Dept. Biochem. Engr. & Biotechnol., New Delhi, India]
- Vol. 65 No. 1 (1997) 71–76
BULMUS, V., AYHAN, H., PISKIN, E., Modified PMMA monosize microbeads for glucose oxidase immobilization [Hacettepe Univ., Dept. Chem. Engr., Ankara, Turkey; Hacettepe Univ., Div. Bioengn, Ankara, Turkey]
- Vol. 65 No. 1 (1997) 77–80
JAYARAMAN, V.K., KULKARNI, B.D., An efficient algorithm for solving hollow-fiber bioreactor design equations [Nat. Chem. Lab., Div. Chem. Engr., Poona, Maharashtra, India]
- Vol. 65 No. 1 (1997) 81–86
MUTLU, M., SAG, Y., KUTSAL, T., The adsorption of copper(II) by *Z. ramigera* immobilized on Ca-alginate in packed bed columns: a dynamic approach by stimulus-response technique and evaluation of adsorption data by moment analysis [Hacettepe Univ., Dept. Food Engr., Ankara, Turkey; Hacettepe Univ., Dept. Chem. Engr., Ankara, Turkey]
- Vol. 65 No. 1 (1997) 87–91
SRIRAM, P., KALOGERAKIS, N., BEHRE, L.A., An investigation into the possible effects of proteolysis on IgM enzyme-linked

- immunosorbent assay titres [Univ. Calgary, Fac. Engr., Calgary, AB, Canada]
- Vol. 65 No. 2 (1997) 93-98
CARRARA, C.R., RUBIOLLO, A.C., A method for evaluating lactose hydrolysis in a fixed bed reactor with β -galactosidase immobilized on chitosan [UNL, CONICET, Santa Fe, Argentina]
- Vol. 65 No. 2 (1997) 99-104
TRUONG-MEYER, X.-M., STREHAIANO, P., RIBA, J.-P., Thermal inactivation of two yeast strains heated in a strawberry product: experimental data and kinetic model [Ecole Natl. Super. Ingn. Genie Chim., CNRS, Toulouse, France]
- Vol. 65 No. 2 (1997) 105-108
KATOH, S., TERASHIMA, M., YAMAMOTO, K., KOUNO, M., Discrimination between α -amylase isozymes with anti-peptide antibodies [Kyoto Univ., Dept. Synthet. Chem. & Biol. Chem., Kyoto, Japan]
- Vol. 65 No. 2 (1997) 109-116
ÇALIK, G., VURAL, H., ÖZDAMAR, T.H., Bioprocess parameters and oxygen transfer effects in the growth of *Pseudomonas dacunhae* for L-alanine production [Ankara Univ., Dept. Chem. Engr., Ankara, Turkey; Ankara Univ., Ind. Biotechnol. Dept., Ankara, Turkey]
- Vol. 65 No. 2 (1997) 117-121
LAI, B.L., SHIEH, W.K., Substrate inhibition kinetics in a fluidized bioparticle [Univ. Penn, Dept. Syst Engr., Philadelphia, PA, USA]
- Vol. 65 No. 2 (1997) 123-132
DEY, S., MARSHALL, C., SLATER, N.K.H., Fermenter balancing for semi-continuous, multi-tank mammalian cell culture processes [Univ. Aston, Dept. Chem. Engr. & Appl. Chem., Birmingham, West-Midlands, England; Glaxo Wellcome Res. & Dev. Ltd., Beckenham, Kent, England]
- Vol. 65 No. 2 (1997) 133-143
JACOB, J., LE LANN, J.-M., PINGAUD, H., CAPDEVILLE, B., A generalized approach for dynamic modelling and simulation of biofilters: application to waste-water denitrification [Ecole Natl. Super. Ingn. Genie Chim., CNRS, Toulouse, France; Inst. Natl. Sci. Appl., Toulouse, France]
- Vol. 65 No. 2 (1997) 145-149
CICCOLINI, L., TAILLANDIER, P., WILHELM, A.M., DELMAS, H., STREHAIANO, P., Low frequency thermo-ultrasonication of *Saccharomyces cerevisiae* suspensions: effect of temperature and of ultrasonic power [Ecole Natl. Super. Ingn. Genie Chim., CNRS, Toulouse, France; Univ. London Univ. Coll., Dept. Chem. & Biochem. Engr., London, England]
- Vol. 65 No. 2 (1997) 151-157
ISHII, Y., TESHIMA, T., KONDO, A., MURAKAMI, K., SONEZAKI, S., I. OGAWA, H., KATO, Y., FUKUDA, H., Operation conditions of enzyme refolding by chaperonin and recycle system using ultrafiltration [Kobe Univ., Fac. Engr., Kobe, Hyogo, Japan; Kyushu Inst. Technol., Fac. Engr., Kitakyushu, Fukuoka, Japan; Kobe Univ., Grad Sch. Sci. & Technol., Kobe, Hyogo, Japan]
- Vol. 65 No. 3 (1997) 159-164
GANDHI, N.N., SAWANT, S.B., JOSHI, J.B., MUKESH, D., Deactivation of immobilized lipozyme: Effect of butanol, temperature and water content [Univ. Mumbai, Dept. Chem. Techn., Matunga, Mumbai, India; Aich. Res. Centr., Thane, India]
