



## **PROSCIBA 2013**

**III IBEROAMERICAN CONFERENCE ON SUPERCRITICAL FLUIDS**

## **PROGRAM**

## Monday, April 1<sup>st</sup> 2013

- 10:00-16:00    **REGISTRATION TO PROSCIBA 2013**  
Cartagena de Indias Convention Center
- 9:00-11:00    **Preconference Course A**  
*Recrystallization and Encapsulation of Bioactive Compounds in Supercritical Medium*  
Instructor: Dr. Jose Vladimir de Oliveira  
Place: Casa de Bolívar, Calle San Agustín 6 – 49, Cartagena de Indias  
Cost: Free. Registration needed (ShortCourses@prosciba2013.com)
- 11:00-13:00    **Preconference Course B**  
*Modeling of solid substrates extraction*  
Instructor: Dr. José Manuel del Valle  
Place: Casa de Bolívar, Calle San Agustín 6 – 49, Cartagena de Indias  
Cost: Free. Registration needed (ShortCourses@prosciba2013.com)
- 13:00-15:00    **Preconference Course C**  
*Current and potential application of supercritical fluid extraction in our biodiversity*  
Instructor: Prof. Luis Ignacio Rodríguez Varela  
Place: Casa de Bolívar, Calle San Agustín 6 – 49, Cartagena de Indias  
Cost: Free. Registration needed (ShortCourses@prosciba2013.com)
- 15:40-16:20    **INAUGURAL CEREMONY**  
Cartagena de Indias Convention Center – Pegasus Room
- 16:20-17:00    Inaugural Lecture  
**Supercritical fluids in Latin America: Past, present and future trends**  
M. Angela Meireles  
University of Campinas (UNICAMP), BRAZIL
- 17:00-19:00    **WELCOME RECEPTION**  
Cartagena de Indias Convention Center – Claustro de las ánimas  
(Cloister of the souls plaza)

**Tuesday, April 2<sup>nd</sup> 2013**

**Oral presentations: Pegasus Room – Convention Center**

**Poster presentations and exhibition: Cloister of the souls plaza – Convention Center**

**Session 1: Fundamentals**

Chair: K. Byrappa, University of Mysore, INDIA

- 8:20-9:00 *Keynote presentation*  
**Supercritical Fluid Extraction at High Pressures (>700 bar):  
Theoretical Considerations and Practical Applications**  
Jerry W. King  
University of Arkansas, USA
- 9:00-9:20 (T1-06) **Dynamic measurement of the equilibrium partition of tomato  
extract between supercritical CO<sub>2</sub> and pretreated tomato**  
Freddy A. Urrego<sup>1</sup>, José M. del Valle<sup>1</sup>, María José Cocero<sup>2</sup>, Juan C. de la  
Fuente<sup>3</sup>  
(<sup>1</sup>) Pontificia Universidad Católica de Chile, CHILE  
(<sup>2</sup>) Universidad de Valladolid, SPAIN  
(<sup>3</sup>) Universidad Técnica Federico Santa María, CHILE
- 9:20-9:40 (T1-12) **Modelling of carotenoids solubility in supercritical carbon  
dioxide using quantitative structure-property relationships**  
Loreto Valenzuela<sup>1</sup>; José Manuel del Valle<sup>1</sup>; Juan de la Fuente<sup>2</sup>.  
(<sup>1</sup>) Pontificia Universidad Católica de Chile, CHILE  
(<sup>2</sup>) Universidad Técnica Federico Santa María, CHILE
- 9:40-10:00 (T1-18) **Development and applications of a two-parameter cohesion  
function for cubic equations of state**  
Sylvana Derjani-Bayeh, Freddy L. Figueira and Claudio Olivera-Fuentes<sup>\*</sup>  
Universidad Simón Bolívar, VENEZUELA
- 10:00-10:20 Coffee Break

**Session 2: Fundamentals (2) and Applications**

Chair: Andreas Martin, Universität Rostock, GERMANY

- 10:20-11:00 *Keynote presentation*  
**The use of pressurized fluids: from extraction to synthesis**  
Marleny Saldaña  
University of Alberta, CANADA

- 11:00-11:20 (T1-22) **Volumetric properties of mixtures of ionic liquid [EMIM]Ac with CO<sub>2</sub> as potential processing fluids for lignocellulosic materials at high pressures**  
Heather Grandelli and Erdogan Kiran  
Virginia Tech, USA
- 11:20-11:40 (T2-03) **Simple mathematical adsorption models for supercritical extraction of natural matter**  
Camilo Pardo, Manuel Velásquez and Gustavo Bolaños  
Universidad del Valle, COLOMBIA
- 11:40-12:00 (T2-16) **Determination of phase equilibrium of *Casearia sylvestris* extract + ethanol + CO<sub>2</sub> system and encapsulation using supercritical anti-solvent process**  
Patrícia Benelli<sup>1</sup>, Sibe R. Rosso Comin<sup>1</sup>, José Vladimir de Oliveira<sup>1</sup>,  
Rozangela C. Pedrosa<sup>2</sup> and Sandra R. S. Ferreira<sup>1</sup>  
Federal University of Santa Catarina, BRAZIL
- 12:00-13:40 **Lunch – Poster viewing - exhibition**  
Claustro de las ánimas (Cloister of the souls plaza)

### Session 3: Biofuels and environmental

Chair: Marleny Saldaña, University of Alberta, CANADA

- 13:40-14:20 *Keynote presentation*  
**Bioactive particle's formation by Supercritical Fluids: examples of applications**  
Sandra Regina Salvador Ferreira  
Federal University of Santa Catarina, BRAZIL
- 14:20-14:40 (T5-07) **Catalytic hydroprocessing of lignin in supercritical ethanol**  
Andreas Martin<sup>1</sup>, Pratap T. Patil<sup>2</sup> and Udo Armbruster  
<sup>(1)</sup>Universität Rostock, GERMANY  
<sup>(2)</sup>Institute of Chemical and Engineering Sciences, SINGAPORE
- 14:40-15:00 (T5-08) **Modeling of askarel solubility in supercritical CO<sub>2</sub> aiming solid residue treatment**  
Dannielle J. Silva<sup>1\*</sup>, Ruben O. Chiavone<sup>2</sup>, Oswaldo Chiavone-Filho<sup>2</sup>,  
Camila G. Pereira<sup>2</sup> and Claudio A.O. Nascimento<sup>1</sup>  
<sup>(1)</sup> Universidade de São Paulo, BRAZIL  
<sup>(2)</sup> Universidade Federal do Rio Grande do Norte, BRAZIL

15:00-15:20 (T5-11) **Effect of inner reactor diameter on the transesterification kinetics of non-catalytic production of soybean FAEE with cosolvent addition**

Claudia Mara Trentin<sup>(1)</sup>, José Vladimir de Oliveira<sup>(2)</sup>, Márcio Antônio Mazutti<sup>(3)</sup> and Fernanda de Castilhos<sup>(3)</sup>

<sup>(1)</sup> URI, BRAZIL

<sup>(2)</sup> Universidade Federal de Santa Catarina, BRAZIL

<sup>(3)</sup> Federal University of Santa Maria, BRAZIL

15:20-18:00 **POSTER SESSION PRESENTATIONS – I**  
**Papers T1-02 to T2-56**

Posters must be mounted from 8:00 to 9:00 AM.

Locate your poster space by the poster ID.

Remove your poster at the end of the session.

