

Prof. Alexandre CHAGNES

Full Professor

*Director of Industrial Partnerships, Ecole Nationale Supérieure de Géologie, Université de Lorraine
Scientific Director of Labex Ressources21*

*Head of the National Research Network PROMETHEE on hydrometallurgical processes (GDR 3749)
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RESEARCH FOCUS

Hydrometallurgy, Recycling; Solution chemistry, Nuclear Chemistry, Separation science, Thermodynamic, Electrochemistry, Lithium Batteries.

TEACHING

Physicochemistry in nuclear processes, thermodynamics, electrochemistry, solution chemistry.

EDUCATION

- Ph.D. University of Tours, France (Physical chemistry), September 2002. *Thermodynamic and electrochemical study of organic electrolytes for lithium-ion batteries.*
- M.S. University of Poitiers, France (Catalysis, energy and clean-up processes), June 1999.
- B.S. University of Tours, France (Chemistry), June 1997.

POSITIONS HELD

- 2016-...** **Professor**, Ecole Nationale Supérieure de Géologie (Université de Lorraine)
Hydrometallurgy.
- 2019-...** **Scientific Director of Labex Ressources21** (Université de Lorraine, <http://ressources21.univ-lorraine.fr>)
- 2018-...** **Director of Industrial Partnerships**, Ecole Nationale Supérieure de Géologie (Université de Lorraine)
- 2016-...** **Director of the French Network on Hydrometallurgical processes Promethee** (29 French laboratories, 160 researchers)
- 2005-2016** **Associate Professor**, Chimie ParisTech, Ecole Nationale Supérieure de Chimie de Paris (France).
Solvent extraction in hydrometallurgy and nuclear field; solution chemistry, lithium-ion batteries.
- 2004-2005** **Researcher**, Commissariat à l'Énergie Atomique, Saclay (France).
Solution chemistry in Pressurized water reactor.
- 2003-2004** **Assistant Professor**, Laboratoire de Physicochimie des Interfaces et des Milieux Réactionnels, University of Tours (France).
Electrochemical and thermodynamical studies of room temperature ionic liquids.
- 2002-2003** **Researcher**, Centre de Recherche en Electrochimie et Electrocatalyse, University of Sherbrooke (Québec, Canada).
Materials for electrocatalysis.
- 1999-2002** **PhD**, Laboratoire de Physicochimie des Interfaces et des Milieux Réactionnels, University of Tours (France).
Electrochemistry and solution chemistry in Lithium-ion batteries

COMMITTEE AND COMMUNITY SERVICE

University

- Elected member of the Collegium INP Lorraine of the University of Lorraine (2017-...)
- Elected member of the National University Council (CNU) of Physical and Analytical Chemistry (Section 31, 2016-2017)
- Nominated member of the National University Council (CNU) of Physical and Analytical Chemistry (section 31, 2012-2015)
- Manager of the major Geomaterials, ENSG (2016-...)
- Manager of the major Fuel Cycle of the international master Nuclear Energy (www.master-nuclear-energy.fr, 2015-2016)
- Coordinator of the bureau for students with disabilities, ENSCP (2008-...)
- Studies coordinator, ENSCP (2008-2010)

- Representative at the life university student council, ENSCP (2008-2011)
- Representative at the staff committee, University of Tours (2006-2009)
- Representative of the board of examiners for the entrance examination of French institutes of technology “Concours Communs Polytechnique” (2007-...)

Research

- Scientific Head of the hydrometallurgical platform HydroVAL, Université de Lorraine-GéoRessources (2016-...)
- Scientific Head of the analytical platform PGM, Université de Lorraine-GéoRessources (2016-...)
- Thematic officer of Hydrométallurgie at Université de Lorraine for the KIC EIT Raw Materials
- Member of the Scientific committee of the Labex Ressources 21 (2017-...)
- Scientific manager of the Hydrometallurgical platform HydroVAL, University of Lorraine-GeoRessources (2016-...)
- Scientific manager of the platform of geochemistry, University of Lorraine-GeoRessources (2016-...).
- Scientific consultant (Eramet Research, Persis Mining, Ministry of Environmental, Science and Innovation of Quebec (Canada), Ministry of Research and Education of Kazakhstan, French committee of assessment of Brazilian scientific projects (COFECUB), Expertise of industrial funding for Ph-D students (CIFRE), IDEX Université Grenoble Alpes)
- Vice-President of “Minerallurgy and Extractive Metallurgy” group of the French Society of Mineral Industry (2013-...).
- Leader of the ‘Recycling end Ecodesign’ group of the French Network of electrochemical storage of energy (RS2E, 2015-2016)
- Member of the Administration Board of Association pour le Développement et le Fonctionnement des Activités Contractuelles (ADFAC, 2015-2016).

International meeting organization

- A. Chagnes (leader), G. Cote, B. Hay, B. Moyer, “*Fundamentals & Applications in Hydrometallurgy: From the Molecule to the Process*”, 243rd Spring 2012 ACS Meeting, San Diego, California (USA), 25-29 March 2012.
- A. Chagnes (leader), J. Swiatowska, G. Cote, B. Hay, “*Lithium Process Chemistry: Resources Extraction, Metal Production and Recycle*”, 245th Spring 2012 ACS Meeting, New Orleans, Louisiane (USA), 7-11 April 2013.
- A. Chagnes (leader), T. Retegan, M. Nilson, C. Ekberg, “*Research and Development in Processes for Waste Recycling and Metal Recovery: Symposium in honor of Professor Jan Rydberg*”, 247th National ACS Meeting, Dallas, Texas (USA), 16-20 March 2014.
- A. Chagnes (leader), G. Cote, F. Aggeri, D. Froelich, “*Challenges and Innovation in Recycling Process*”, Symposium Chair Urban Mining, Paris (France), 2-3 June 2015.
- A. Chagnes (leader), N. Welham, J.C. Lee, “*Fundamentals and Applications of Solvent Extraction for the Recovery of Strategic Metals*”, Pacificchem 2015 (ACS), Honolulu, Hawaii (USA), 15-20 December 2015.
- C. Green (Leader), A. Bittner, A. Chagnes, J. Frey, R. Gauss, E. Gloaguen, L. Lamm, V. Trapp, “*Competitiveness in Lithium Industry*”, Fraunhofer Institute, Würzburg (Germany), 11-13 October 2017.
- M. Petranikova (leader), B. Ebin, A. Chagnes, J. Swiatowska, *Circular Economy of Battery: Production and Recycling (CEB 2018)*, Göteborg (Suède), 24-25 Septembre 2018 (200 participants).