- Vol. 65 No. 3 (1997) 165-174
BEG, S.A., HASSAN, M.M., CHAUDRY, M.A.S., Effect of sinusoidal perturbations of feed concentration on multi-substrate carbon oxidation and nitrification process in an upflow packed-bed biofilm reactor [King Fahd Univ. Petr. & Minerals, Dept. Chem. Engr., Dhahran, Saudi Arabia]
- Vol. 65 No. 3 (1997) 175-186
LEE, J.-G., LEE, W.-C., WANG, F.-S., Simulation of pH elution in high-performance affinity chromatography using non-porous adsorbent [Natl. Chung Cheng Univ., Dept. Chem Engr., Chiayi, Taiwan]
- Vol. 65 No. 3 (1997) 187-194
NOURI, L., LEGRAND, J., POPINEAU, Y., BELLEVILLE, P., Enzymatic hydrolysis of wheat proteins Part I. Enzymatic kinetics and study of limited hydrolysis in a batch stirred reactor [Inst. Univ. Technol., Genie Proc. Lab., St. Nazaire, France; INRA-BP, Lab. Biochim. Techn. Prot., Nantes, France]
- Vol. 65 No. 3 (1997) 195-199
NOURI, L., LEGRAND, J., POPINEAU, Y., BELLEVILLE, P., Enzymatic hydrolysis of wheat proteins Part 2: comparison of performance of batch-stirred and torus reactors [Inst. Univ. Technol., Genie Proc. Lab., St. Nazaire, France; INRA-BP, Lab. Biochim. Techn. Prot., Nantes, France]
- Vol. 65 No. 3 (1997) 201-207
MACÍAS, M., CARO, I., CANTERO, D., Optimum operating conditions in closed-system industrial acetifiers (semi-continuous operation): a study by computer simulation [Univ. Cadiz, Dept. Chem. Engr., Cadiz, Spain]
- Vol. 65 No. 3 (1997) 209-212
MATHASEVIC, LJ., VASIC-RACKI, D., PAVLOVIC, N., Separation of glucose/fructose mixtures. Analysis of elution of profiles [Fac. Chem. Engr. Techn., Zagreb, Croatia; PLIVA, Zagreb, Croatia]
- Vol. 65 No. 3 (1997) 213-217
ROY, D., BHATTACHARYA, P., Population dynamics of recombinant cultures in a dimensionless time domain [Jadavpur Univ., Dept. Chem. Engr., Calcutta, India]
- Vol. 65 No. 3 (1997) 219-226
LANG, CH., GÖLLNITZ, C., POPOVIC, M., STAHL, U., Optimization of fungal polygalacturonase synthesis by *Saccharomyces cerevisiae* in fed-batch culture [Techn. Univ. Berlin, Inst. Biotechn., Berlin, Germany; Techn. Fachhochsch. Berlin, Berlin, Germany]
- Vol. 65 No. 3 (1997) 227-235
BOAVENTURA, A.R. RUI, RODRIGUES, E. ALÍRIO, Denitrification kinetics in a rotating disk biofilm reactor [Univ. Oporto, Lab. Sep. React. Engr., Oporto, Portugal]
- Vol. 65 No. 3 (1997) 237-247
SYU, M.-J., CHEN, Y.-H., A study on the α -amylase fermentation performed by *Bacillus amyloliquefaciens* [Natl. Cheng-Kung Univ., Dept. Chem. Engr., Tainan, Taiwan]
- Vol. 65 No. 3 (1997) 249-256
BRYJAK, J., BACHMANN, K., PAWLOW, B., MALISZEWSKA, I., TROCHIMCZUK, A., KOLARZ, N.B., Immobilization of lipase on various acrylic copolymers [Techn. Univ. Wroclaw, Inst. Chem. Engr., Wroclaw, Poland; Techn. Univ. Wroclaw, Inst. Org. Chem. Biochem. Biotechn., Wroclaw, Poland; Techn. Univ. Wroclaw, Inst. Org. Polym. Techn., Wroclaw, Poland]
- Vol. 65 No. 3 (1997) 257-261
HIKIDA, N., TOMIOKA, K., SHIOMI, N., TERASHIMA, M., KATOH, S., Immunogenicity differences between intact insulin

- and a peptide representing the C-terminal region [Kyoto Univ., Dept. Synthet. Chem. & Biol. Chem., Kyoto, Japan; Kaneka Corp., Res. Inst., Takasago, Hyogo, Japan; Kaneka Corp., Res. Inst., Takasago, Hyogo, Japan]
- Vol. 65 No. 3 (1997) 263–271
 AL-MASRY, W.A., DUKKAN, A.R., The role of gas disengagement and surface active agents on hydrodynamic and mass transfer characteristics of airlift reactors [Univ. Durban-Westville, Dept. Chem. Engn., Durban, South Africa]
- Vol. 66 No. 1 (1997) 1–10
 WRAGG, A.A., LEONTARITIS, A.A., Local mass transfer and current distribution in baffled and unbaffled parallel plate electrochemical reactors [Univ. Exeter, Sch. Engn., Exeter, Devon, England]
