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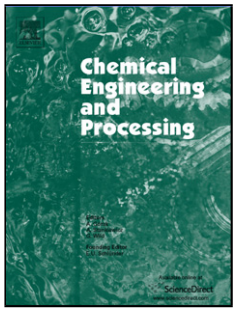

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Author: Farzad Lali

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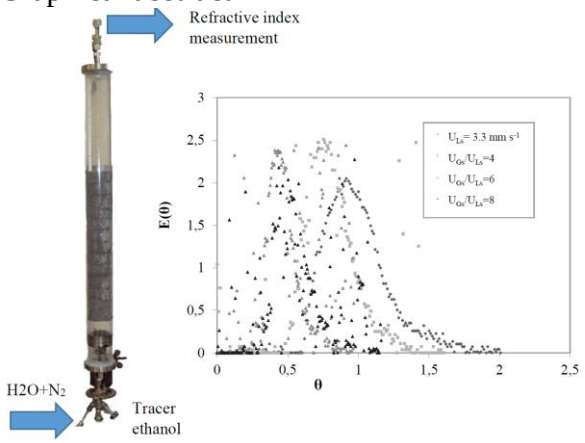
A hydrodynamic study of cylindrical metal foam packings: residence time distribution and two phase pressure drop

Farzad Lali[a,b]

a Institute of chemical process fundamentals of the Czech academy of sciences, Rozvojova 2/135, 165 02 Prague, Czech Republic, phone: +420 220 390 233, fax:220920661,220920649, E-Mail: lali@icpf.cas.cz
b Technische Universität Dresden, Münchner Platz 3, 01062 Dresden, Germany

Graphical abstract



Research highlights:

- Liquid downward flow through foam packing showed poor spreading
- Measurement of the axial residence time distribution in upward flow through foams
- two phase pressure drop through foams in an upward flow

Nomenclature

Bo	$[u_z\ l_R\ D_{ax}^{-1}]$	Bodenstein number
C_j	[kmol m^{-3}]	molar concentration of species j
C_j^0	[kmol m^{-3}]	molar concentration of species j before inlet
C_j^{in}	[kmol m^{-3}]	molar concentration of species j at inlet
C_j^{out}	[kmol m^{-3}]	molar concentration of species j at outlet
C_T	[kmol m^{-3}]	tracer concentration
D_{ax}	[$m^2\ s^{-1}$]	axial dispersion coefficient
d_R	[m]	reactor diameter
E(t)		probability density function of residence times

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