National meeting organization

- A. Chagnes (leader), V. Dieudonné, “*Recherche et innovation dans le traitement des ressources minérales : de l'extraction jusqu'à la deuxième transformation*”, ENSCP, Paris (France), 27 March 2014.
- L. Filipov (leader), A. Chagnes, “*Les enjeux environnementaux, atouts de développement de la métallurgie extractive*”, Université de Lorraine, Nancy (France), 9 April 2014.
- A. Chagnes (Leader), Scientific days of the French Network on Hydrometallurgy Prométhée, ENSG, Université de Lorraine, Nancy, 6 Octobre 2016.
- A. Chagnes, Brainstorming of the French Network on Hydrometallurgy Prométhée, Ministry of Research, Paris (France), 19 September 2016.
- A. Chagnes (Leader), Scientific days of the French Network on Hydrometallurgy Prométhée, ENSCP, Paris (France), 29-30 May 2017.

Committees of National and International Meetings

- Associate Editor, 18th International Solvent Extraction Conference 2008 (ISEC'08), Tucson, Arizona (USA), September 15-19, 2008.
- Member of the Technical Committee of the 19th International Solvent Extraction Conference (ISEC 2011), Santiago (Chile), October 3-7, 2011.
- International Advisory Committee of the International Conference on Processing of Lean Grade and Urban Ores (IC-LGO 2015), Jamshedpur (India), January 20-22, 2015.
- Member of the Technical Board of the International Conference Hydrometallurgy 2018, Ottawa, Ontario (Canada), August 26-29, 2018.

- Member of the Technical Committee of the SFGP 2017 meeting, "Evolution du génie des procédés à partir des concepts fondateurs", Session Hydrometallurgie, Université de Lorraine, Nancy (France), 11 July 2017.
- Member of the Scientific Board of International Workshop: Geochemical cycle of Ni, Co and Sc from mining exploration to ecotoxicity, Vandoeuvre-lès-Nancy (France), 17-19 October 2017.
- Member of the organization committee of Hydrometallurgy 2018, 26-29 August 2018, Ottawa, Ontario (Canada).

Associate Editor and member of Editorial Boards

- Associate Editor (leader), "Lithium Process Chemistry: Resources, Extractions, Batteries and Recycling", A. Chagnes, J. Swiatowska (Associate Editors), <http://dx.doi.org/10.1016/B978-0-12-801417-2.00005-0>, ISBN 978-0-12-801417-2, Elsevier (2015).
- Associate Editor (leader), "Research, development and challenges in WEEE", A. Chagnes, G. Cote, C. Ekberg, T. Retegan, M. Nilsson (Associate Editors), Elsevier, 2016, 212 pages (ISBN: 9780128033630).
- Guest Editor, special issue in "Solvent extraction and ion exchange" (Impact factor = 1.821 in 2014), "Uranium and rare earth extraction from wet phosphoric acid", A. Chagnes (Lead Guest Editor), G. Cote (Guest Editors).
- Member of the Editorial Board of the Korean Institute of Resources recycling (2016-...).
- Guest Editor, special issue in Metals, "Advances in Hydrometallurgy", in progress, 2018).
- Associate Editor, Proceeding Extraction 2018, 26-29 August 2018, Ottawa, Ontario (Canada).

Reviewer for international journals

- Peer-reviews for 28 journals (Chemical Engineering Journal, Desalination Water and Treatment, Industrial and Engineering Chemistry Research, Journal of Chemical Technology and Biotechnology, Journal of Physical Chemistry, Journal of Solution Chemistry, Separation Science and Technology, Solvent Extraction and Ion Exchange, etc.).

PUBLISHED PAPERS

Author or co-author of 109 open literature publications in solution chemistry, thermodynamic, electrochemistry and separation science 2 patents, 121 talks and 41 poster presentations at local, national and international meetings.

PUBLISHED PAPERS IN INTERNATIONAL JOURNALS WITH REVIEW ON THE FULL TEXT (74)