- Vol. 66 No. 1 (1997) 11–20
 MOK, Y.S., LEE, W.K., LEE, Y.K., Modeling of liquid emulsion membranes facilitated by two carriers [Pohang Iron & Steel Co. Ltd., Tech. Res. Labs, Kyungbuk, South Korea; Korea Adv. Inst. Sci. & Technol., Dept. Chem. Engn., Taejon, South Korea]
- Vol. 66 No. 1 (1997) 21–26
 GONDREXON, N., RENAUDIN, V., BOLDO, P., GONTHIER, Y., BERNIS, A., PETRIER, C., Degassing effect and gas-liquid transfer in a high frequency sonochemical reactor [Univ. Savoie, ESIGEC, Le Bourget du Lac, France]
- Vol. 66 No. 1 (1997) 27–33
 BARRÓN, M.A., GONZÁLEZ, J., AGUILAR, R., ARCE-MEDINA, E., Successful bounded control for a chemical reactor with non-linear oscillatory consecutive reactions [Univ. Autónoma Metropolitana Azcapotzalco, Dept. Mat., Mexico City, Mexico; Univ. Autónoma Metropolitana Azcapotzalco, Dept. Sistemas, Mexico City, Mexico; Univ. Autónoma Metropolitana Azcapotzalco, Dept. Energia, Mexico City, Mexico; Inst. Politecn. Nacl., ESIQUE, Mexico City, Mexico]
- Vol. 66 No. 1 (1997) 35–49
 KONTOGEORGIS, G.M., TASSIOS, D.P., Critical constants and acentric factors for long-chain alkanes suitable for corresponding states applications. A critical review [Natl. Tech. Univ., Dept. Chem. Engn., Zografos, Greece]
- Vol. 66 No. 1 (1997) 51–56
 AL-QAHFANI, H., Effect of ageing on a steam reforming catalyst [Univ. Bahrain, Dept. Chem. Engn., Isa Town, Bahrain]
- Vol. 66 No. 1 (1997) 57–63
 PETRESCU, S., PETRESCU, J., LISA, C., Mass transfer at solid dissolution [Techn. Univ. Iasi, Dept. Chem. Engn., Iasi, Romania]
- Vol. 66 No. 1 (1997) 65–71
 MILAN, Z., SÁNCHEZ, E., WEILAND, P., DE LAS POZAS, C., BORJA, R., MAYARI, R., ROVIROSA, N., Ammonia removal from anaerobically treated piggery manure by ion exchange in columns packed with homoionic zeolite [Natl. Ctr. Sci. Res., Havana, Cuba; FAL, Inst. Technol., Braunschweig, Germany; CSIC, Inst. Grasa, Seville, Spain]
- Vol. 66 No. 1 (1997) 73–77
 RIEGER, F., Pumping characteristics of a screw agitator in a tube [Czech Tech. Univ., Fac. Mech. Engn., Prague, Czech Rep.]
- Vol. 66 No. 1 (1997) 79–82
 ZHANG, Q.W., SAITO, F., Mechanochemical processing of celestine [Tohoku Univ., Inst. Adv. Mat. Proc., Sendai, Miyagi, Japan]
- Vol. 66 No. 2 (1997) 85–89
 WHITE, D.A., RAUTIU, R., The sorption of anionic species on hydrous tin dioxide [Univ. London Imperial Coll. Sci. Technol. & Med., Dept. Chem. Engn., London, England]
- Vol. 66 No. 2 (1997) 91–95
 BENTIFRAOUINE, C., XUEREB, C., RIBA, J.-P., Effect of gas liquid separator and liquid height on the global hydrodynamic parameters of an external loop airlift contactor [Ecole Natl. Super. Ingn. Genie Chim., CNRS, Toulouse, France]
- Vol. 66 No. 2 (1997) 97–104
 GAVRILESCU, M., TUDOSE, R.Z., Mixing studies in external-loop airlift reactors [Chem. Pharmaceut. Res. Inst., Res. Ctr. Antibiot, Iasi, Romania; Techn. Univ. Iasi, Dept. Transfer Phenomena & Chem. Engn., Iasi, Romania]
- Vol. 66 No. 2 (1997) 105–110
 KIM, Y.T., SONG, B.H., KIM, S.D., Entrainment of solids in an internally circulating fluidized bed with draft tube [Korea Adv. Inst. Sci. & Technol., Dept. Chem. Engn., Taejon, South Korea; Korea Adv. Inst. Sci. & Technol., Energy & Environm. Res. Ctr., Taejon, South Korea]
- Vol. 66 No. 2 (1997) 111–121
 VAN DER WIELEN, L.A.M., ZOMERDIJK, M., HOUWERS, J., LUYBEN, K.CH.A.M., Diffusivities of organic electrolytes in water [Delft Univ. Technol., Dept. Biochem. Engn., Delft, Netherlands]
- Vol. 66 No. 2 (1997) 123–129
 LANCIA, A., MUSMARRA, D., PEPE, F., PRISCIANDARO, M., Model of oxygen absorption into calcium sulfite solutions [Univ. Naples, Dept. Chem. Engn., Naples, Italy; CNR, Ist. Ric. Combust, Naples, Italy; Univ. Naples 2, Fac. Sci. Ambientali, Caserta, Italy]
