Format Specifications for Abstract Submission
EQUIFASE 2006

The content of the abstracts will be the basis for acceptance of papers at the conference. Abstracts should not exceed 250 words. The deadline for abstract submission is March 27, 2006. The abstracts should be submitted on-line on the EQUIFASE 2006 web site.

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It is strongly recommend that you avoid using non-ASCII symbols, and that you avoid including equations in your abstract. Figures cannot be included in abstracts.

Abstract Layout

Font: All text is Times New Roman. The title is 12 point, authors and their affiliations are 10 point, and body text is 10 point.

Title: The title should be bold, centered, and start all major words with capital letters (except words like “of”, “and”, “at”, “in”, etc.)

Author(s): The list of authors should be centered, names of multiple authors with a common affiliation are separated by commas, with “and” used before the last author. For each author list first name and middle initials (no spaces between multiple initials) followed by last name (surname), one space separating leading initials from last name. Authors’ affiliations begin immediately on the following line. One blank line (double line-space) separates author information for authors with different affiliations. The list of authors should indicate the author to whom correspondence should be addressed.

Author’s Affiliation (Company/University): Affiliations should be centered, with complete addresses including country. Continue on multiple lines as needed. Affiliations immediately follow on the next line after each author’s name, or after a comma-separated list of authors sharing a common affiliation. The email address of the author to whom correspondence should be addressed (or an email address at which this author can be reached) should be included as the last line of that author’s address.

Body Text: Text should be single-spaced paragraphs, with no tabs, and double-spacing between paragraphs. Single spaces should be used between sentences, after each period. The text should be fully justified. Abstracts should not exceed 250 words.

Keywords: Authors should provide a list of keywords (up to six) that describes the presented paper. Commas should separate keywords.

References: Sequential references are indicated in the text by numbers in square brackets, for example [1]. All references are listed at the bottom, separated from the abstract by a single blank line, again with numbers in square brackets. If text wraps to a second line, this line should be tabbed to the same tab stop as the first author’s name, so that it lines up under that name. Authors’ names are listed using first and middle initials (no spaces between multiple initials) followed by last name (surname), one space separating leading initials from last name. Authors are separated by commas, and a comma following the last author. This is followed by the Journal Name, a single space with no comma, the volume number followed by a comma, the initial page number, a single space with no comma, the year in parentheses, and ending with a period.

Footnotes: Footnotes in abstracts must be avoided.

Paper: - LETTER (216 x 279 mm).

Margins: - up and down: 2 cm, left and right: 2.5 cm

An example abstract showing the desired format is shown on the next page.

VII Iberoamerican Conference
on Phase Equilibria and Fluid Properties for Process Design
Morelia, Michoacán (MÉXICO) October 21th - 25th, 2006

Experimental Vapor-Liquid Equilibria for the Carbon Dioxide + Octane, and Carbon Dioxide + Decane Systems from 313 to 373 K

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The study of systems containing carbon dioxide + hydrocarbon is important for the enhanced oil recovery, at the chemical, and petrochemical industries. We are focused on the application of supercritical carbon dioxide to extract sulfur compounds from fuels. In the development of an extraction process are involved multicomponent mixtures. For the modeling of these systems the interaction parameters are required for all the binary pairs presented. Unfortunately, the determination of these interaction parameters requires of high accurate experimental data over a wide range of temperatures. Binary systems involving carbon dioxide + sulfur compound, and carbon dioxide + sulfur compound + alkane have been already reported in the literature [1,2]. This work is focused in the study of the phase behavior of the carbon dioxide + alkane mixtures as complement of the previous papers [1,2].

Vapor-liquid equilibria for the carbon dioxide + octane, and carbon dioxide + decane systems were measured at temperatures from 313 to 373 K. The experimental data were obtained using an apparatus based on the static-analytic method [3]. Data from the literature [4,5] were compared with the results obtained in this work. Good agreement was found.

Keywords: Vapor-liquid equilibria, carbon dioxide, octane, decane

[1] O. Elizalde-Solis, L.A. Galicia-Luna, Fluid Phase Equilib. 230, 51 (2005).
[2] O. Elizalde-Solis, L.A. Galicia-Luna, Ind. Eng. Chem. Res. 44, 5757 (2005).
[3] L.A. Galicia-Luna, A. Ortega-Rodríguez, D. Richon, J. Chem. Eng. Data 45, 265 (2000).
[4] W.L. Weng, M.J. Lee, J. Chem. Eng. Data 37, 213 (1992).

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The Solubility, Compressed Liquid and Saturation Density of Phenol in Supercritical CO_2

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Phenol has been used as herbicide. It is a common pollutant of soils and residual industrial water. Phenol has health effects even at very low concentration. Remediation of polluted soils and residual water can be made using supercritical fluid technology. Some previous information about phase equilibria and volumetric properties is necessary. In this work, the solubility of phenol was measured using an apparatus based on the static-synthetic method connected to a vibrating tube densitometer. The compressed liquid density and the saturation density can be measured with this apparatus. The apparatus was tested previously with the CO_2 + naphthalene system [1]. Measurements were carried out at temperatures from 313 to 333 K and pressures up to 25 MPa.

The determination of the saturation density can be used to improve the correlation of the solubility using semi-empirical models [1]. Solubility data were correlated using an expression based on the dilute solution theory.

Keywords: Solubility, Phenol, Saturation, Density, CO_2

[1] Zúñiga-Moreno, L.A. Galicia-Luna, L.E. Camacho-Camacho, Fluid Phase Equilib. 234, 151 (2005).

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Thermodynamic Modeling of the Phase Behavior of Binary Systems of Ionic Liquids and Carbon Dioxide with the GC-EoS

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A promising separation technique for ionic liquids is the extraction of solutes with supercritical carbon dioxide (CO_2). By employing CO_2 for product recovery, it is not only possible to quantitatively extract the organic solute from the ionic liquid, but also to eliminate the problem of cross-contamination; CO_2 can easily be removed by simple depressurization. In the case of extraction with supercritical CO_2, knowledge of the phase behavior of binary systems of ionic liquids and CO_2 is essential for evaluating the viability of the separation process.
Considering the large variety of ionic liquids that may be formed, methods for the prediction of phase equilibria involving ionic liquids are needed. In this work, an equation of state approach is used for the modeling of the phase behavior of binary systems of ionic liquids and CO_2. The Group Contribution Equation of State (GC-EOS) developed by Skjold-Jørgensen [1] is used to predict the phase behavior of binary systems consisting of CO_2 and
ionic liquids of the homologous family 1-alkyl-3-methylimidazolium hexafluorophosphate. These results show the capability of the GC-EOS model to describe the phase behavior of binary systems of ionic liquids and CO_2 and its potential for modeling supercritical processes involving ionic liquids.

[1] S. Skjold-Jmgensen, Ind. Eng. Chem. Res. 27, 110 (1988).