## Wednesday, April 3<sup>rd</sup> 2013

Oral presentations: Pegasus Room – Convention Center

Poster presentations and exhibition: Cloister of the souls plaza – Convention Center

### Session 4: Processing

Chair: Osvaldo Chiavone-Filho,  
Universidade Federal do Rio Grande do Norte, BRAZIL

- 8:20-9:00 *Keynote presentation*  
**Supercritical CO<sub>2</sub> Extraction of Biological Substrates: from the Laboratory to the Industrial Application**  
José Manuel del Valle  
Pontificia Universidad Católica de Chile, CHILE
- 9:00-9:20 (T2-04) **Extractability of *Narcissus pseudonarcissus* alkaloids with supercritical carbon dioxide**  
Orchidea Rachmaniah<sup>(1,2)</sup>, Rob Verpoortec<sup>(3)</sup>, and Geert-Jan Witkamp<sup>(2)</sup>  
<sup>(1)</sup> Institute Technology of Sepuluh Nopember, INDONESIA  
<sup>(2)</sup> Delft University of Technology, THE NETHERLANDS  
<sup>(3)</sup> Leiden University, THE NETHERLANDS
- 9:20-9:40 (T2-23) **Supercritical carbon dioxide extraction of oleoresin from malagueta pepper (*Capsicum frutescens* L.) enhanced by ultrasound**  
Philipe dos Santos, Ana C. de Aguiar, Camila A. Rezende and Julian Martínez  
University of Campinas (UNICAMP), BRAZIL
- 9:40-10:00 (T2-34) **Impact of injection solvents on efficiency in supercritical fluid chromatography**  
Victor Abrahamsson, and Margareta Sandahl  
Lund University, SWEDEN
- 10:00-10:20 Coffee Break

### Session 5: Processing (2)

Chair: Claudio Olivera-Fuentes, Universidad Simón Bolívar, VENEZUELA

- 10:20-10:40 (T2-54) **High-pressure extraction of jojoba oil with mixed CO<sub>2</sub>/propane solvents**  
C. Palla, P. Hegel, S. Pereda, S. Bottini and E. Brignole  
PLAPIQUI - Universidad Nacional del Sur, ARGENTINA
- 10:40-11:00 (T2-55) **High pressure fractionation of fatty esters and acylglycerols**  
G. Soto, G. Mabe, P. Hegel, S. Pereda and E.A. Brignole  
PLAPIQUI - Universidad Nacional del Sur, ARGENTINA

- 11:00-11:20 (T2-58) **Inactivation kinetics of *vibrio parahaemolyticus* naturally occurring in oysters using supercritical carbon dioxide treatment**  
Katherine Helena Oliveira de Matos<sup>1,2</sup>, Lindomar Alberto Lerin<sup>2</sup>, Douglas Soares<sup>2</sup>, Arthur Smânia<sup>2</sup>, José Vladimir de Oliveira<sup>2</sup> and Alcilene Rodrigues Monteiro<sup>2</sup>  
<sup>(1)</sup> Serviço Nacional De Aprendizagem Industrial –SENAI, BRAZIL  
<sup>(2)</sup> Federal University of Santa Catarina – UFSC, BRAZIL
- 11:20-11:40 (T2-59) **Recovery of carotenes from agroindustrial byproducts through clean extraction techniques: Supercritical fluid extraction and ultrasound assisted extraction**  
Luz María Alzate, Duban González and Julian Londoño-Londoño  
Corporación Universitaria Lasallista, COLOMBIA
- 11:40-13:40 **Lunch – Poster viewing - exhibition**  
Claustro de las ánimas (Cloister of the souls plaza)

### Session 6: Processing (3)

Chair: Selva Pereda, PLAPIQUI-Universidad Nacional del Sur, ARGENTINA

- 13:40-14:20 *Keynote presentation*  
**Green processes to extract bioactives from natural sources**  
Elena Ibañez  
Institute of Food Science Research (CIAL), SPAIN
- 14:20-14:40 (T2-71) **Hydrothermal manufacturing of nanomaterials. Reactor computational fluid dynamic modeling**  
Fidel Mato, José B. Sierra, Esther Alonso, María José Cocero and Alexander Navarrete  
University of Valladolid, SPAIN
- 14:40-15:00 (T2-84) **Supercritical fluid extracts from tamarillo (*Solanum betaceum* SENDTN) epicarp and its application as protectors against lipid oxidation of cooked beef meat**  
Henry I. Castro-Vargas<sup>(1)</sup>, Patricia Benelli<sup>(2)</sup>, Sandra R.S. Ferreira<sup>(2)</sup> and Fabián Parada-Alfonso<sup>(1)</sup>  
<sup>(1)</sup> Universidad Nacional de Colombia, COLOMBIA  
<sup>(2)</sup> Universidade Federal de Santa Catarina, BRAZIL
- 15:00-17:30 **POSTER SESSION PRESENTATIONS – II**  
**Papers T2-57 to T5-18**  
Posters must be mounted from 8:00 to 9:00 AM.  
Locate your poster space by the poster ID.  
Remove your poster at the end of the session.

17:30-18:30 **Sightseeing- The Cartagena defensive walls**  
Sunset seeing from the walls – social  
Cameras recommended



**Thursday, April 4<sup>th</sup> 2013**

**Oral presentations: Pegasus Room – Convention Center**

**Session 7: Reactions and emerging applications**

Chair: Julian Martinez,  
Universidade Estadual de Campinas (UNICAMP), BRAZIL,

- 8:20-9:00 *Keynote presentation*  
**Process Intensification by Supercritical Water Technologies**  
María José Cocero  
University of Valladolid, SPAIN
- 9:00-9:20 (T3-01) **Production of chitin-glucan complexes from *Aspergillus niger* biomass using subcritical water**  
Jaime A. García, Laura Ordóñez and Gustavo Bolaños  
Universidad del Valle, COLOMBIA
- 9:20-9:40 (T3-02) **Mechanical action in CO<sub>2</sub> dry cleaning**  
Stevia Sutanto<sup>(1)</sup>, Maaïke van Roosmalen<sup>(2)</sup> and Geert Jan Witkamp<sup>(1)</sup>  
<sup>(1)</sup> Technical University of Delft, THE NETHERLANDS  
<sup>(2)</sup> FeyeCon Carbon Dioxide Technologies, THE NETHERLANDS
- 9:40-10:00 (T3-04) **Separation of soybean oil from organic solvents using polymeric and ceramic membranes**  
Marcus V. Tres<sup>1</sup>, Jonas R. M. de Melo<sup>1</sup>, Marco Di Luccio<sup>2</sup> and J. Vladimir de Oliveira<sup>2</sup>  
<sup>(1)</sup> Universidade Regional Integrada (URI), BRAZIL  
<sup>(2)</sup> Universidade Federal de Santa Catarina (UFSC), BRAZIL
- 10:00-10:20 Coffee Break

**Session 8: Emerging applications and materials**

Chair: Julian Martinez,  
Universidade Estadual de Campinas (UNICAMP), BRAZIL,

- 10:20-11:00 *Keynote presentation*  
**Enzyme treatment and application in compressed fluid medium**  
Jose Vladimir de Oliveira  
Federal University of Santa Catarina, BRAZIL

- 11:00-11:20 (T3-07) **Semicontinuous hydrolysis of defatted pressed palm fiber in subcritical water**  
Fiorella P. Cardenas-Toro, Tania Forster-Carneiro and M. Angela A. Meireles  
University of Campinas (UNICAMP), BRAZIL
- 11:20-11:40 (T4-03) **Dense carbon dioxide micronization of synthetic thyroid hormone by ARISE process**  
S.A.B. Vieira de Melo<sup>(1)</sup>, L.T. Danh<sup>(2)</sup>, R. Mammucari<sup>(2)</sup> and N.R. Foster<sup>(2)</sup>  
<sup>(1)</sup> Universidade Federal da Bahia, BRAZIL  
<sup>(2)</sup> The University of New South Wales, AUSTRALIA
- 11:40-12:00 **CARTAGENA HISTORY AND CULTURE**  
**Excursion to Bocachica (entrance to Cartagena's bay)**  
**Lunch**  
**Trip to San Felipe Castle – Group picture**  
**Cartagena's Folklore night**