- Vol. 66 No. 2 (1997) 131–135
 COSTIGAN, G., WHALLEY, P.B., Measurements of the speed of sound in air-water flows [Univ. Oxford, Dept. Engn. Sci., Oxford, England]
- Vol. 66 No. 2 (1997) 137–147
 DE LUCAS, A., CANIZARES, P., RODRÍGUEZ, J.F., GRACIA, I., Potassium removal from water-methanol-polyol mixtures by ion exchange on Amberlite 252 [Univ. Castilla La Mancha, Dept. Chem. Engn., Ciudad Real, Spain]
- Vol. 66 No. 2 (1997) 149–150
 SONG, M., NANDAKUMAR, K., CHUANG, K.T., The correct mathematical description and a suggested solution method for a model in packed columns – comment [Univ. Alberta, Dept. Chem. Engn., Edmonton, AB, Canada]
- Vol. 66 No. 2 (1997) 151–151
 EVREN, V., OZDURAL, A.R., The correct mathematical description and a suggested solution method for a model in packed columns – reply [Hacettepe Univ., Dept. Chem. Engn., Ankara, Turkey]
- Vol. 66 No. 3 (1997) 159–169
 CEN, K.F., LI, X.D., LI, Y.X., YAN, J.H., SHEN, Y.L., LIANG, S.R., NI, M.J., Experimental study of a finned tubes impact gas-solid separator for CFB boilers [Zhejiang Univ., Inst. Thermal Power Engn., Hangzhou, P.R. China]
- Vol. 66 No. 3 (1997) 171–179
 GAREA, A., FERNÁNDEZ, I., VIGURI, J.R., ORTIZ, M.I., FERNÁNDEZ, J., RENEDE, M.J., IRABIEN, J.A., Fly-ash/calcium hydroxide mixtures for SO₂ removal: structural properties and

- maximum yield [Univ. Cantabria, Dept. Chem., Santander, Spain]
- Vol. 66 No. 3 (1997) 181–191
THIEL, C., SUNDMACHER, K., HOFFMANN, U., Synthesis of ETBE: Residue curve maps for the heterogeneously catalyzed reactive distillation process [Techn. Univ. Clausthal, Inst. Chem. Verfahrenstechnik, Clausthal-Zellerfeld, Germany]
- Vol. 66 No. 3 (1997) 193–200
MLECZKO, L., WURZEL, T., Experimental studies of catalytic partial oxidation of methane to synthesis gas in a bubbling-bed reactor [Ruhr Univ. Bochum, Lehrstuhl Tech. Chem., Bochum, Germany]
- Vol. 66 No. 3 (1997) 201–206
FAN, J.R., SHI, J.M., ZHENG, Y.Q., CEN, K.F., Particle-turbulence interactions in the turbulent boundary layer for cross flow over a tube [Zhejiang Univ., Dept. Energy Engn., Hangzhou, P.R. China]
- Vol. 66 No. 3 (1997) 207–215
FAN, J.R., ZHANG, X.Y., CHEN, L.H., CEN, K.F., New stochastic particle dispersion modeling of a turbulent particle-laden round jet [Zhejiang Univ., Dept. Energy Engn., Hangzhou, P.R. China]
- Vol. 66 No. 3 (1997) 217–221
NUNG, W.-C., TSAI, F.-N., Correlation of vapor-liquid equilibrium for systems of carbon dioxide + hydrocarbon by the corresponding-states principle [Tung Fang Coll. Technol. & Commerce, Dept. Chem. Engn., Kaohsiung, Taiwan; Natl. Cheng-Kung Univ., Dept. Chem. Engn., Tainan, Taiwan]
- Vol. 66 No. 3 (1997) 223–226
NASSAR, M.M., MAGDY, Y.H., Removal of different basic dyes from aqueous solutions by adsorption on palm-fruit bunch particles [Menia Univ., Fac. Engn., Menia, Egypt]
- Vol. 66 No. 3 (1997) 227–230
HAN, S.J., JIN, Y., YU, Z.Q., Application of a fluidized reaction-distillation column for hydrolysis of methyl acetate [Tsing Hua Univ., Dept. Chem. Engn., Beijing, P.R. China]
- Vol. 66 No. 3 (1997) 231–234
HART, P.W., SOMMERFELD, J.T., Elliptic integral solutions for the kinetics of autocatalytic termolecular reactions with reactive intermediate species [Georgia Inst. Technol., Sch. Chem. Engn., Atlanta, GA, USA]
- Vol. 67 No. 1 (1997) 1–7
FERNÁNDEZ-LOZANO, J.A., WINT, A., Production of glaserite and potassium sulfate from gypsum and sylvinitic catalyzed by ammonia [Univ. Oriente, Dept. Chem. Engn., Puerto La Cruz, Venezuela; Univ. Nottingham, Dept. Chem. Engn., Nottingham, England]
- Vol. 67 No. 1 (1997) 9–18
PULLEY, R.A., Modelling the performance of venturi scrubbers [Univ. Nottingham, Dept. Chem. Engn., Nottingham, England]