- A1 A. Chagnes, B. Carré, D. Lemordant, P. Willmann, "Ion transport theory of nonaqueous electrolytes. LiClO_4 in γ -butyrolactone : The quasi lattice approach", *Electrochimica Acta* **46** 1783-1791 (2001).
- A2 A. Chagnes, C. Mialkowski, B. Carré, D. Lemordant, V. Agafonov, P. Willmann, "Phase diagram of Lactone - Carbonate mixture", *Journal de Physique IV*, **11** 10-27 (2001).
- A3 A. Chagnes, B. Carré, D. Lemordant, P. Willmann, "Modeling viscosity and conductivity of lithium salts in γ -butyrolactone. Application of the Quasi-Lattice theory", *Journal of Power Sources* **109** 203-213 (2002).
- A4 I. Geoffroy, A. Chagnes, B. Carré, D. Lemordant, P. Biensan, S. Herreyre, "Electrolytic characteristics of asymmetric alkyl carbonates solvents for lithium batteries", *Journal of Power Sources* **112** (1) 191-198 (2002).
- A5 C. Mialkowski, A. Chagnes, B. Carré, P. Willmann, D. Lemordant, "Excess thermodynamic properties of binary liquid mixtures containing dimethyl carbonate and γ -butyrolactone", *The Journal of Chemical Thermodynamics* **34** (11) 1845-1854 (2002).
- A6 A. Chagnes, S. Nicolis, B. Carré, P. Willmann, D. Lemordant, "Ion-dipole interaction in concentrated organic electrolytes.", *ChemPhysChem* **4** 559-566 (2003).
- A7 A. Chagnes, H. Allouchi, B. Carré, G. Oudou, P. Willmann, D. Lemordant, " γ -Butyrolactone-Ethylene carbonate based electrolytes for lithium batteries. ", *Journal of Applied Electrochemistry* **33** 589-595 (2003).
- A8 A. Chagnes, B. Carré, P. Willmann, R. Dedryvère, D. Gonbeau, D. Lemordant, "Cycling ability of BL-EC based electrolytes.", *Journal of The Electrochemical Society* **159** (9) A1255-A1261 (2003).
- A9 A. Chagnes, A. Tougui, B. Carré, N. Ranganathan, D. Lemordant, "Temperature effect on the viscosity in binary liquid mixtures containing ethylammonium nitrate and methanol", *Journal of Solution Chemistry* **33** (3) 247-255 (2004).
- A10 A. Chagnes, F. Laplante, F. Kerdouss, P. Proulx, H. Ménard, "Experimental and computational investigation of the electrocatalytic hydrogenation of phenol in an electrochemical cell.", *Canadian Journal of Chemistry* **82** (5) 641-648 (2004).
- A11 G. Saint Pierre, A. Chagnes, N-A. Bouchard, P. Harvey, L. Brossard, H. Ménard, "Rational design of new materials for electrocatalytic hydrogenation reactions: concept, preparation, characterization and theoretical analysis", *Langmuir* **20** (15) 6365-6373 (2004).
- A12 A. Chagnes, H. Allouchi, B. Carré, D. Lemordant, "Phase diagram of imidazolium-butyrolactone binary mixtures", *Solid State Ionics* **176** 1419-1427 (2005).
- A13 R. J. Papoular, H. Allouchi, A. Chagnes, A. Dzyabchenko, B. Carré, D. Lemordant, V. Agafonov, "X-ray Powder Diffraction Structure Determination of γ -butyrolactone at 180 K. Phase problem solution from the lattice energy minimization with two independent molecules", *Acta Crystallography Section B*, **B61** 312-320