Comfortable attire is highly recommended  
Bring a hat or a cap, and sunblock

**Friday, April 5<sup>th</sup> 2013**

**Oral presentations: Pegasus Room – Convention Center**

**Session 9: Materials**

Chair: Charlotta Turner, Lund University, SWEDEN

- 8:20-9:00 *Keynote presentation*  
**Supercritical Hydrothermal Solution Processing of some high-melting Nanomaterials**  
K. Byrappa  
Materials Science Center, University of Mysore, INDIA
- 9:00-9:20 (T4-01) **Micronization of calcium salts using sub and supercritical carbon dioxide: equilibrium measurements and thermodynamic modeling**  
Isabel Mejía and Gustavo Bolaños  
Universidad del Valle, COLOMBIA
- 9:20-9:40 (T4-04) **Development of dexamethasone-loaded poly( $\epsilon$ - caprolactone)/ snp, biocomposite materials using supercritical carbon dioxide processes**  
Maria B.C. de Matos<sup>1</sup>, Ana P. Piedade<sup>1</sup>, Carmen Alvarez-Lorenzo<sup>2</sup>, Angél Concheiro<sup>2</sup>, Mara E.M. Braga<sup>1</sup> and Hermínio C. de Sousa<sup>1</sup>  
(<sup>1</sup>) University of Coimbra, PORTUGAL  
(<sup>2</sup>) Universidad de Santiago de Compostela, SPAIN
- 9:40-10:00 (T4-05) **Supercritical carbon dioxide deposition of dexamethasone onto biomimetic sol gel bioactive glasses**  
Luísa T.R. Filipe<sup>1</sup>, Mariline C. Alves<sup>1</sup>, Ana Rey-Rico<sup>2</sup>, Maria B.C. de Matos<sup>1</sup>, Ana P. Piedade<sup>1</sup>, James J. Watkins<sup>3</sup>, Carmen Alvarez-Lorenzo<sup>2</sup>, Angel Concheiro<sup>2</sup>, Mara E.M. Braga<sup>1</sup> and Hermínio C. de Sousa<sup>1</sup>  
(<sup>1</sup>) University of Coimbra, PORTUGAL  
(<sup>2</sup>) Universidad de Santiago de Compostela, SPAIN  
(<sup>3</sup>) University of Massachusetts, USA
- 10:00-10:20 Coffee Break

### Session 10: Materials (2)

Chair: Hermínio C. de Souza, University of Coimbra, PORTUGAL

- 10:20-10:40 (T4-08) **Superhydrophobic surfaces by rapid expansion of supercritical CO<sub>2</sub> containing crystallizing compounds**  
Charlotta Turner<sup>1</sup>, Irene Rodriguez-Meizoso<sup>1</sup>, Louise Ovaskainen<sup>2</sup>, Pontus Olin<sup>2</sup>, Nima Sanandaji<sup>2</sup>, Ulf Gedde<sup>2</sup> and Lars Wågberg<sup>2</sup>  
<sup>(1)</sup> Lund University, SWEDEN  
<sup>(2)</sup> Royal Institute of Technology, SWEDEN
- 10:40-11:00 (T4-13) **High pressure miscibility and volumetric properties of poly (lactide –co-glycolide) solutions in acetone and acetone + CO<sub>2</sub> fluid mixtures**  
Heather E. Grandelli and Erdogan Kiran  
Virginia Tech, USA
- 11:00-11:20 (T4-14) **Melting, crystallization and morphological modifications of biodegradable polyesters in dense carbon dioxide**  
Shinya Takahashi and Erdogan Kiran  
Virginia Tech, USA
- 11:20-11:40 **CLOSING REMARKS**
- 11:40 **Adjourn**

**POSTER SESSION I**  
**Tuesday April 2nd**  
**15:20– 18:00**

## POSTER SESSION I

April 2nd (Tuesday) 15:20 to 18:00

### TOPIC 1: FUNDAMENTALS

- T1-02 Phase equilibrium data of multicomponent system (pink shrimp residue extract + acetone + CO<sub>2</sub>)  
Rosso Comim, S.R., Proença, T.A., Mezzomo, N., Ferreira, S.R.S.  
Federal University of Santa Catarina, BRAZIL
- T1-03 Modeling solubility of solids in supercritical carbon dioxide using q-Chrastil equation  
Tabernero, A.<sup>(1)</sup>, Vieira de Melo, S.A.B.<sup>(2)</sup>, Mammucari, R.<sup>(3)</sup>, Martín del Valle, E.M.<sup>(1)</sup>, Foster, N.R.<sup>(3)</sup>  
<sup>(1)</sup> Universidad de Salamanca, SPAIN  
<sup>(2)</sup> Universidade Federal da Bahia, BRAZIL  
<sup>(3)</sup> The University of New South Wales, AUSTRALIA
- T1-05 Phase behavior for decalin, water and carbon dioxide mixtures  
Rocha, I.<sup>(1)</sup>, Fialho, R.<sup>(1)</sup>, Dariva, C.<sup>(2)</sup>, Franceschi, E.<sup>(2)</sup>, Marques, J.<sup>(3)</sup>, Pessoa, F.<sup>(4)</sup>  
<sup>(1)</sup> Universidade Federal da Bahia, BRAZIL  
<sup>(2)</sup> Universidade Tiradentes, BRAZIL  
<sup>(3)</sup> Universidade Federal de Sergipe, BRAZIL  
<sup>(4)</sup> Universidade Federal do Rio de Janeiro, BRAZIL
- T1-07 Solubility and thermodynamic properties of carbon dioxide in water/meg mixtures  
Serpa, S.F.<sup>(1)</sup>, Vidal, R.S.<sup>(1)</sup>, Dariva, C.<sup>(1)</sup>, Franceschi, E.<sup>(1)</sup>, Salazar-Banda, G. R.<sup>(1)</sup>, Figueiredo, C.M.S.<sup>(2)</sup>, Nascimento, J.F.<sup>(2)</sup>, Ciambelli, J.R.P.<sup>(2)</sup>  
<sup>(1)</sup> PEP/UNIT, BRAZIL  
<sup>(2)</sup> PETROBRAS/CENPES/PDEP/TPP, BRAZIL.
- T1-09 Extraction of bioactive compounds from peach palm pulp (*bactris gasipaes*) using supercritical CO<sub>2</sub>  
Espinosa, F.A.<sup>(1)</sup>, Martinez, Julián<sup>(2)</sup>, Martinez-Correa, H.A.<sup>(1)</sup>  
<sup>(1)</sup> Universidad Nacional de Colombia, COLOMBIA  
<sup>(2)</sup> Universidade Estadual de Campinas, BRAZIL
- T1-10 Supercritical CO<sub>2</sub> and pressurized solvents extraction processes for bioactive compounds from mango peel waste (*mangifera indica l.*).  
Garcia, M.M.P.<sup>(1)</sup>, Cabral, F.A.<sup>(2)</sup>, Martinez-Correa, H.A.<sup>(1)</sup>  
<sup>(1)</sup> Universidad Nacional de Colombia, COLOMBIA  
<sup>(2)</sup> Universidade Estadual de Campinas, BRAZIL

- T1-11 Thermodynamic modeling of high pressure phase equilibria for clove essential oil+carbon dioxide  
Scopel, R.S., Cassel, E., Vargas, R.M.F.  
PUCRS, BRAZIL
- T1-14 Modeling high pressure vapor-liquid equilibrium for the ternary systems containing supercritical CO<sub>2</sub> and mixed organic solvents using Peng-Robinson equation of state  
Costa, G.M.N., Cardoso, S.G., Soares, R.O., Santana, G.L, Vieira de Melo, S.A.B.  
Universidade Federal da Bahia, BRAZIL
- T1-15 Thermodynamic modeling of phase equilibrium behavior of curcumin - CO<sub>2</sub> - ethanol  
Paviani, L.C., Chiari, M.R.S., Crespo, T.R., Cabral, F.A.  
University of Campinas, BRAZIL
- T1-17 Solubility of poorly soluble drugs in supercritical carbon dioxide: experimental measurement and density-based correlations  
Chim, R., Marceneiro, S., de Matos, M.B.C., Braga, M.E.M., Dias, A.M.A., de Sousa, H.C.  
University of Coimbra, PORTUGAL.
- T1-19 A predictive calculation method for solubility of solids in supercritical fluids using a modified Peng-Robinson equation of state and the van der Waals mixing rule  
Colpas-Castillo, F., Estevez, L.A., Muller, E.  
University of Puerto Rico at Mayagüez, PUERTO RICO
- T1-21 Experimental determination and modeling of coumarin solubility in supercritical carbon dioxide  
Martínez, Y.<sup>(2)</sup>, Mejía, I.<sup>(1)</sup>, López, L.J.<sup>(2)</sup>, Bolaños, G.<sup>(1)</sup>  
<sup>(1)</sup> Universidad del Valle, COLOMBIA  
<sup>(2)</sup> Universidad Industrial de Santander, COLOMBIA