- Vol. 67 No. 1 (1997) 19–25
ASAI, S., NAKAMURA, H., YAMADA, M., Micellar-catalyzed alkaline hydrolysis of *n*-butyl acetate by cetyltrimethylammonium bromide [Univ. Osaka Prefecture, Dept. Chem. Engn., Sakai, Osaka, Japan]
- Vol. 67 No. 1 (1997) 27–36
YANG, T., CHEN, G.-J., YAN, W., GUO, T.-M., Extension of the Wong-Sandler mixing rule to the three-parameter Patel-Teja equation of state: Application up to the near-critical region [Univ. Petr., High Pressure Fluid Phase Behav. & Property Res. Labs, Beijing, P.R. China]
- Vol. 67 No. 1 (1997) 37–44
PAL, R., Viscosity and storage/loss moduli for mixtures of fine and coarse emulsions [Univ. Waterloo, Dept. Chem. Engn., Waterloo, ON, Canada]
- Vol. 67 No. 1 (1997) 45–53
MEIER, D., WARNECKE, H.-J., PRÜSS, J., Modelling of mass transfer of volatile organic compounds in polymer dispersions [Univ. Gesamthoch. Paderborn, Paderborn, Germany; Univ. Halle Wittenberg, Halle, Germany]
- Vol. 67 No. 1 (1997) 55–64
NICOLAS SIMONNOT, M.-O., TRÉGUIER, V., LECLERC, J.-P., SARDIN, M., BRAJOUX, J.-P., MOY, J., TAKERKART, G., Experimental study and modelling of gelatin production from bone powder: elaboration of an overall kinetic scheme for the acid process [Ecole Natl. Super. Ind. Chim., CNRS, Nancy, France; SBI, Isle Sorgue, France]
- Vol. 67 No. 1 (1997) 65–69
OLIVER, D.R., Stretching flow tests on polymer-thickened motor oils using an accelerated-film technique [Univ. Birmingham, Sch. Chem. Engn., Birmingham, West-Midlands, England]
- Vol. 67 No. 1 (1997) 71–75
LI, Q.Y., CUI, Z.F., PEPPER, D.S., Effect of bubble size and frequency on the permeate flux of gas sparged ultrafiltration with tubular membranes [Univ. Oxford, Dept. Engn. Sci., Oxford, England; Scottish Natl. Blood Transfus. Serv., Natl. Sci. Lab., Edinburgh, Midlothian, Scotland]
- Vol. 67 No. 2 (1997) 83–96
LEGENTILHOMME, P., BRUJES, L., LEGRAND, J., Distribution of staying times of liquid in a non-maintained liquid-solid eddying flow: influence of the presence of solids (in French) [Inst. Univ. Technol., Genie Proc. Lab., St. Nazaire, France]
- Vol. 67 No. 2 (1997) 97–102
MIKULÁSEK, P., WAKEMAN, R.J., MARCHANT, J.Q., The influence of pH and temperature on the rheology and stability of aqueous titanium dioxide dispersions [Univ. Pardubice, Dept. Chem. Engn., Pardubice, Czech Rep.; Loughborough Univ. Technol., Dept. Chem. Engn., Loughborough, Leics, England]
- Vol. 67 No. 2 (1997) 103–114
BANDYOPADHYAY, J.K., TAMBE, S.S., JAYARAMAN, V.K., DESHPANDE, P.B., KULKARNI, B.D., On control of nonlinear system dynamics at unstable steady state [Natl. Chem. Lab., Div. Chem. Engn., Poona, Maharashtra, India; Univ. Louisville, Dept. Chem. Engn., Louisville, KY, USA]
- Vol. 67 No. 2 (1997) 115–121
MIGUÉLEZ, J.R., PORTELA, BERNAL, J., LÓPEZ, SANZ, E., NEBOT, DE LA OSSA, E., MARTÍNEZ, Kinetics of wet air oxidation of phenol [Univ. Cadiz, Fac. Sci., Cadiz, Spain]
- Vol. 67 No. 2 (1997) 123–129
PANT, K.K., KUNZRU, D., Pyrolysis of methylcyclohexane: kinetics and modelling [Indian Inst. Technol., Dept. Chem. Engn., Kanpur, Uttar Pradesh, India]
- Vol. 67 No. 2 (1997) 131–137
VÁZQUEZ, G., CANCELA, M.A., VARELA, R., ALVAREZ, E., NAVAZA, J.M., Influence of surfactants on absorption of CO₂ in a stirred tank with and without bubbling [Univ. Santiago, Dept. Chem. Engn., Santiago de Compostela, Spain; Univ. Vigo, Dept. Chem. Engn., Vigo, Spain]

- Vol. 67 No. 2 (1997) 139–145
 MONTES, J.-L., BOISSON, H.-C., FORT, I., JAHODA, M., Velocity field macro-instabilities in an axially agitated mixing vessel [UPS, IMFT, Toulouse, France; Czech Tech. Univ., Fac. Mech. Engr., Prague, Czech Rep.; Prague Inst. Chem. Technol., Fac. Chem. Engr., Prague, Czech Rep.]