- (2005).
- A14 A. Chagnes, M. Diaw, B. Carré, P. Willmann, D. Lemordant, "Imidazolium-Organic Solvent Mixtures as Electrolytes for Lithium Batteries", *Journal of Power Sources* **145** 82-88 (2005).
- A15 M. Diaw, A. Chagnes, B. Carré, P. Willmann, D. Lemordant, "Mixed Ionic Liquid as Electrolyte for Lithium Batteries", *Journal of Power Sources* **146** 682-684 (2005).
- A16 L. Gzara, A. Chagnes, B. Carré, M. Dhahbi, D. Lemordant, "Is 3-Methyl-2-Oxazolidinone a suitable solvent for lithium-ion batteries?", *Journal of Power Sources* **156** 634-644 (2006).
- A17 H. Maachou, K.E. Bal, Y. Bal, A. Chagnes, G. Cote, and D. Alliouche, "Characterization and In Vitro Bioactivity of Chitosan/Hydroxyapatite Composite Scaffold Prepared by Freeze-Gelation Method", *Trends in biomaterials and artificial organs* **22** (1) 15-24 (2008).
- A18 S. Collet, A. Chagnes, B. Courtaud, J. Thiry, G. Cote, "Solvent Extraction of Uranium from Acidic Sulfate Media by Alamine®336: Computer Simulation and Optimization of the Flowsheets", *Journal of Chemical Technology and Biotechnology* **84** 1331-1337 (2009).
- A19 A. Chagnes, B. Courtaud, J. Thiry, G. Cote, "Computer Simulation of Flow Sheets for the Solvent Extraction of Uranium: A New Route to Delay the Effect of the Chemical Degradation of the Organic Phase on Uranium Recovery from Acidic Sulfate Media", *Journal of Chemical Technology and Biotechnology* **84** 1899-1907 (2009).
- A20 A. Chagnes, M-N. Rager, B. Courtaud, J. Thiry, G. Cote, "Speciation of vanadium (V) extracted from acidic sulfate media by trioctylamine in n-dodecane modified with 1-tridecanol", *Hydrometallurgy* **104** 20-24 (2010).
- A21 A. Prestianni, L. Joubert, A. Chagnes, G. Cote, M.N. Ohnet, C. Rabbe, M.C. Charbonnel, C. Adamo, "IR fingerprints of uranium (VI) Nitrate Monoamides Complexes : a joint experimental and theoretical study". *Journal of Physical Chemistry A*. **114** 10878-10884 (2010).
- A22 A. Chagnes, C. Fossé, B. Courtaud, J. Thiry, G. Cote, "Chemical degradation of the mixture of trioctylamine (extractant) and 1-tridecanol (phase modifier) in acidic sulfate media in the presence of vanadium (V)", *Hydrometallurgy*, **105** (3-4), 328-333 (2011).
- A23 J. Swiatowska, V. Lair, C. Pereira-Nabais G. Cote, P. Marcus, A. Chagnes, "XPS, XRD and SEM characterization of a thin ceria layer deposited onto graphite electrode for application in lithium-ion batteries", *Applied Surface Science* **257** 9110-9119 (2011).
- A24 A. Prestianni, L. Joubert, A. Chagnes, G. Cote, C. Adamo, "A Density Functional Theory Study of Uranium (VI) Nitrate Monoamides Complexes", *Physical Chemistry Chemical Physics* **13**, 19371-19377 (2011).
- A25 A. Chagnes, B. Courtaud, J. Thiry, J. Bayardon, S. Jugé, G. Cote, "Influence of phase modifiers on the degradation of tri-n-octylamine/ dodecane extracting mixture by an acidic solution of vanadium (V)". *Solvent Extraction and Ion Exchange* **30**, 67-76 (2012).
- A26 D. Cholico Gonzalez, M. Avila-Rodriguez, J. Antonio Reyes-Aguilerad, G. Cote, A. Chagnes, "Rheological behaviour of Cyphos IL101-Cyanex 272 binary mixtures between 288.15K and 343.15 K", *Journal of Molecular Liquids*, *Journal of Molecular Liquids* **169**, 27-32 (2012).
- A27 K.E. Bal, Y. Bal, A. Chagnes, G. Cote, "Morphology and antimicrobial properties of *Luffa cylindrica* fibres/chitosan biomaterial as micro-reservoirs for silver delivery", *Materials Letters* **79**, 238-241 (2012).
- A28 H. Maachou, K. Bal, Y. Bal, A. Chagnes, G. Cote, D. Aliouche, "In Vitro Biomineralization and Bulk Characterization of Chitosan/Hydroxyapatite Composite Microparticles Prepared by Emulsification Cross-Linking Method: Orthopedic Use", *Applied Biochemistry and Biotechnology Part A: Enzyme Engineering and Biotechnology* **168** (6), 1459-1475 (2012).
- A29 D. Beltrami, G. Cote, H. Mokhtari, B. Courtaud, A. Chagnes, "Modelling of the extraction of uranium (VI) from concentrated phosphoric acid by synergistic mixtures of bis-(2-ethylhexyl)-phosphoric acid and tri-n-octylphosphine oxide", *Hydrometallurgy* **129-130**, 118-125 (2012).
- A30 D. Beltrami, A. Chagnes, M. Haddad, H. Laureano, H. Mokhtari, B. Courtaud, S. Jugé, G. Cote, "Development of new cationic exchangers for the recovery of uranium (VI) from wet phosphoric acid", *Separation Science and Technology* **48**, 480-486 (2013).
- A31 C. Pereira-Nabais, J. Światowska, A. Chagnes, F. Ozanam, A. Gohier, C.-S. Cojocar, M. Cassir, P. Marcus, "Interface Chemistry of Si electrodes used as anodes in Li-ion batteries", *Applied Surface Science* **266**, 5-16 (2013).
- A32 B. P. Hay, A. Chagnes, G. Cote, "On the Metal Ion Selectivity of Oxoacid Extractants", *Solvent Extraction and Ion Exchange* **31**, 95-105 (2013).
- A33 A. Chagnes, B. Pospiech, "A brief review on hydrometallurgical technologies for recycling spent lithium-ion batteries", *Journal of Chemical Technology and Biotechnology* **88**, 1191-1199 (2013).
- A34 A. Chagnes, A. Moncomble, G. Cote, "In-Silico calculations as a helpful tool for designing new extractants in liquid-liquid extraction", *Solvent Extraction and Ion Exchange* **31** (5), 499-518 (2013).
- A35 D. Cholico-Gonzalez, M. Avila-Rodriguez, G. Cote, A. Chagnes, « »Chemical properties of trihexyl(tetradecyl)phosphonium chloride and bis(2,4,4-trimethylpentyl)phosphinic acid mixtures : interactions study by FT-IR and NM spectroscopies », *Journal of Molecular Liquids* **187**, 165-170 (2013).
- A36 D. Beltrami, A. Chagnes, M. Haddad, A. Varnek, H. Mokhtari, B. Courtaud, G. Cote, "Recovery of uranium (VI) from concentrated phosphoric acid by mixtures of new bis(1,3- dialkyloxypropan-2-yl) phosphoric acids