## **TOPIC 2: PROCESSING**

- T2-01 A pilot plant for supercritical fluid extraction of cocoa butter from cocoa powder  
Cabezas, C., Bolaños, G.  
Universidad del Valle, COLOMBIA
- T2-02 Extraction and encapsulation in  $\beta$ -cyclodextrine of aroma from pineapple husk using supercritical carbon dioxide  
Iglesias, S., Sánchez, E., Bolaños, G.  
Universidad del Valle, COLOMBIA
- T2-05 Supercritical anti-solvent precipitation of sodium ibuprofen  
Mezzomo, N., Ferreira, S.R.S.  
Federal University of Santa Catarina (UFSC), BRAZIL

- T2-06 Extraction of *Coriandrum sativum* essential oil with pressurized carbon dioxide  
da Silva Neto, V.A., de Athayde, A.M.F., Timoteo, W.C., Danielski, L.,  
Stragevitch, L.  
LAC/DEQ/UFPE., BRAZIL
- T2-07 Supercritical technology applied to obtain bioactive compounds from botanic  
matrices: compilation of researches done at LASEFI from 2009-2012  
Zabot, G.L., Moraes, M.N., Meireles, M.A.A.  
University of Campinas, BRAZIL
- T2-08 Assembling of a supercritical fluid extraction equipment to operate in continuous  
mode  
Moraes, M., Zabot, G., Meireles, M.A.A.  
University of Campinas (UNICAMP), BRAZIL
- T2-09 Pressurized liquid extraction (PLE) of bixin from defatted annatto seeds  
Rodrigues, L., Alcázar-Alay, S., Meireles, M.A.A.  
University of Campinas (UNICAMP), BRAZIL
- T2-10 Pressurized water extraction (PWE) of annatto pigment  
Alcázar-Alay, S., Rodrigues, L., Meireles, M.A.A.  
University of Campinas (UNICAMP), BRAZIL
- T2-11 Different solvents for extraction of brazilian gree propolis: composition and  
extraction yield of phenolic compounds  
Paviani, L., Fiorito, G., Sacoda, P., Cabral, F.  
University of Campinas (UNICAMP), BRAZIL
- T2-12 Sequential extraction of *Arrabidaea chica* verlot using supercritical carbon dioxide,  
ethanol and water as solvents: global yield and concentration of carajurin.  
De Paula, J., Paviani, L., Sousa, I., Foglio, M., Cabral, F.  
University of Campinas (UNICAMP), BRAZIL
- T2-13 Supercritical fluid extraction of passion fruit seeds and its processing residue (cake)  
Oliveira, D., Angonese, M., Ferreira, S.R.S.  
Federal University of Santa Catarina, BRAZIL
- T2-14 Supercritical carbon dioxide extraction of *Chelidonium majus* bioactive extracts  
using basified co-solvents  
Gañán, N.<sup>(1)(2)</sup>, Bombaldi, F.<sup>(1)</sup>, Dias, A.<sup>(1)</sup>, Zygadlo, J.<sup>(3)</sup>, Brignole, E.<sup>(2)</sup>, de Sousa,  
H.<sup>(1)</sup>, Braga, M.<sup>(1)</sup>  
<sup>(1)</sup> University of Coimbra (FCTUC), PORTUGAL  
<sup>(2)</sup> Universidad Nacional del Sur, ARGENTINA  
<sup>(3)</sup> Universidad Nacional de Córdoba, ARGENTINA



- T2-15 Antioxidant potential and chemical profile of *Casearia sylvestris* extracts  
Benelli, P.<sup>(1)</sup>, Riehl, C.<sup>(2)</sup>, Pedrosa, R.<sup>(3)</sup>, Ferreira, S.R.S.<sup>(1)</sup>  
<sup>(1)</sup> Federal University of Santa Catarina, BRAZIL  
<sup>(2)</sup> Federal University of Rio de Janeiro, BRAZIL  
<sup>(3)</sup> Federal University of Santa Catarina, BRAZIL
- T2-18 Phorbol esters extraction from *Jatropha curcas* seed cake using supercritical carbon dioxide  
Pereira, C.S.S., Rocha, R.R., Pessoa, F.L.P., Mendes, M.F.  
Federal University of Rio de Janeiro, BRAZIL
- T2-19 Extraction of phenolic and lipophilic compounds from *Pinus pinaster* knots and stemwood by supercritical CO<sub>2</sub>  
Conde, E.<sup>(1)</sup>, Díaz-Reinoso, B.<sup>(1)</sup>, Moure, A.<sup>(1)</sup>, Hemming, J.<sup>(2)</sup>, Willför, S.<sup>(2)</sup>, Domínguez, H.<sup>(1)</sup>, Parajó, J.<sup>(1)</sup>  
<sup>(1)</sup> University of Vigo, SPAIN  
<sup>(2)</sup> Åbo Akademi University, FINLAND
- T2-20 Optimization of pressurized liquid extraction of ecdysteroids from brazilian ginseng roots  
Debien, I., Vardanega, R., Santos, D., Meireles, M.  
University of Campinas (UNICAMP), BRAZIL
- T2-21 Effect of pressure on the kinetics of SC-CO<sub>2</sub> extraction of *Capsicum* pepper in terms of global yield and capsaicinoids concentration  
de Aguiar, A.<sup>(1)</sup>, Sales, L.<sup>(1)</sup>, dos Santos, P.<sup>(1)</sup>, Barbero, G.<sup>(2)</sup>, Martínez, J.<sup>(1)</sup>  
<sup>(1)</sup> University of Campinas (UNICAMP), BRAZIL  
<sup>(2)</sup> University of Cádiz, SPAIN
- T2-22 Extraction of bioactive compounds from blueberry (*Vaccinium myrtillus L.*) residues using supercritical CO<sub>2</sub>  
Paes, J., Martínez, J.  
University of Campinas (UNICAMP), BRAZIL
- T2-24 Scale-up of SFE from *Capsicum* pepper using supercritical carbon dioxide  
Silva, L.<sup>(1)</sup>, de Aguiar, A.<sup>(1)</sup>, Barbero, G.<sup>(2)</sup>, Martínez, J.<sup>(1)</sup>  
<sup>(1)</sup> University of Campinas (UNICAMP), BRAZIL  
<sup>(2)</sup> University of Cádiz, SPAIN
- T2-25 Development and validation of a pressurized liquid extraction (PLE) unit  
dos Santos, P.<sup>(1)</sup>, de Aguiar, A.<sup>(1)</sup>, Paes, J.<sup>(1)</sup>, Barbero, G.<sup>(2)</sup>, Martínez, J.<sup>(1)</sup>  
<sup>(1)</sup> University of Campinas (UNICAMP), BRAZIL  
<sup>(2)</sup> University of Cádiz, SPAIN