- Vol. 67 No. 3 (1997) 153–166
 HOBBS, D.M., MUZZIO, F.J., The Kenics static mixer: a three-dimensional chaotic flow [Rutgers State Univ., Dept. Chem. & Biochem. Engr., Piscataway, NJ, USA]
- Vol. 67 No. 3 (1997) 167–173
 MANNA, L., Comparison between physical and chemical methods for the measurement of mixing times [Politecn. Turin, Dipt. Sci. Mat. & Ingn. Chim., Turin, Italy]
- Vol. 67 No. 3 (1997) 175–180
 SOONG, Y., GAMWO, I.K., BLACKWELL, A.G., MUNDORF, K.R., HARKE, F.W., SCIEHL, R.R., ZAROCHAK, M.F., Ultrasonic measurement of solids concentration in an autoclave reactor at high temperature [US DOE, Fed. Energy Technol. Ctr., Pittsburgh, PA, USA]
- Vol. 67 No. 3 (1997) 181–189
 ZHANG, J., MARTIN, E.B., MORRIS, A.J., Process monitoring using non-linear statistical techniques [Univ. Newcastle upon Tyne, Dept. Chem. & Proc. Engr., Newcastle upon Tyne, Tyne & Wear, England; Univ. Newcastle upon Tyne, Dept. Engr. Math., Newcastle upon Tyne, Tyne & Wear, England]
- Vol. 67 No. 3 (1997) 191–197
 MATIYS, R.G., HEINZELMANN, W., WITHOLT, B., Separation of higher molecular weight organic compounds by pervaporation [Swiss Fed. Inst. Technol., Tech. Chem. Lab., Zurich, Switzerland]
- Vol. 67 No. 3 (1997) 199–203
 QUIROGA, M.E., FIGOLI, N.S., SEDRAN, U.A., Synthesis of methyl tert-butyl ether on sulfur-promoted ZrO₂ [UNL, CONICET, Santa Fe, Argentina]
- Vol. 67 No. 3 (1997) 205–214
 GUO, Y.X., RATHOR, M.N., TI, H.C., Hydrodynamics and mass transfer studies in a novel external-loop airlift reactor [Natl. Univ. Singapore, Dept. Chem. Engr., Singapore, Singapore]
- Vol. 67 No. 3 (1997) 215–219
 ESPINOSA-SOLARES, T., BRITO DE LA FUENTE, E., TECANTE, A., TANGUY, P.A., Power consumption of a dual turbine-helical ribbon impeller mixer in ungassed conditions [Univ. Nacl. Autonoma Mexico, Fac. Quim., Mexico City, Mexico; Univ. Autonoma Chapingo, Dept. Ingn. Agroind., Chapingo, Mexico; Ecole Polytech., Dept. Chem. Engr., Montreal, PQ, Canada]
- Vol. 68 No. 1 (1997) 1–6
 JAMSHIDI, E., EBRAHIM, H. ALE, A quantized solution for the nucleation model in gas–solid reactions [Ami Kabir Univ., Dept. Chem. Engr., Tehran, Iran]
- Vol. 68 No. 1 (1997) 7–9
 CHEN, Y., WU, R.R., MORI, S., Development of a new type of thermogravimetric analyzer with a mini-tapered fluidized bed. Effect of fluidization of particles on the stability of the system [Chinese Acad. Sci., Lab. Clean Fuel, Guangzhou, P.R. China; Nagoya Univ., Dept. Chem. Engr., Nagoya, Aichi, Japan]
- Vol. 68 No. 1 (1997) 11–27
 CHEN, Z., ARCE, P., An integral-spectral approach for convective-diffusive mass transfer with chemical reaction in Couette flow. Mathematical formulation and numerical illustrations [Florida A&M Univ., Florida State Univ., Tallahassee, FL, USA]
- Vol. 68 No. 1 (1997) 29–33
 BÉKÁSSY-MOLNÁR, E., MAJEED, J.G., VATAI, GY., Overall volumetric oxygen transfer coefficient and optimal geometry of airlift tube reactor [Univ. Hort. & Food, Dept. Food Engr., Budapest, Hungary; Tech. Univ. Budapest, Dept. Chem. Engr., Budapest, Hungary]
- Vol. 68 No. 1 (1997) 35–40
 DOVI, V.G., MAGA, L., REVERBERI, A.P., A pattern recognition approach to the solution of optimal singular control problems [Univ. Genoa, Ist. G.B. Bonino, Genoa, Italy]
- Vol. 68 No. 1 (1997) 41–50
 NIKRAVESH, M., FARELL, A.E., STANFORD, T.G., Dynamic neural network control for non-linear systems: optimal neural network structure and stability analysis [Univ. California Berkeley, Lawrence Berkeley Lab., Berkeley, CA, USA; Univ. South-Carolina, Dept. Chem. Engr., Columbia, SC, USA]
- Vol. 68 No. 1 (1997) 51–62
 LIANG, W.G., ZHU, J.-X., A core-annulus model for the radial flow structure in a liquid–solid circulating fluidized bed (LSCFB) [Univ. Western Ontario, Dept. Chem. & Biochem. Engr., London, ON, Canada]
- Vol. 68 No. 1 (1997) 63–68
 FUBITA, S.-I., TAKEZAWA, N., Difference in the selectivity of CO and CO₂ methanation reactions [Hokkaido Univ., Fac. Engr., Sapporo, Hokkaido, Japan]
- Vol. 68 No. 1 (1997) 69–72