- and tri-*n*-octylphosphine oxide”, *Hydrometallurgy*, **140**, 28-33 (2013).
- A37 D. Beltrami, F. Mercier-Bion, G. Cote, H. Mokhtari, B. Courtaud, E. Simoni, A. Chagnes, “Investigation of the speciation of uranium(VI) in concentrated phosphoric acid and in synergistic extraction systems by time resolved laser-induced fluorescence spectroscopy (TRLFS)”, *Journal of Molecular Liquids* **190**, 42–49 (2014).
- A38 E. Nanini-Maury, J. Swiatowska, A. Chagnes, S. Zanna, P. Tran-Van, P. Marcus, M. Cassir, “Role of sebaconitrile as a cosolvent in the formulation of high-potential electrolytes for lithium-ion batteries”, *Electrochimica Acta* **115** 223-233 (2014).
- A39 C. Pereira-Nabais, J. Światowska, A. Chagnes, A. Gohier, S. Zanna, A. Seyeux, P. Tran-Van, C. S. Cojocar, M. Cassir, P. Marcus, “Insight on the Solid Electrolyte Interphase (SEI) onto Si nanowires in lithium-ion battery: chemical and morphological modification upon cycling”, *Journal of Physical Chemistry C*, **118** (6) 2919–2928 (2014).
- A40 D. Beltrami, A. Chagnes, M. Haddad, H. Laureano, H. Mokhtari, B. Courtaud, S. Jugé, G. Cote, “Solvent extraction studies of uranium(VI) from phosphoric acid: role of synergistic reagents in mixture with bis(2-ethylhexyl) phosphoric acid” *Hydrometallurgy* **144-145**, 207-214 (2014).
- A41 B. Pospiech, A. Chagnes, “Highly selective extraction of Zn(II) and Cu(II) from aqueous chloride solutions by mixture of Cyanex 272 and Aliquat 336”, *Separation Science and Technology* **50** (9), 1302-1309 (2014).
- A42 D. Beltrami, G. Cote, H. Mokhtari, B. Courtaud, B. A. Moyer, A. Chagnes, “A review on the recovery of uranium(VI) from wet phosphoric acid by solvent extraction processes”, *Chemical Reviews* **114** (24) 12002–12023 (2014).
- A43 G. J-P. Deblonde, A. Moncomble, G. Cote, S. Bélaïr, A. Chagnes, “Experimental and computational exploration of the UV-visible properties of hexaniobate and hexatantalate ions”, *RSC Advances* **5**, 7619-7627 (2015).
- A44 V. T. Nguyen, J.-C. Lee, J. Jeong, B.-S. Kim, G. Cote, A. Chagnes, “Extraction of gold(III) from acidic chloride media using phosphonium based ionic liquid as a novel anion exchanger”, *Industrial and Engineering Chemistry Research* **54** (4), 1350-1358 (2015).
- A45 D. Cholico-Gonzalez, A. Chagnes, G. Cote, M. Avila-Rodriguez, “Separation of Co(II) and Ni(II) from aqueous solutions by bis(2,4,4-trimethylpentyl)phosphinic acid (Cyanex 272) using trihexyl(tetradecyl)phosphonium chloride (Cyphos IL 101) as solvent”, *Journal of Molecular Liquids* **209**, 203-208 (2015).
- A46 G. J-P. Deblonde, A. Chagnes, S. Bélaïr, G. Cote, “Solubility of niobium(V) and tantalum(V) under mild alkaline conditions”, *Hydrometallurgy* **156**, 99-106 (2015).
- A47 G.J-P. Deblonde, N. Delaunay, A. Chagnes, G. Cote, P. Gareil, “First investigation of polyoxoniobate and polyoxotantalate aqueous speciation by capillary zone electrophoresis”, *RSC Advances* **5**, 64119-64124 (2015).
- A48 A. Dartiguelongue, E. Provost, A. Chagnes, G. Cote, W. Fürst, “Experimental determination and modeling of the speciation of Uranium (VI) in phosphoric acid medium”, *Solvent Extraction and Ion Exchange* **34** (3), 241-259 (2016).
- A49 R. M. Rios-Vera, J. Sirieix-Plénet, L. Gaillon, C. Rizzi, M. Avila-Rodríguez, G. Cote, A. Chagnes, “Physicochemical properties of novel cholinium ionic liquids for the recovery of silver from nitrate media”, *RSC Advances* **5**, 78268-28277 (2015).
- A50 A. Dartiguelongue, A. Chagnes, E. Provost, G. Cote, W. Fürst, “Modelling of uranium(VI) extraction by D2EHPA/TOPO from phosphoric acid within a wide range of concentrations”, *Hydrometallurgy* **165**, 57–63 (2016).
- A51 G.J-P. Deblonde, A. Chagnes, V. Weigel, G. Cote, “Direct recovery of niobium and tantalum from alkaline solutions using calcium-bearing reagents”, *Hydrometallurgy* **165** (2), 345–350 (2016).
- A52 G.J-P. Deblonde, A. Chagnes, G. Cote, J. Vial, I. Rivals, N. Delaunay, “Development of a capillary electrophoresis method for the analysis in alkaline media of two strategic metals: niobium and tantalum”, *Journal of Chromatography A* **1437** (11), 210–218 (2016).
- A53 G. J-P. Deblonde, C. Coelho-Diogo, A. Chagnes, G. Cote, M. E. Smith, J. V. Hanna, D. Iuga, C. Bonhomme, “Multinuclear solid state NMR investigation of hexaniobate and hexatantalate compounds”, *Inorganic Chemistry* **55** (12), 5946–5956 (2016).
- A54 V. T. Nguyen, J.-c Lee, A. Chagnes, Min-seuk Kim, J. Jeong, G. Cote, “Highly Selective Separation of Individual Platinum Group Metals (Pd, Pt, Rh) from Acidic Chloride Media using Phosphonium-based Ionic Liquid in Aromatic Diluent”, *RSC Advances* **6**, 62717-62728 (2016).
- A55 S. Gmar, A. Chagnes, I. Ben Saleh Sayedi, J-F. Fauvarque, M. Tlili, M. Ben Amor, “Modelling of water desalination by electro dialysis processes”, *Separation and Purification Technology* **52** (3), 574–581 (2017).
- A56 G. J-P. Deblonde, A. Chagnes, M.-A. Roux, V. Weigel, G. Cote, “Extraction of Nb(V) by quaternary ammonium-based solvents: toward organic hexaniobate systems”, *Dalton Transactions* **45**, 19351-19360 (2016).

