

# Publications

## Publications 2018

### EDITEUR

Cutting-Edge Technology for Carbon Capture, Utilization, and Storage ; K Ballerat-Busserolles, Y Wu, JJ Carroll editors ; John Wiley & Sons

### CHAPITRE DE LIVRE

Yohann Coulier, William Ravisy, J-Michel Andanson, J-Yves Coxam, Karine Ballerat-Busserolles Modelling and Experiments for CO<sub>2</sub> capture processes understanding, in Cutting-Edge Technology for Carbon Capture, Utilization, and Storage ; K Ballerat-Busserolles, Y Wu, JJ Carroll editors ; John Wiley & Sons, Wiley Scrivener Publishing, ISBN : 978-1-119-36348-4

### REVUES INTERNATIONALES AVEC COMITÉ DE LECTURE

Qirong Wang, Christine Taviot-Gueho, Fabrice Leroux, Karine Ballerat-Busserolles, Clémence Bigot, Guillaume Renaudin

Superplasticizer to layered calcium aluminate hydrate interface characterized using model organic molecules, Cement and Concrete Research, 110, 2018, 52-69, DOI:10.1016/j.cemconres.2018.05.005.

## Publications 2017

### REVUES INTERNATIONALES AVEC COMITÉ DE LECTURE

Y. Coulier, A. R. Lowe, J.-Y. Coxam, and K. Ballerat-Busserolles Thermodynamic Modeling and Experimental Study of CO<sub>2</sub> Dissolution in New Absorbents for Post-Combustion CO<sub>2</sub> Capture Processes. ACS Sustainable Chemistry & Engineering 2018 6 (1), 918-926 ; DOI : 10.1021/acssuschemeng.7b03280

Jerome Corvisier, Martha Hajiw, Elise El Ahmar, Christophe Coquelet, Jérôme Sterpenich, Romain Privat, Jean-Noël Jaubert, Karine Ballerat-Busserolles, Jean-Yves Coxam, Pierre Cézac, François Contamine, Jean-Paul Serin, Véronique Lachet, Benoit Creton, Marc Parmentier, Joachim Tremosa, Philippe Blanc, Laurent André, Louis de Lary, Eric C. Gaucher.

Simulations of the Impact of Co-injected Gases on CO<sub>2</sub> Storage, the SIGARRR Project : Processes and Geochemical Approaches for Gas-water-Salt Interactions Modeling, Energy Procedia, 114, 2017,3322-3334 ; DOI:10.1016/j.egypro.2017.03.1464.

D. Almantariotis, A. S. Pensado, H. Q. N. Gunaratine, C. Hardacre, A. A. H. Padua, J.-Y. Coxam, M. F. Costa Gomes\* Influence of fluorination on the solubilities of carbon dioxide, ethane and nitrogen in 1-n-Fluoro-Alkyl-3-Methylimidazolium Bis(n-Fluoroalkylsulfonyl)amide ionic liquids. *J. Phys. Chem. B*, 2017, 121, 426-436.

Y. Coulier\*, A. R. Lowe, A. Moreau, K. Ballerat-Busserolles, J.-Y. Coxam Liquid-liquid phase separation of amine - H<sub>2</sub>O - CO<sub>2</sub> systems : New methods for key data. *Fluid Phase Equilibria*, 2017, 431, 1-7.

C. McGregor, O. Fandino, J. Cox, K. Ballerat-Busserolles, P. R. Tremaine\* Standard partial molar heat capacities and volumes of aqueous N-methylpiperidine and N-methylpiperidinium chloride from 283 K to 393 K. *Journal of Chemical Thermodynamics*, 2017, 113, 377-387.

A. Lach\*, K. Ballerat-Busserolles, L. Andre, M. Simond, A. Lassin, P. Cezac, J-C. Neyt, J-P. Serin Experimental data and modelling of solution density and heat capacity in the Na-K-Ca-Mg-Cl-H<sub>2</sub>O system up to 353.15 K and 5 mol·kg<sup>-1</sup> ionic strength. *Journal of Chemical and Engineering Data*, 2017, 62, 3561–3576.

## Publications 2016

### CHAPITRES DE LIVRE :

Karine Ballerat-Busserolles, Alexander R. Lowe, Yohann Coulier, and J-Y. Coxam  
Chapter 3 : Thermodynamic Approach of CO<sub>2</sub> Capture, Combination of Experimental Study and Modeling, pp 29-37, in *Acid Gas Extraction for Disposal and Related Topics*, Ying Wu, John J. Carroll, Weiyao Zhu ed., Wiley Scrivener Publishing, ISBN : 978-1-118-93861-4

Karine Ballerat-Busserolles, Alexander R. Lowe, Yohann Coulier, and J-Y. Coxam  
Chapter 6 : Calorimetry in Aqueous Solutions of Demixing Amines for Processes in CO<sub>2</sub> Capture, , pp 29-37, in *Acid Gas Extraction for Disposal and Related Topics*, Ying Wu, John J. Carroll, Weiyao Zhu ed., Wiley Scrivener Publishing, ISBN : 978-1-118-93861-4

### REVUES INTERNATIONALES AVEC COMITÉ DE LECTURE

Yohann Coulier, Alexander lowe, P. Tremaine, J-Y. Coxam, K. Ballerat-Busserolles  
Absorption of CO<sub>2</sub> in aqueous solutions of 2-methylpiperidine : heats of solution and modeling, *International Journal of Greenhouse Gas Control*, 2016, 47, 322-329.

