



COST ACTION GREENERING – DATA COLLECTION

First name, Family Name: María S. Álvarez

Type (Academic or Industrial): Academic

Country: Spain

Leadership position in the COST: Participant on CA18224

Working Group in which you are involved: WG1

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Laboratory/Company:

Bioengineering and Sustainable processes, Department of Chemical Engineering, University of Vigo

Laboratory/Company info (limited to 400 characters):

Bioengineering and Sustainable processes (BIOSUV) is a multidisciplinary group structured in three main lines of research such as Biotechnology (enzymatic technologies, biorefinery), Green chemistry (aqueous Biphasic Systems, ionic liquids and deep eutectic solvents) and Environmental technologies (bioremediation, advanced Oxidation Processes).

Link to the home page of the Laboratory/Company:

<http://biosuv.uvigo.es>

Fields of expertise (limited to 400 characters):

- Remediation of pollutants from different environments by means of physical and biological methods.
- Deep eutectic solvents and ionic liquids as green solvents for catalysis reactions and extraction.
- Renewable energy production from wastes.

5 Main publications or patents:

- N. Escudero, F.J. Deive, M.S. Álvarez, A. Rodríguez. Plotting a nature-friendly separation process for recovering volatile fatty acids. *Journal of Molecular Liquids* 315 (2020) 113755.
- C. Díaz-Quiroza, L. González, M.S. Álvarez, J.F. Hernández-Chávez, A. Rodríguez, F. J. Deive, G. Ulloa-Mercado. Biocompatible amino acid-based ionic liquids for extracting hormones and antibiotics from swine effluents. *Separation and Purification Technology* 250 (2020) 117068.
- M.S. Álvarez, Y. Zhang. Sketching neoteric solvents for boosting drugs bioavailability. *Journal of Controlled Release* 311–312 (2019) 225.
- L. Morandeira, M.S. Álvarez, M. Markiewicz, S. Stolte, A. Rodríguez, M.A. Sanromán, F.J. Deive. Testing True Choline Ionic Liquid Biocompatibility from a Biotechnological Standpoint. *ACS Sustainable Chemistry & Engineering* 5 (2017) 8302.



- M.S. Álvarez, José M.S.S. Esperança, F.J. Deive, M.A. Sanromán, A. Rodríguez. A biocompatible stepping stone for the removal of emerging contaminants. *Separation and Purification Technology* 153 (2015) 91.

Collaborations:

University of Princeton-USA (José Avalos), Technological Institute of Sonora-México (Carlos Díaz-Quiroza and Ruth Gabriela Ulloa Mercado), Tianjin Institute of Industrial Biotechnology (TIB)-China (Yanfei Zhang), Universidade NOVA de Lisboa-Portugal (José M.S.S. Esperança).

Facilities:

- Orbital shakers (Gallenkamp, Innova 4400, Thermo Forma MAXQ8000)
- Glass reactors (from 0.2 to 5 L) and control units
- Centrifuges (Sigma 3K18 and Rotina 38K)
- Ultrafiltration stirred cells (Amicon)
- Autoclave (Presoclave II)
- Speed vacuum concentrator (Christ RVC2-25)
- Rotatory evaporator (Büchi R200)
- Balance Mettler Toledo AX205
- Densimeter DSA-5000 and microviscometer Loviss 2000ME (Anton Paar)
- Karl-Fischer titrator (Mettler Toledo C20)
- HPLC with detector UV, IR and Diode Array (Agilent 1260 infinity)