- T2-26 Extraction of mangaba (*Hancornia speciosa*) seed oil using compressed ethene and supercritical carbon dioxide  
 dos Santos, L.<sup>(1)</sup>, Oliveira, V.<sup>(1)</sup>, da Silva, C.<sup>(2)</sup>, Ferreira, V.<sup>(2)</sup>, Cardoz, L.<sup>(2)</sup>  
<sup>(1)</sup> Universidade Federal de Sergipe, BRAZIL  
<sup>(2)</sup> Maringá State University (UEM), BRAZIL
- T2-27 Analysis of the behavior of a SCWO cooled wall reactor working with two outlets. Experimental results and energetic study  
 Cabeza, P., Criado, M., Queiroz, J., Jiménez, C., Bermejo, M., Cocero, M.J.  
 University of Valladolid, SPAIN
- T2-28 Supercritical fluid extraction of byproduct from pecan [*Carya illinoensis* (WANGENH) K. KOCH] oil industry  
 Salvador, A., Block, J., Ferreira, S.R.S.  
 Federal University of Santa Catarina, BRAZIL
- T2-30 Antioxidant activity of black pepper oil obtained by supercritical CO<sub>2</sub>  
 Andrade, K., Ferreira, S.R.S.  
 Federal University of Santa Catarina, BRAZIL
- T2-31 SFE from *Agaricus brasiliensis*: modeling and cost estimation  
 Mazzutti, S.<sup>(1)</sup>, Mezzomo, N.<sup>(1)</sup>, Ferreira, S.R.S.<sup>(1)</sup>, Martínez, J.<sup>(2)</sup>  
<sup>(1)</sup> Federal University of Santa Catarina, BRAZIL  
<sup>(2)</sup> University of Campinas (UNICAMP), BRAZIL
- T2-32 Extraction of basil oil (*Ocimum basilicum* L.) using supercritical fluid  
 de Barros N., Rocha, R., Mendes, M., de Assis, A.  
 Universidade Federal Rural do Rio de Janeiro (UFRRJ), BRAZIL
- T2-33 Evaluation of polycyclic aromatic hydrocarbons in soils using supercritical fluid extraction  
 Silva, C.<sup>(1)</sup>, Silva, D.<sup>(1)</sup>, Ciriaco, M.<sup>(1)</sup>, Freire, R.<sup>(1)</sup>, Pereira, C.<sup>(2)</sup>, Viana, M.<sup>(1)</sup>, Nascimento, C.<sup>(1)</sup>  
<sup>(1)</sup> Universidade de São Paulo, BRAZIL  
<sup>(2)</sup> Universidade Federal do Rio Grande do Norte (UFRN), BRAZIL
- T2-35 Methods the extraction oil their interaction the fatty acid profiles on oil the Brazil nut (*Bertholletia excelsea* H. B. K.)  
 Santos, O.V.<sup>(1)</sup>, Lannes, S.<sup>(1)</sup>, Corrêa, N.<sup>(2)</sup>, Carvalho, J. R.<sup>(2)</sup>, França, L.<sup>(2)</sup>  
<sup>(1)</sup> Universidade de São Paulo, BRAZIL  
<sup>(2)</sup> Universidade Federal do Pará, BRAZIL
- T2-36 Evaluation of quality and nutritional profile of the Sapucaia's oil (*Lecythis pisonis* Camb.) obtained by solid-liquid extraction and CO<sub>2</sub> in supercritical state: comparative parameters  
 Santos, O.V., Corrêa, N., Carvalho, J.R., França, L.  
 Universidade Federal do Pará, BRAZIL

- T2-37 Effects of SFE *Melia azedarach* on control of the fall armyworm (*Spodoptera frugiperda*)  
 Scapinello, J.<sup>(1)</sup>, Ribeiros, M.<sup>(1)</sup>, Tomazelli, O.,<sup>(1)</sup> Chiaradia, L.<sup>(1)</sup>, de Oliveira, J.V.<sup>(2)</sup>, Dal Magro, J.<sup>(1)</sup>  
<sup>(1)</sup> Universidade Comunitária Regional de Chapecó (Unochapecó), BRAZIL  
<sup>(2)</sup> Universidade Federal de Santa Catarina (UFSC), BRAZIL
- T2-38 Nutritional quality of oils Tucumã from the state of Amazonas and Pará obtained different extraction methods  
 Vasconcelos, B.<sup>(2)</sup>, Santos, O.<sup>(1)</sup>, França, L.<sup>(2)</sup>, Moraes, J.<sup>(2)</sup>, Corrêa, N.<sup>(2)</sup>  
<sup>(1)</sup> Universidade do Estado do Pará, BRAZIL  
<sup>(2)</sup> Universidade Federal do Pará, BRAZIL
- T2-39 Extracts from pitanga leaves (*Eugenia uniflora* L.) with sequential extraction in fixed bed using supercritical CO<sub>2</sub>, ethanol and water as solvents  
 Garmus, T., Paviani, L., Cabral, F.  
 University of Campinas (UNICAMP), BRAZIL
- T2-40 Pressurized hot water extraction of  $\beta$ -Glucans from Barley  
 Benito-Román, Ó., Alonso, E., Cocero, M.J.  
 University of Valladolid, SPAIN
- T2-41 Economic optimization of solvent cycle conditions for the supercritical CO<sub>2</sub> extraction of prepressed oilseeds at industrial scale  
 Núñez, G.<sup>(1)</sup>, Aravena, R.<sup>(1)</sup>, del Valle, J.<sup>(1)</sup>, Espinosa, S.<sup>(2)</sup>  
<sup>(1)</sup> Pontificia Universidad Católica de Chile, CHILE  
<sup>(2)</sup> Universidad Nacional del Comahue, ARGENTINA
- T2-42 Obtaining antioxidant compounds seed *Tamarindus indica*, sweet variety  
 Reis, P. M.<sup>(1)</sup>, Hense, H.<sup>(2)</sup>, Dariva, C.<sup>(3)</sup>, Franceschi, E.<sup>(2)</sup>, Barroso, G.<sup>(1)</sup>  
<sup>(1)</sup> IFSertão-PE, BRAZIL  
<sup>(2)</sup> Universidade Federal de Santa Catarina (UFSC), BRAZIL  
<sup>(3)</sup> Tiradentes University, BRAZIL
- T2-44 Supercritical fluid extraction from *Psidium guajava* L. leaves: mathematical modeling and experiments  
 Da Silva, C.G.F., do Espírito Santo A., Anzolin, J. G., Cassel, E., Vargas, R.M.F  
 Pontificia Universidade Católica do Rio Grande do Sul (PUCRS), BRAZIL
- T2-45 Extraction of Pequi (*Caryocar coriaceum*) pulp oil using high pressure propane: determination of chemical profile and antioxidant potential  
 Pessoa, A.<sup>(1)</sup>, Franceschi, E.<sup>(2)</sup>, Dariva, C.<sup>(2)</sup>, Vieira, G.<sup>(3)</sup>, Ferreira, S.R.S.<sup>(1)</sup>, Lanza, M.<sup>(1)</sup>  
<sup>(1)</sup> Federal University of Santa Catarina (UFSC), BRAZIL  
<sup>(2)</sup> Tiradentes University (UNIT), BRAZIL  
<sup>(3)</sup> IF Sertão- PE, BRAZIL

- T2-46 Extraction and determination of antioxidant compounds  
Plaza, M., Abrahamsson, V., Turner, C.  
Lund University, SWEDEN
- T2-50 Biological activity of *Brassica oleracea var capitata* extracts obtained by SC-CO<sub>2</sub>  
Dal Prá, V.<sup>(1)</sup>, Lima, F.<sup>(1)</sup>, da Silveira, G.<sup>(1)</sup>, Mossi, V.<sup>(2)</sup>, Três, M.<sup>(2)</sup>, Carvalho, C.<sup>(3)</sup>,  
Mazutti, M.<sup>(1)</sup>, de Carvalho, L.<sup>(1)</sup>, Nascimento, P.<sup>(1)</sup>, da rosa, M.<sup>(1)</sup>  
<sup>(1)</sup> Federal University of Santa Maria, BRAZIL  
<sup>(2)</sup> URI, BRAZIL  
<sup>(3)</sup> Federal University of Viçosa, BRAZIL
- T2-51 Effect of substrate pretreatment on the supercritical CO<sub>2</sub> extraction of tomato  
Uquiche, E.<sup>(1)</sup>, Núñez, G.<sup>(2)</sup>, del Valle, J.M.<sup>(2)</sup>, Ortíz, J.<sup>(3)</sup>  
<sup>(1)</sup> Universidad de la Frontera (UFRO), CHILE  
<sup>(2)</sup> Pontificia Universidad Católica de Chile, CHILE  
<sup>(3)</sup> Universidad de Chile, CHILE
- T2-52 Ultrasound assisted supercritical fluid extraction of oil from baru (*Dipteryx alata vogel*)  
dos Santos, P.<sup>(1)</sup>, de Aguiar, A.<sup>(1)</sup>, Paes, J.<sup>(1)</sup>, Visentainer, J.<sup>(2)</sup>, Martínez, J.<sup>(1)</sup>  
<sup>(1)</sup> University of Campinas (UNICAMP), BRAZIL  
<sup>(2)</sup> State University of Maringá, BRAZIL
- T2-53 Study of the yield and fatty acid profile of coffee oil from roasted beans obtained  
with supercritical carbon dioxide  
Hurtado, A., Dorado, D.  
Universidad de Nariño, COLOMBIA
- T2-56 Progress in green textile dyeing technology: present and future  
Montero, G.  
USA