 KIM, K., FAHIDY, T.Z., On the numerical solution of an electrolytic convective-diffusion problem in an externally imposed force field [Univ. Waterloo, Dept. Chem. Engr., Waterloo, ON, Canada]
- Vol. 68 No. 2-3 (1997) 75–86
 GUIRAUD, P., COSTES, J., BERTRAND, J., Local measurements of fluid and particle velocities in a stirred suspension [Ecole Natl. Super. Ingn. Genie Chim., CNRS, Toulouse, France]
- Vol. 68 No. 2-3 (1997) 87–94
 PALM, M., THIELANDER, H., Kinetic study of the direct causticization reaction involving titanates and titanium dioxide [Techn. Univ. Chalmers, Dept. Chem. Engr., Göteborg, Sweden]
- Vol. 68 No. 2-3 (1997) 95–102
 ESPITALIER, F., BISCANS, B., LAGUÉRIE, C., Particle design. Part A: Nucleation kinetics of ketoprofen [Ecole Natl. Super. Ingn. Genie Chim., CNRS, Toulouse, France]
- Vol. 68 No. 2-3 (1997) 103–114
 ESPITALIER, F., BISCANS, B., LAGUÉRIE, C., Particle design. Part B: Batch quasi-emulsion process and mechanism of grain formation of ketoprofen [Ecole Natl. Super. Ingn. Genie Chim., CNRS, Toulouse, France]
- Vol. 68 No. 2-3 (1997) 115–122
 SONG, B.H., KIM, Y.T., KIM, S.D., Circulation of solids and gas bypassing in an internally circulating fluidized bed with a draft tube [Korea Adv. Inst. Sci. & Technol., Dept. Chem. Engr., Taejeon, South Korea]
- Vol. 68 No. 2-3 (1997) 123–130
 EI MOUSSAOUITI, M., BOISTELLE, R., BOUHAOUSS, A., KLEIN, J.P., Crystallization of calcium sulphate hemihydrate in concentrated phosphoric acid solutions [Centr. Rech. Croiss. Crist., CRMC2-CNRS, Marseille, France; Univ. Mohammed V.,

- Fac. Sci., Lab. Chim.-Phys., Rabat, Morocco; Univ. Lyon, Lab. Automat., Villeurbanne, France]*
- Vol. 68 No. 2-3 (1997) 131–138
 RODIER, E., DODDS, J.A., LECLERC, D., CLÉMENT, G., Changes in fluid residence time distribution during deep-bed filtration [*Ecole Natl. Super. Ind. Chim., CNRS, Nancy, France; Ecole Mines Albi, Albi, France; Centre Rech. Voreppe, Voreppe, France]*
- Vol. 68 No. 2-3 (1997) 139–143
 LUO, G.S., NIANG, M., SCHAEZEL, P., Separation of ethyl *tert*-butyl ether-ethanol by combined pervaporation and distillation [*Tsing Hua Univ., Dept. Chem. Engn., Beijing, P.R. China; Inst. Univ. Technol., Dept. Génie Chim., Caen, France]*
- Vol. 68 No. 2-3 (1997) 145–155
 ODUOZA, C.F., WRAGG, A.A., PATRICK, M.A., The effects of a variety of wall obstructions on local mass transfer in a parallel plate electrochemical flow cell [*Univ. Exeter, Sch. Engn., Exeter, Devon, England]*
- Vol. 68 No. 2-3 (1997) 157–163
 HWANG, C.Y.J., PAL, R., Flow of two-phase oil/water mixtures through sudden expansions and contractions [*Univ. Waterloo, Dept. Chem. Engn., Waterloo, ON, Canada]*
- Vol. 68 No. 2-3 (1997) 165–172
 CHEN, Z., PRÜSS, J., MEIER, D., WARNECKE, H.-J., Modelling and simulation of extraction of oligomer from granular polymers [*Univ. Paderborn, Chem. Engn., Paderborn, Germany; Univ. Martin Luther, Fb. Math. Inf., Halle, Germany]*
- Vol. 68 No. 2-3 (1997) 173–187
 DUFOUR, J., MARRÓN, J.O., NEGRO, C., LATORRE, R., FORMOSO, A., LÓPEZ-MATEOS, F., Mechanism and kinetic control of the oxyprecipitation of sulphuric liquors from steel pickling [*Univ. Complutense Madrid, Dept. Chem. Engn., Madrid, Spain; Natl. Ctr. Metal. Res., Dept. Prim. Metal. Recycl., Madrid, Spain]*
- Vol. 68 No. 2-3 (1997) 189–196
 ABDEL-FATTAH, A.F., OSMAN, M.Y., ABDEL-NABY, M.A., Production and immobilization of cellobiase from *Aspergillus Niger* A20 [*Natl. Res. Ctr., Dept. Chem. Nat. & Microb. Prod., Cairo, Egypt]*
- Vol. 68 No. 2-3 (1997) 197–205
 OSTROWSKI, K.L., LUKE, S.P., WILLIAMS, R.A., Simulation of the performance of electrical capacitance tomography for measurement of dense phase pneumatic conveying [*Univ. Exeter, Camborne Sch. Mines, Redruth, Cornwall, England]*
- Vol. 68 No. 2-3 (1997) 207–210
 STANEK, V., JIRICNY, V., Experimental observation of pressure drop overshoot following an onset of gas flow in counter-current beds [*Acad.Sci. Czech Rep., Inst. Chem. Proc. Fundamentals, Prague, Czech Rep.]*
- Vol. 69 No. 1 (1998) 1–5