Xiangqian Meng, Karine Ballerat-Busserolles, Pascale Husson, Jean-Michel Andanson  
Impact of Water on the Melting Temperature of Urea + Choline Chloride Deep Eutectic Solvent, *New Journal of Chemistry*, ASAP, 2016, 40, 4492-4499.

Hugues Arcis, Yohann Coulier, Jean-Yves Coxam

Thermodynamic and Experimental Study of the Energetic Cost Involved in the Capture of Carbon Dioxide by Aqueous Mixtures of Commonly Used Primary and Tertiary Amines *Environmental Science and Technologies*, Article ASAP, 2016, 50, 489-495.

## Publications 2015

Yohann Coulier, Karine Ballerat-Busserolles, Javier Mesones, Alexander Lowe, Jean-Yves Coxam  
Excess Molar Enthalpies and Heat Capacities of 2-Methylpiperidine–Water and N-Methylpiperidine–Water Systems of Low to Moderate Amine Compositions *Journal of Chemical & Engineering Data*, 2015, 60:6, 1563–1571

Zaitseva A., Laavi H., Ojala L., Coxam J-Y., Ballerat-Busserolles K., Pokki J-P., Alopaeus V.  
Isothermal and Isobaric Vapor–Liquid Equilibrium and Excess Molar Enthalpy of the Binary Mixtures of 2-Methoxy-2-methylpropane+ 2-Methyl-2-butanol or+ 2-Butanol. *Journal of Chemical & Engineering Data*, 2015, 60:9, 2655-2664

## Publications 2014

J Corvisier, E El Ahmar, C Coquelet, J Sterpenich, R Privat, J-N Jaubert, K Ballerat-Busserolles, J-Y Coxam, P Cézac, F Contamine, J-P Serin, V Lachet, B Creton, M Parmentier, P Blanc, L André, L De Lary, EC Gaucher imulations of the Impact of Co-injected Gases on CO<sub>2</sub> Storage, the SIGARRR Project : First Results on Water-gas Interactions Modeling *Energy Procedia*, 63, 3160-3171

Ballerat-Busserolles, K. ; Simond, M.R. ; Coulier, Y. ; Coxam J-Y. Protonation of alkanolamines and cyclic amines in water at temperatures from 293.15 to 373.15 K. *PURE AND APPLIED CHEMISTRY*, 86:2 , 233-243, 2014.

M. R. Simond, K. Ballerat-Busserolles, J-Y. Coxam, and A.A. H. Padua. Interactions of Alkanolamines with Water : Excess Enthalpies and Hydrogen Bonding. *J. Chem. Theory Comput.*, 2014, 10 (6), pp 2471–2478, DOI : 10.1021/ct5002158.

H. Arcis, Y. Coulier, K. Ballerat-Busserolles, L. Rodier, and J-Y Coxam. Enthalpy of Solution of CO<sub>2</sub> in Aqueous Solutions of Primary Alkanolamines : A Comparative Study of Hindered and Nonhindered Amine-Based Solvents. *Industrial & Engineering Chemistry Research*, 2014, 53(27), pp 10876, DOI 10.1021/ie501589j.

## Publications 2013

CHAPITRE DE LIVRE

J-Y. Coxam and K. Ballerat-Busserolles. CO<sub>2</sub> Capture in Industrial Effluents. Calorimetric Studies, in Calorimetry and Thermal Methods in Catalysis, pp 481 , A. Auroux (ed.), Springer Series in Materials Science 154, DOI : 10.1007/978-3-642-11954-5\_14, © Springer-Verlag Berlin Heidelberg 2013.

## ARTICLES DANS DES REVUES AVEC COMITÉ DE LECTURE

Diana Koschel, Jean-Yves Coxam and Vladimir Majer. Enthalpy and Solubility Data of H<sub>2</sub>S in Aqueous Salt Solutions at Conditions of Interest for Geological Sequestration. Ind.Eng.Chem.Res., (2013), 52 (40), pp 14483–14491.

Simond M. R., Ballerat-Busserolles K., Coulier Y., Coxam J.-Y.. Flow calorimetry : a technique for caracterisation of liquid-liquid and liquid-gas systems. MATEC Web of Conferences, (2013) 3 1024.

Coulier Y., Simond M. R., Ballerat-Busserolles K., Coxam J.-Y. Caractérisation des amines démixantes pour l'absorption du CO<sub>2</sub> ». Récents Progrès en Génie des Procédés, (2013) 104.

Pourtier E., Ballerat-Busserolles K., Majer V., Šedlbauer J. Standard molar volumes and heat capacities of aqueous solutions of sodium trifluoromethanesulfonate at temperatures up to 573 K and pressures to 28 MPa. J. Chem. Thermodynamics , (2013) 57, 416-429.

Simond M. R., Ballerat-Busserolles K., Coxam J.-Y., Padua A. A. H. Etude des interactions dans les mélanges eau+alcanolamine par simulation moléculaire. Récents Progrès en Génie des Procédés, (2013) 104.

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