**POSTER SESSION II**  
**Wednesday April 3rd**  
**15:00 – 17:30**

## POSTER SESSION II

April 3rd (Wednesday) 15:00 to 17:30

### TOPIC 2: PROCESSING

- T2-57 Fractionation and characterization of *Baccharis* ssp. nonvolatile extracts obtained with supercritical CO<sub>2</sub>  
Machado, A., Cassel, E.  
PUCRS, BRAZIL
- T2-60 Production of black sesame (*Sesamun sp.*) seeds extract by supercritical fluid extraction: isotherms of global yield and determination of total fatty acids  
Botelho, J.R.S., Medeiros, N.G., Rodrigues, A.M.C., Araújo, M.E., Machado, N.T., Júnior, R.N.C.  
Federal University of Pará, BRAZIL
- T2-61 Sunflower oil extraction using pressurized ethanol, ethyl acetate and methyl acetate  
Santos, C.J.R., Vidal, R.S., Almeida, L.C., Franceschi, E., Santana, C.C., Dariva, C., Santos, A.F., Fortuny, M., Egues, S.  
Núcleo De Estudos Em Sistemas Coloidais, BRAZIL
- T2-62 Supercritical CO<sub>2</sub> extraction of carotenoids and capsaicinoids from peruvian peppers and its quantification by high performance liquid chromatography  
Bontemps, I.<sup>(1)</sup>, Coronel, E.<sup>(1)</sup>, Velásquez, S.<sup>(1)</sup>, Quispe-Condori, S.<sup>(2)</sup>, Saito-Roncal, A.<sup>(2)</sup>, Gamarra, N.<sup>(1)</sup>  
<sup>(1)</sup> Universidad Nacional del Centro, PERU  
<sup>(2)</sup> Universidad Peruana Unión, PERU
- T2-63 Supercritical fluid extraction of Andes Berry (*Rubus glaucus* Benth): composition and antioxidant activity  
Arias, A., Ramírez, E., Vázquez, E., Martínez, J., Stashenko, E.  
Universidad Industrial de Santander, COLOMBIA
- T2-64 Avocado oil extraction (*Persea americana* Mill) grown in Colombia, by supercritical fluid technology: an alternative to recovery overproduction  
Restrepo, A., Londoño-Londoño, J., Cardona, B.  
Corporación Universitaria Lasallista, COLOMBIA
- T2-65 Antioxidant properties of the extracts obtained with supercritical CO<sub>2</sub> and solvents from various *L. Alba* and *L. Origanoides* chemotypes  
Córdoba, Y., Martínez, J., Stashenko, E.  
Universidad Industrial de Santander, COLOMBIA

- T2-66 Chemical composition and antioxidant capacity of essential oils and supercritical CO<sub>2</sub> extracts of aromatic species grown in Colombia  
Durán, D., Díaz V., Stashenko, E., Martínez, J.R.  
Universidad Industrial de Santander, COLOMBIA
- T2-67 Supercritical fluid extraction of *Psidium guajava*, *Salvia officinalis* and *Rosmarinus officinalis*: effect of extraction parameters, antioxidant activity and composition  
Ramírez, E., Arias, A., Vázquez, E., Martínez, J.R., Stashenko, E.  
Universidad Industrial de Santander, COLOMBIA
- T2-68 Chemical characterization of *Lippia dulcis* Trevir extract obtained with supercritical CO<sub>2</sub>  
Gómez, N., Ramírez, E., Manrique, D., Martínez, J.R., Stashenko, E.  
Universidad Industrial de Santander, COLOMBIA
- T2-73 Evaluation of the extraction of tacamahaco (*Protium heptaphyllum*) resin's essential oil using supercritical carbon dioxide  
Marquina-Chidsey, G., Monro, B., Pérez, E., Velázquez, I., Vargas, M.  
Universidad de Carabobo, VENEZUELA
- T2-74 Enrichment of antioxidant compounds from lemon balm (*Melissa officinalis*) by pressurized liquid extraction and enzyme-assisted extraction  
Miron, L., Herrero, M., Ibáñez, E.  
Institute of Food Science Research (CIAL-CSIC), SPAIN
- T2-75 Liquefaction of barley hull with pressurized fluids  
Sarkar, S., Alvarez, V., Saldaña, M.  
University of Alberta, CANADA
- T2-76 Supercritical antisolvent fractionation of antioxidant extracts obtained using pressurized liquid extraction  
Mendiola, J.A., Castro-Puyana, M., Cifuentes, A., Herrero, M., Ibáñez, E.  
Instituto de Investigación en Ciencias de la Alimentación CIAL (CSIC-UAM), SPAIN
- T2-78 Optimization of subcritical fluid treatment of potato peel using response surface based on Taguchi method  
Alvarez, V., Saldaña, M.  
University of Alberta, CANADA
- T2-79 Extraction of thymol from different varieties of thyme plants using green solvents  
Angelov, I.<sup>(1)</sup>, Villanueva, D.<sup>(2)</sup>, Stateva, R.<sup>(1)</sup>, Reglero, G.<sup>(2)</sup>, Fornari, T.<sup>(2)</sup>,  
Ibáñez, E.<sup>(2)</sup>  
<sup>(1)</sup> Bulgarian Academy of Sciences, BULGARIA  
<sup>(2)</sup> Universidad Autónoma de Madrid, SPAIN

- T2-80 Extraction of new bioactives from *Neochloris oleoabundans* using pressurized technologies and food grade solvents.  
 Castro-Puyana, M.<sup>(1)</sup>, Herrero, M.<sup>(1)</sup>, Mendiola, J. A.<sup>(1)</sup>, Suárez-Alvarez, S.<sup>(2)</sup>  
 Cifuentes, A.<sup>(1)</sup>, Ibáñez, E.<sup>(1)</sup>  
<sup>(1)</sup> Universidad Autónoma de Madrid, SPAIN  
<sup>(2)</sup> Neiker Tecnalia, SPAIN
- T2-81 Semi-theoretical kinetic models for hot pressurized fluid extraction of phytochemicals from canadian biomass  
 Alvarez, V., Saldaña, M.  
 University of Alberta, CANADA
- T2-82 Cost correlation for CO<sub>2</sub> supercritical extraction systems  
 Rocha, J., Novelo, J., Ruiz, C.  
 Universidad Autónoma de Yucatán, MEXICO
- T2-83 Antibacterial activity of supercritical extracts from guava (*Psidium guajava* L.) seeds  
 Hilarión, L.<sup>(1)</sup>, Lozano, A.<sup>(1)</sup>, Mojica, A.<sup>(1)</sup>, López, E.<sup>(1)</sup>, Castro-Vargas, H.<sup>(2)</sup>, Parada-Alfonso, F.<sup>(2)</sup>  
<sup>(1)</sup> Colegio Mayor de Cundinamarca, COLOMBIA  
<sup>(2)</sup> Universidad Nacional de Colombia, COLOMBIA
- T2-85 Larvicidal activity of methanolic extracts and SC-CO<sub>2</sub>/ethanol from Cape gooseberry (*Physalis peruviana* L.) calice  
 Ortega, J.P., Moreno, B., Parada-Alfonso, F., Ballesteros D., Restrepo, L.P.  
 Universidad Nacional de Colombia, COLOMBIA
- T2-86 Novel hydrothermal solution processing, characterization and bioactivity of some selected biomaterials  
 Namratha, K., Byrappa, K.  
 University of Mysore, INDIA
- T2-87 Obtaining of bee pollen oil for nutritional purposes using supercritical CO<sub>2</sub>  
 Acero, L., Rodríguez, L., Parada-Alfonso, F.  
 Universidad Nacional de Colombia, COLOMBIA
- T2-88 Separation of vitamin E isomers from palm oil FAME's by supercritical desorption  
 Murcillo, J.F., Bolaños, G.  
 Universidad del Valle, COLOMBIA
- T2-90 Batch supercritical water oxidation of tannery wastewaters  
 Moreno, S., Torres, C., Marulanda, V.  
 Universidad de la Salle, COLOMBIA