- A57 O. Larbi-Bouamrane, Y. Bal, S. Aliouche, G. Cote, A. Chagnes, "Preparation and Characterization of Cross-linked Chitosan Microcapsules for Controlled Delivery of Oxytetracycline", *Indian Journal of Pharmaceutical Science*, *Indian J Pharm Sci* **78** (6), 715-724 (2016).
- A58 K. Omelchuk, P. Szczepański, A. Shrotre, M. Haddad, A. Chagnes, "Effects of structural changes of new organophosphorus cationic exchangers on solvent extraction of cobalt, nickel and manganese from acidic chloride media", *RSC Advances* **7**, 5660-5668 (2017).
- A59 M. Campos Assuncao, G. Cote, M. Andre, H. Halleux, A. Chagnes, "Phosphoric acid recovery from concentrated aqueous feeds by a mixture of di-isopropyl ether (DiPE) and tri-n-butylphosphate (TBP): Extraction data and modelling", *RSC Advances* **7**, 6922-6930 (2017).
- A60 G. Yang, V. Pointeau, E. Tevissen, A. Chagnes, "A review on clogging of recirculating steam generators in Pressurized-Water Reactors", *Progress in Nuclear Energy* **97**, 182-196 (2017).
- A61 B. Flamme, G. Rodriguez Garcia, M. Weil, M. Haddad, P. Phansavath, V. Ratovelomanana-Vidal, A. Chagnes, "Guidelines to Design Electrolytes for Lithium-ion Batteries: Environmental Impact, Physicochemical and Electrochemical Properties", *Green Chemistry* **19**, 1828-1849 (2017).
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- Meeting on Ionic Liquids 2016 (Bangkok, Thailand), 9-13 November 2016, "Ionic Liquids for Liquid-liquid extraction: example of cholinium for the recovery of silver".
- O43 A. Chagnes, NAMES'16, 5th International Conference, New Achievements in Materials and Environmental Sciences (Nancy, France), November 7-9 2016, "Challenges in Lithium-ion batteries recycling".
- O44 G. Yang, V. Pointeau, E. Tevissen and A. Chagnes, The 17th International Topical Meeting on Nuclear Reactor Thermal Hydraulics (NURETH-17, Xi'an, China), 3-8 September 2017, "*Experimental and numerical investigation of PWR Tube Support Plate (TSP) clogging formation mechanisms*".
- O45 P. Minois, A. Chagnes, L. Svecova, M.-O. Lupsea, P.-X. Thivel, 11th European Symposium on Electrochemical Engineering (Prague, Czech Republic), 4-8 June 2017, "*Feasibility of electro-assisted leaching of cathodes from spent lithium batteries – Comparison with acid leaching*".
- O46 A. Hubau, A.-G. Guezennec, M. Minier, A. Chagnes, 22th International Biohydrometallurgy Symposium, 24-27 September 2017, Freiberg (Allemagne), "*Establishment of an iron-oxidizing culture of acidophilic micro-organisms for bioleaching of waste electrical and electronic equipment (WEEE)*".
- O47 B. Flamme, M. Haddad, P. Phansavath, V. Vidal, A. Chagnes, 232nd ECS Meeting, October 1-6, 2017, Washington Harbour (USA) "*Design and syntheses of new dipolar organic aprotic solvents for 5V lithium-ion batteries*".
- O48 K. Omelchuk, M. Stambouli, A. Chagnes, The 21st International Solvent Extraction Conference (ISEC 2017), November 5- 9, 2017, Miyazami (Japan), "*Diphasic acid-basic properties of new organophosphorus extractants*".
- O49 K. Omelchuk, M. Haddad, A. Chagnes, The 21st International Solvent Extraction Conference (ISEC 2017), November 5-9, 2017, Miyazami (Japan), "*Investigation of the extraction properties of new cationic exchangers for the selective recovery of cobalt, nickel and manganese from acidic chloride solution.*".
- O50 A. Hubau, M. Minier, A. Chagnes, A.G. Guezennec, Biohydrometallurgy '18, June 11-13 2018, Namibia, "Double-stage continuous bioreactor for the bioleaching of printed circuit boards (PCBs) to recover metals with acidophilic micro-organisms".
- O51 A. Chagnes, K. Omelchuk, Extraction 2018, Symposium Hydrometallurgy 2018, 26-29 Août 2018, Ottawa (Canada), "*Liquid-liquid extraction of cobalt(II), nickel(II) and manganese(II) from acidic chloride media*".
- O52 B. Flamme, M. Haddad, P. Phansavath, V. Vidal, A. Chagnes, Circular Economy of Battery – Production and Recycling, 24-26 September 2018, Goteborg (Sweden), "*Investigation of new sulfones as solvent in lithium-ion batteries*".
- O53 B. Simon, C. Bouyer, S. De Sio, C. Berthon, F. Miserque, N. Boubals, A. Chagnes, L. Berthon, 5th International Conference on Methods and Materials for Separation Processes: Separation Science – Theory and Practice 2018, 26-30 August 2018, Swieradow Zdroj (Pologne), "*Effect of irradiation on palladium behaviour in the TBP-alkane-organic phase*".
- O54 A. Hubau, A. Chagnes, M. Minier, A.-G. Guezennec, 18th International Biotechnology Symposium and Exhibition (IBS 2018), 12-17 August 2018, Montréal (Canada), "*Metal recovery from printed circuit boards (PCBs) by acidophilic bioleaching*".
- O55 A. Bittner, A. Chagnes, G. Giffin, E. Gloaguen, Critical Raw Materials for Electric Vehicles (CRM4EV), 21 May 2019, "*Sustainable Lithium in Europe*".

Non-invited conference in national meetings (17)

- O56 A. Chagnes, C. Mialkowski, B. Carré, D. Lemordant, V. Agafonov, P. Willmann, Journée des équilibres entre phases (22-23 March 2001), Montpellier (France) "*Diagramme de phase du mélange lactone – carbonate*".
- O57 A. Chagnes, C. Mialkowski, B. Carré, D. Lemordant, V. Agafonov, G. Oudou, P. Willmann, Journée scientifique de la section Centre Ouest (18 January 2002), Limoges (France), "*Etude des diagrammes de phase γ -butyrolactone - Dimethyl Carbonate et γ -butyrolactone - Ethylene Carbonate*".
- O58 A. Chagnes, B. Carré, D. Lemordant, P. Willmann, Journées des chercheurs du CNES (24-26 April 2002), Toulouse (France), "*Etude d'un électrolyte à base de γ -butyrolactone pour accumulateur rechargeable au lithium*".
- O59 A. Chagnes, G. Cote, Hydrométallurgie et Biohydrométallurgie, Journées Techniques de la Société de l'Industrie Minérale (23 March 2006), Paris (France), "*Utilisation de Milieux Atypiques pour la Séparation de Cations Métalliques par Extraction par Solvant*".
- O60 A. Chagnes, G. Cote, B. Courtaud, J. Thiry, Meeting of French Geological Society, Uranium : Geology, geophysics, chemistry (29-30 November 2010), Université de Paris XI, Orsay (France), "*L'Amont du Cycle Nucléaire : de la Molécule au Procédé*".
- O61 C. Pereira-Nabais, J. Światowska, A. Chagnes, François Ozanam, Costel-Sorin Cojocar, Aurélien Gohier, Michel Cassir, Philippe Marcus, Lithium Batteries Discussion 2011 (12-17 June 2011), Arcachon (France) « *Study of electrode-electrolyte interface in silicon nanowires* ».
- O62 D. Beltrami, A. Chagnes, H. Mokhtari, B. Courtaud, J. Thiry, G. Cote, Colloque de Recherche de Recherche de la Fédération Gay-Lussac (22-24 November 2011), ECPM, Strasbourg (France), "*L'uranium issu des ressources non conventionnelles pour une énergie durable*".
- O63 J. Swiatowska, F. Liao, C. Pereira-Nabais, V. Maurice, A. Chagnes, S. Zanna, A. Seyeux, L.H. Klein, M.