 WANG, T.J., JIN, Y., WANG, Z.W., YU, Z.Q., A study of the morphology of the goethite crystallization process [*Tsing Hua Univ., Dept. Chem. Engn., Beijing, P.R. China]*
- Vol. 69 No. 1 (1998) 7–20
 BALDYGA, J., ROZEN, A., MOSTERT, F., A model of laminar micromixing with application to parallel chemical reactions [*Warsaw Univ. Techn., Warsaw, Poland; DSM Research, Geleen, Netherlands]*
- Vol. 69 No. 1 (1998) 21–25
 LASTOCHKIN, D., FAVELUKIS, M., Bubble growth in a variable diffusion coefficient liquid [*Technion Israel Inst. Technol., Dept. Chem. Engn., Haifa, Israel; Natl. Univ. Singapore, Dept. Chem. Engn., Singapore, Singapore]*
- Vol. 69 No. 1 (1998) 27–38
 KIRANOUDIS, C.T., Design and operational performance of conveyor-belt drying structures [*Natl. Techn. Univ., Dept. Chem. Engn., Athens, Greece]*
- Vol. 69 No. 1 (1998) 39–45
 PETRESCU, S., FECHETE, I., CIUBOFARIU, C., Mass transfer in fixed bed solid dissolution [*Techn. Univ. Iasi, Dept. Chem. Engn., Iasi, Romania]*
- Vol. 69 No. 1 (1998) 47–52
 TAO, W.Q., TI, H.C., Transient analysis of gas pipeline network [*Natl. Univ. Singapore, Dept. Chem. Engn., Singapore, Singapore]*
- Vol. 69 No. 1 (1998) 53–61
 MIKULÁSEK, P., WAKEMAN, R.J., MARCHANT, J.Q., Crossflow microfiltration of shear-thinning aqueous titanium dioxide dispersions [*Univ. Pardubice, Dept. Chem. Engn., Pardubice, Czech Rep.; Loughborough Univ. Technol., Dept. Chem. Engn., Loughborough, Leics, England]*
- Vol. 69 No. 1 (1998) 63–67
 KYUCHOUKOV, G., KOINEV, R., On the coalescence effects in a batch mixer-settler [*Bulgarian Acad. Sci., Inst. Chem. Engn., Sofia, Bulgaria]*
- Vol. 69 No. 1 (1998) 69–81
 DEITERS, U.K., DE REUCK, K.M., Guidelines for publication of equations of state I. Pure fluids [*Univ. Cologne, Inst. Phys. Chem., Cologne, Germany; Univ. London Imperial Coll. Sci. Technol. & Med., Dept. Chem. Engn., London, England]*
- Vol. 69 No. 2 (1998) 85–91
 GAVRILESCU, M., TUDOSE, R.Z., Modelling of liquid circulation velocity in concentric-tube airlift reactors [*Chem. Pharmaceut. Res. Inst., Res. Ctr. Antibiot, Iasi, Romania; Techn. Univ. Iasi, Dept. Chem. Engn., Iasi, Romania]*
- Vol. 69 No. 2 (1998) 93–98
 SONIN, A.A., PALERMO, T., LUBEK, A., Effect of a dispersive surfactant additive on wetting and crystallisation in a system: water–oil–metal substrate. Application to gas hydrates [*Inst. Franc. Petr., Div. Phys.-Chim., Rueil-Malmaison, France]*
- Vol. 69 No. 2 (1998) 99–104
 LEE, J.B., KIM, S.D., NO_x reduction by hydrazine in a pilot-scale reactor [*Korea Adv. Inst. Sci. Techn., Dept. Chem. Engn., Taejeon, South Korea]*
- Vol. 69 No. 2 (1998) 105–110
 GONZÁLEZ, J., AGUILAR, R., ALVAREZ-RAMÍREZ, J., BARRÓN, M.A., Nonlinear regulation for a continuous bioreactor via a numerical uncertainty observer [*Univ. Autonoma Metropolitana Azcapotzalco, Div. Cienc., Mexico City, Mexico]*
- Vol. 69 No. 2 (1998) 111–117
 DUAN, G., CHING, C.B., SWARUP, S., Kinetic and equilibrium study of the separation of propranolol enantiomers by high performance liquid chromatography on a chiral adsorbent [*Natl. Univ. Singapore, Dept. Chem. Engn., Singapore, Singapore]*
- Vol. 69 No. 2 (1998) 119–126
 NICOLELLA, C., ROVATTI, M., Mathematical modeling of monolith reactors for photocatalytic oxidation of air contaminants [*Univ. Genoa, Inst. Sci. & Technol. Chem. Engn., Genoa, Italy]*

Vol. 69 No. 2 (1998) 127–133

WURZEL, T., MLECZKO, L., Engineering model of catalytic partial oxidation of methane to synthesis gas in a fluidized-bed reactor [*Ruhr Univ. Bochum, Bochum, Germany*]

Vol. 69 No. 2 (1998) 135–143

ZHANG, J., MORRIS, A.J., MARTIN, E.B., KIPARISSIDES, C., Prediction of polymer quality in batch polymerisation reactors using robust neural networks [*Univ. Newcastle upon Tyne, Dept.*

Chem. & Proc. Engn., Newcastle upon Tyne, Tyne & Wear, England; Aristotle Univ. Thessaloniki, Dept. Chem. Engn., Thessaloniki, Greece]

Vol. 69 No. 2 (1998) 145–148

SULAIMAN, M.Z., SULAIMAN, N.M., YIH, L.S., Limiting permeate flux in the clarification of untreated starfruit juice by membrane ultrafiltration [*Univ. Malaya, Dept. Chem. Engn., Kuala Lumpur, Malaysia*]