### **TOPIC 3: REACTIONS AND EMERGING APPLICATIONS**

- T3-05 Fructooligosaccharides production using inulinase of *Aspergillus niger* after treatment with fluid pressurized in two different means  
Silva, M.F.<sup>(1)</sup>, Golunski, S.M.<sup>(1)</sup>, Rigo, D.<sup>(1)</sup>, Mossi, V.<sup>(1)</sup>, Kuhn, G.<sup>(1)</sup>,  
Di Luccio, M.<sup>(2)</sup>, de Oliveira, J.V.<sup>(2)</sup>, Tres, M.V.<sup>(1)</sup>, de Oliveira, D.<sup>(2)</sup>, Treichel, H.<sup>(3)</sup>  
<sup>(1)</sup> Universidade Regional Integrada, BRAZIL  
<sup>(2)</sup> Universidade Federal de Santa Catarina, BRAZIL  
<sup>(3)</sup> Universidade Federal da Fronteira Sul, BRAZIL
- T3-06 Synthesis of fructooligosaccharides from *Aspergillus niger* commercial inulinase immobilized in montmorillonite pre-treated in pressurized LPG  
Kuhn, G.<sup>(1)</sup>, Silva, M.F.<sup>(1)</sup>, Golunski, S.<sup>(1)</sup>, Rosa, C.D.<sup>(1)</sup>  
de Oliveira, D.<sup>(2)</sup>, de Oliveira, J.V.<sup>(2)</sup>, Treichel, H.<sup>(3)</sup>  
<sup>(1)</sup> Universidade Regional Integrada (URI), BRAZIL  
<sup>(2)</sup> Universidade Federal de Santa Catarina (UFSC), BRAZIL  
<sup>(3)</sup> Universidade Federal da Fronteira Sul, BRAZIL
- T3-09 Hydrothermal and supercritical combined extraction process of fractions with antioxidant activity from *Cytisus scoparius*  
Moure, A., Conde, E., Falqué, E., Domínguez, H.  
Universidad de Vigo, SPAIN
- T3-10 Evaluation of the inulinase of *Aspergillus niger* immobilized after treatment in pressurized fluid  
Fernandes Silva, M.<sup>(1)</sup>, Golunski, S.<sup>(1)</sup>, Rigo, D.<sup>(1)</sup>, Mossi, V.<sup>(1)</sup>, Kuhn, G.<sup>(1)</sup>  
Di Luccio, M.<sup>(2)</sup>, de Oliveira, J.V.<sup>(2)</sup>, Tres, M.<sup>(1)</sup>, de Oliveira, D.<sup>(2)</sup>  
Treichel, H.<sup>(3)</sup>, Astolfi, A.<sup>(1)</sup>  
<sup>(1)</sup> Universidade Regional Integrada (URI), BRAZIL  
<sup>(2)</sup> Universidade Federal de Santa Catarina (UFSC), BRAZIL  
<sup>(3)</sup> Universidade Federal da Fronteira Sul, BRAZIL
- T3-11 Transformation of glucose in high added value compounds in a hydrothermal reaction media  
Cantero, D., Bermejo, M. D., Cocero, M. J.  
University of Valladolid, SPAIN
- T3-13 Influence of drying on the morphology of microparticles of  $\beta$ -carotene and PHBV using SEDS technique  
Priamo, W.<sup>(1)</sup>, Ferreira, S.R.S.<sup>(2)</sup>, de Oliveira, J.V.<sup>(3)</sup>  
<sup>(1)</sup> IFRS, BRAZIL  
<sup>(2)</sup> Universidade Federal de Santa Catarina (UFSC), BRAZIL  
<sup>(3)</sup> Universidade Regional Integrada (URI), BRAZIL

- T3-16 Application of palladium nanoparticles supported on silica in the glycerol oxidation using supercritical carbon dioxide  
 Junges, A.<sup>(1)</sup>, Santos, A. F.<sup>(1)</sup>, Fortuny, M.<sup>(1)</sup>, Santana, C. C.<sup>(1)</sup>, Dariva, C.<sup>(1)</sup>  
 Schwaab, M.<sup>(2)</sup>, Egues, S. M. S.<sup>(1)</sup>, Franceschi, E.<sup>(1)</sup>  
<sup>(1)</sup> Instituto de Tecnologia e Pesquisa (ITP), BRAZIL  
<sup>(2)</sup> Federal University of Santa Maria, BRAZIL
- T3-18 Solid-state enzymatic hydrolysis of sugarcane bagasse under compressed liquefied petroleum gas  
 Silva, J.R.F.<sup>(1)</sup>, Cantelli, K.<sup>(1)</sup>, Tres, M.V.<sup>(1)</sup>, Rosa, C.D.<sup>(1)</sup>, Soares, M.<sup>(1)</sup>  
 de Oliveira, J.V.<sup>(2)</sup>, Treichel, H.<sup>(3)</sup>, Mazutti, M.A.<sup>(4)</sup>  
<sup>(1)</sup> Universidade Regional Integrada (URI), BRAZIL  
<sup>(2)</sup> Universidade Federal de Santa Catarina (UFSC), BRAZIL  
<sup>(3)</sup> Universidade Federal da Fronteira Sul, BRAZIL  
<sup>(4)</sup> Federal University of Santa Maria, BRAZIL
- T3-19 Combined use of ultrasound and compressed liquefied petroleum gas to increase the activity of enzymes  
 Silva, J.R.F.<sup>(1)</sup>, Cantelli, K.<sup>(1)</sup>, Tres, M.V.<sup>(1)</sup>, Rosa, C.D.<sup>(1)</sup>, Soares, M.<sup>(1)</sup>  
 de Oliveira, J.V.<sup>(2)</sup>, Treichel, H.<sup>(3)</sup>, Mazutti, M.A.<sup>(4)</sup>  
<sup>(1)</sup> Universidade Regional Integrada (URI), BRAZIL  
<sup>(2)</sup> Universidade Federal de Santa Catarina (UFSC), BRAZIL  
<sup>(3)</sup> Universidade Federal da Fronteira Sul, BRAZIL  
<sup>(4)</sup> Federal University of Santa Maria, BRAZIL
- T3-20 Continuous high-pressure enzymatic production of soybean ethyl esters in an expanded-bed reactor  
 Colombo, T.S.<sup>(1)</sup>, Mazutti, M.A.<sup>(2)</sup>, de Oliveira, J.V.<sup>(3)</sup>, de Oliveira, D.<sup>(3)</sup>  
<sup>(1)</sup> Universidade Regional Integrada (URI), BRAZIL  
<sup>(2)</sup> Federal University of Santa Maria, BRAZIL  
<sup>(3)</sup> Universidade Federal de Santa Catarina (UFSC), BRAZIL
- T3-21 Fatty acids recovery from microalgae for biodiesel production  
 Montero, R., Hegel, P., Damiani, C., Popovich, C., Pereda, S., Leonardi, P.<sup>(1)</sup>  
 PLAPIQUI - Universidad Nacional del Sur, ARGENTINA