- Cassir, P. Marcus, Journée « Batteries » en Ile de France (12 June 2012), Paris (France), *"Interfacial mechanisms in lithium ion batteries studied by X-ray photoelectron spectroscopy and time-of-flight secondary ion mass spectrometry"*.
- O64 D. Beltrami, A. Chagnes, H. Mokhtari, B. Courtaud, G. Cote, ATALANTE 2012 – Nuclear Chemistry for Sustainable Fuel Cycles (2-7 September 2012), Montpellier (France), *"New extractants for the recovery of uranium from wet phosphoric acid"*.
- O65 D. Beltrami, A. Chagnes, Hamid Mokhtari, Bruno Courtaud, G. Cote, XIIIe journées nationales de radiochimie et de chimie nucléaire (4-5 October 2012), Laboratoire SUBATECH, Nantes (France), *"Synthèse et caractérisation de nouveaux extractants pour la récupération de l'uranium contenu dans l'acide phosphorique obtenu par voie humide"*.
- O66 E. Nanini-Maury, A. Chagnes, J. Światowska, P. Tran-Van, P. Marcus, M. Cassir, Groupe Français d'Étude des Composés d'Insertion (GFECI 2013), 18-21 March 2013 à Chambon-sur-Lac, *"Formulation d'un électrolyte liquide pour caractériser les propriétés électrochimiques d'électrodes des électrodes positives à haut potentiel"*.
- O67 E. Nanini-Maury, J. Światowska, A. Chagnes, P. Tran-Van, S. Zanna, P. Marcus, M. Cassir, LiBD 2013, 16-21 June 2013, Arcachon (France), *"Oxidation behavior of sebaconitrile based electrolytes on inert electrode and active materials"*.
- O68 E. Nanini-Maury, J. Światowska, A. Chagnes, P. Tran-Van, S. Zanna, P. Marcus, M. Cassir, Groupe Français des Composés d'Insertion (GFECI), 18-21 March 2013, Chambon sur Lac (France), *"Formulation d'un électrolyte liquide à base de sébaconitrile pour caractériser les propriétés électrochimiques des électrodes positives à haut potentiel"*.
- O69 N. Lespes, V. Tognetti, B. Flamme, A. Chagnes, L. Joubert, Rencontre de Chimistes Théoriciens Francophones (RCTF 2016), 27 June-1st July 2016, Lyon (France), *"Mécanismes de dégradation de nouveaux électrolytes à haut potentiel pour les batteries Li-ions"*
- O70 A. Hubeau, A.-G. Guezennec, M. Minier, A. Chagnes, Société Française de Génie des Procédés 2017, 11-13 July 2017, Nancy (France), *"Biolixiviation de déchets d'équipements électriques et électronique (DEEE) par une culture ferro-oxydante de micro-organismes acidophiles"*.
- O71 A. Hubeau, A.G. Guezennec, M. Minier, A. Chagnes, Société Française de Génie des Procédés 2017, 11-13 July 2017, Nancy (France), *"Mise en place d'une méthode d'échantillonnage et de caractérisation de déchets de cartes électroniques en vue de la réalisation de bilans de matières lors de l'étude de nouveaux procédés de traitements"*.
- O72 A. Hubeau, M. Minier, A. Chagnes, 7^{èmes} journées des Doctorants, 3-4 April 2018, Orléans (France), *"Biolixiviation de déchets de circuits imprimés pour la récupération de métaux d'intérêt"*.

Invited conference in international meetings (10)