#### **TOPIC 4: MATERIALS**

- T4-02 Gas antisolvent precipitation of levothyroxine sodium using carbon dioxide and ethanol  
 Vieira de Melo, S.A.B.<sup>(1)</sup>, Danh, L.T.<sup>(2)</sup>, Mammucari, R.<sup>(2)</sup>, Foster, N.R.<sup>(2)</sup>  
<sup>(1)</sup> Universidade Federal da Bahia, BRAZIL  
<sup>(2)</sup> The University of New South Wales, AUSTRALIA

- T4-06 Supercritical carbon dioxide deposition of naphthoquinones into mesoporous silica nanoparticles  
 Gañán, N.A.<sup>(1,2)</sup>, Dias, A.M.A.<sup>(1)</sup>, Zygodlo, J.<sup>(3)</sup>, Brignole, E.<sup>(2)</sup>, Braga, M.E.M.<sup>(1)</sup>, De Sousa, H.C.<sup>(1)</sup>  
<sup>(1)</sup> University of Coimbra, PORTUGAL  
<sup>(2)</sup> Universidad Nacional del Sur, ARGENTINA  
<sup>(3)</sup> Universidad Nacional de Córdoba, ARGENTINA
- T4-07 Production of water-soluble  $\beta$ -carotene formulations by high pressure emulsion processes  
 De Paz, E., Martín, A., Cocero, M. J.  
 University of Valladolid, SPAIN
- T4-09 Supercritical fluid deposition of metallic nanoparticles over mesoporous supports  
 Sastre, A., Romero, A., Cocero, M. J., Alonso, E.  
 University of Valladolid, SPAIN
- T4-10 Supercritical antisolvent micronization of levothyroxine sodium  
 Nascimento, I.S.B.<sup>(1)</sup>, Tavares-Cardoso, M.A.<sup>(2)</sup>, Albuquerque, E.C.M.C.<sup>(1)</sup>, Vieira de Melo, S.A.B.<sup>(1)</sup>  
<sup>(1)</sup> Universidade Federal da Bahia, BRAZIL  
<sup>(2)</sup> MadeBiotech - C R & D, S.A, PORTUGAL
- T4-11 Supercritical impregnation of cellulose with active compounds  
 Martini, R.<sup>(1)</sup>, Velez, A.<sup>(1)</sup>, Milanesio, J.<sup>(1)</sup>, Barbosa, S.<sup>(2)</sup>  
<sup>(1)</sup> IDTQ, ARGENTINA  
<sup>(2)</sup> PLAPIQUI – Universidad Nacional del Sur, ARGENTINA

## **TOPIC 5: BIOFUELS**

- T5-01 Production of ethyl esters from *Jatropha curcas l.* oil under supercritical conditions in continuous mode  
 da Silva, C.<sup>(1)</sup>, Oliveira, J.V.<sup>(2)</sup>, Cabral, V.<sup>(1)</sup>, Cardozo-Filho, L.<sup>(1)</sup>  
<sup>(1)</sup> Maringa State University, BRAZIL  
<sup>(2)</sup> Santa Catarina Federal University, BRAZIL
- T5-04 Thermal stability of reaction medium of the transesterification of *Jatropha curcas l.* oil at supercritical conditions  
 da Silva, C.<sup>(1)</sup>, Garcia, V.A.<sup>(2)</sup>, Oliveira, J.V.<sup>(3)</sup>, Cabral, V.<sup>(1)</sup>, Cardozo-Filho, L.<sup>(1)</sup>  
<sup>(1)</sup> Maringa State University, BRAZIL  
<sup>(2)</sup> University of São Paulo, BRAZIL  
<sup>(3)</sup> Santa Catarina Federal University, BRAZIL
- T5-05 Liquefaction of palm oil fiber (*Elaeis sp.*) in supercritical ethanol  
 Oliveira, A.L.P.C., Nunes, R.B.M., Dariva, C., Franceschi, E.  
 NUESC, PEP/UNIT, BRAZIL

- T5-09 Continuous catalyst-free production of fatty acid ethyl esters from waste fried oil: effects of water and co-solvent addition  
 Abdala, A.C.<sup>(1)</sup>, Cardozo-Filho, L.<sup>(2)</sup>, da Silva, E.<sup>(1)</sup>, da Silva, C.<sup>(2)</sup>  
<sup>(1)</sup> West Paraná State University, BRAZIL  
<sup>(2)</sup> Maringa State University, BRAZIL
- T5-12 Liquid–liquid equilibrium for ternary systems containing biodiesel, crude glycerine, methanol and ethanol at (303.15 and 318.15) K  
 de Bastiani, D., Lanza, M.  
 Federal University of Santa Catarina, BRAZIL
- T5-13 Use of pressurized carbon dioxide to inactivate alkaline phosphatase in milk  
 Ceni, G.<sup>(1)</sup>, Silva, M.F.<sup>(1)</sup>, Benazzi, T.<sup>(1)</sup>, Junior, C.V.<sup>(1)</sup>, Cansian, R.L.<sup>(1)</sup>, Mazutti, M.A.<sup>(2)</sup>, de Oliveira, J.V.<sup>(3)</sup>, Dalla-Rosa, C.<sup>(1)</sup>  
<sup>(1)</sup> URI, BRAZIL  
<sup>(2)</sup> Federal University of Santa Maria, BRAZIL  
<sup>(3)</sup> UFSC, BRAZIL
- T5-14 Pretreatment of sugarcane bagasse using supercritical carbon dioxide to improve the enzymatic hydrolysis  
 Benazzi, T.<sup>(1)</sup>, Calgarotto, S.<sup>(1)</sup>, Astolfi, V.<sup>(1)</sup>, Oliveira, J.V.<sup>(2)</sup>, Mazutti, M.A.<sup>(3)</sup>, Rosa, C.D.<sup>(1)</sup>  
<sup>(1)</sup> URI, BRAZIL  
<sup>(2)</sup> UFSC, BRAZIL  
<sup>(3)</sup> Federal University of Santa Maria, BRAZIL
- T5-15 Macauba oil as an alternative feedstock for biodiesel: characterization and conversion to biodiesel by the supercritical method  
 Navarro-Díaz, H.J.<sup>(1)</sup>, Gonzalez, S.L.<sup>(1)</sup>, Irigaray, B.<sup>(2)</sup>, Vieitez, I.<sup>(2)</sup>, Jachmanián, I.<sup>(2)</sup>, Carciofi, B.A.M.<sup>(1)</sup>, de Oliveira, J.V.<sup>(1)</sup>  
<sup>(1)</sup> Universidade Federal de Santa Catarina, BRAZIL  
<sup>(2)</sup> Universidad de la República, URUGUAY
- T5-16 Obtaining sugars from palm fiber, coconut husk and grape seed by hydrolysis with subcritical water  
 Prado, J.M., Forster-Carneiro, T., Gigo, M.A., Celestrino, R.C.C., Follegatti-Romero, L.A., Filho, F.M., Meireles, M.A.A.  
 University of Campinas, BRAZIL
- T5-17 Subcritical water hydrolysis of sugarcane bagasse  
 Prado, J.M., Forster-Carneiro, T., Celestrino, R.C.C., Gigo, M.A., Follegatti-Romero, L.A., Filho, F.M., A. Meireles, M.A.  
 University of Campinas, BRAZIL

T5-18 Biomass-derived compounds as raw materials for hydrogen production under supercritical conditions

Rovetto, L.J.<sup>(1)</sup>, Frontane, M.E.<sup>(1)</sup>, Velez, A.R.<sup>(1)</sup>, Moyano, L.E.<sup>(1)</sup>,  
Brignole, E.A.<sup>(2)</sup>

<sup>(1)</sup> Universidad Nacional de Córdoba, ARGENTINA

<sup>(2)</sup> Universidad Nacional del Sur, ARGENTINA