- O73 G. Cote, A. Chagnes, Proceeding of Symposium on Emerging Trends in Separation Science and Technology (SESTEC 2010), Indira Gandhi Centre for Atomic Research (1-4 March 2010), Kalpakkam (India), *"Potentialities and limits of QSPR and molecular modeling in the design of the extraction solvents used in hydrometallurgy"*.
- O74 A. Chagnes, D. Beltrami, H. Mokhtari, B. Courtaud, J. Thiry, G. Cote, 243th National American Chemical Society Meeting 2012, Fundamentals & Applications in Hydrometallurgy: From the Molecule to the Process (25-29 March 2012), San Diego (Californie, USA), *"Modelling of the extraction properties of uranium (VI) from concentrated phosphoric acid by a synergistic mixture of bis-(-2-ethylhexyl)-phosphoric acid and trioctylphosphine oxide"*.
- O75 G. Cote, A. Chagnes, 243th National American Chemical Society Meeting 2012, Fundamentals & Applications in Hydrometallurgy: From the Molecule to the Process (25-29 March 2012), San Diego (Californie, USA), *"Cruds formation in solvent extraction systems"*.
- O76 A. Chagnes, G. Cote, International Conference on Processing of Lean Grade and Urban Ores, IG-LGO 2015 (Jamshedpur, India), 20-22 January 2015, *"Highlights on uranium recovery from conventional and non-conventional resources"* (keynote).
- O77 A. Chagnes, G. Cote, International Conference on Processing of Lean Grade and Urban Ores, IG-LGO 2015 (Jamshedpur, India), 20-22 January 2015, *"Hydrometallurgy in Europe"* (plenary).
- O78 A. Chagnes, G. Cote, Pacificchem 2015: Coordination and Supramolecular Chemistry for Aqueous Metal Ion Separations (Honolulu, Hawaii, USA), 15-20 December 2015, *"Recycling processes of lithium-ion batteries"*.
- O79 A. Chagnes, A. Dartiguelongue, D. Beltrami, E. Provost, W. Furst, G. Cote, 3rd International conference on methods and materials for separation processes: Separation Science – Theory and Practice 2015 (Karpacz, Poland), 6-10 September 2015, *"New Highlights on uranium recovery from phosphoric acid: from fundamental science to process"*.
- O80 A. Chagnes, Konferens för Batterifondsprogrammet 2016 (Göteborg, Sweden), Battery research program – Swedish Agency of Energy, 6 April 2016, *"Recycling of Lithium ion batteries"*.
- O81 A. Chagnes, K. Omelchuk, International Workshop: Geochemical cycle of Ni, Co and Sc from mining exploration to ecotoxicity (Vandoeuvre-lès-Nancy, France), 17-19 October 2017, *"Modelling of liquid-liquid"*

extraction of cobalt, nickel and manganese from acidic chloride media".

- O82 A. Chagnes, R&D Stream Lithium-Ion Development & Commercialization Delivering Higher Performance at Lower Cost (FortLauderdale, Florida, USA), 28-29 March 2018, "Challenges for the development of sustainable Lithium-ion batteries".

Invited conference in national meetings (8)

- O83 D. Beltrami, A. Chagnes, H. Mokhtari, B. Courtaud, G. Cote, Areva Mines (Bessines sur Gartempe, France), 4-6 December 2012, "Extraction de l'uranium contenu dans l'acide phosphorique industriel: conception de nouvelles molécules extractantes et études physico-chimique des systèmes d'extraction associés".
- O84 A. Chagnes, G. Cote, N. Syna, B. Courtaud, J. Thiry, Areva Mines (Bessines sur Gartempe, France), 5-6 December 2012, "Physicochimie du vieillissement du solvant Cominak".
- O85 A. Chagnes, Journée Promotion Procédés Produits, ENSIC (Nancy, France), 8 July 2014, "Extraction de l'uranium dans l'acide phosphorique industriel".
- O86 A. Chagnes, Forum du CNRS, "Que reste-t-il à découvrir ?", Sorbonne (Paris, France), 13 Novembre 2015, "Recyclage des batteries lithium-ion : Enjeux et verrous".
- O87 A. Chagnes, Journées Scientifiques de Marcoule 2016 (CEA de Marcoule, France), 1-2 juin 2016, "Physicochimie des procédés hydrométallurgiques pour une meilleure gestion des ressources: Cas de l'uranium, du niobium et du tantale issus de ressources conventionnelles et non conventionnelles".
- O88 A. Chagnes, CNRS Thematic School « Geochemical cycle of metals » (Nancy, France), 2-4 October 2018, "Introduction à la métallurgie extractive pour le traitement des minerais et des résidus".
- O89 A. Chagnes, 9^{ème} Journée thématique « Batterie Lithium Ile de France », 13 December 2018, auditorium de l'ICMPE, Thiais (France), "La place de l'hydrométallurgie dans l'approvisionnement durable en ressources – Cas des batteries lithium-ion".
- O90 A. Chagnes, Journée technique de la SIM-Groupe MiME « Les métaux du défi énergétique : métallurgie de la ressource », 4 Avril 2019, ENSCP, Paris (France), "L'hydrométallurgie des métaux entrant et sortant de nos batteries".

Invited conference in national seminars (12)

- O91 A. Chagnes, G. Cote, Université de Bourgogne (Dijon, France), 5 November 2008, "L'Amont du Cycle Nucléaire: de la Molécule au Procédé".
- O92 A. Chagnes, Eramet Research (Trappes, France), 26 April 2012, "La chimie au service de l'énergie : hydrométallurgie et stockage d'énergie".
- O93 D. Beltrami, A. Chagnes, Réunion du GT 32 Spéciation, CETAMA (Paris, France), 4 April 2013, "Extraction de l'uranium contenu dans l'acide phosphorique : défis et challenges".
- O94 A. Dartiguelongue, E. Provost, A. Chagnes, W. Fürst, G. Cote, Seminar on uranium chemistry in aqueous solutions (Avignon, France), 30 september-1st october 2014 "Uranium(VI) chemistry in phosphoric acid media".
- O95 A. Chagnes, Seminar des professeurs de classes préparatoires (ENSCP, Paris), 29 May 2015, "Physicochimie des procédés hydrométallurgiques".
- O96 A. Chagnes, Seminar à l'Ecole Nationale Supérieure de Géologie-Laboratoire Géorressources (Nancy, France), 16 February 2016, "Optimisation des Procédés d'extraction solvant : jouer sur le procédé et sur la chimie du procédé".
- O97 A. Chagnes, Seminar at ENSCP-ESPCI (Paris, France), 30 May 2016, "Challenges dans les procédés de recyclage pour une ville durable : cas du recyclage des batteries lithium-ion".
- O98 A. Chagnes, Air France industrie (Orly and Charles de Gaulle Airports, Paris, France), Series of 4 conferences for the staff of Air France Industrie on the 09/01/2017 and 06/03/2017, "Challenges pour le stockage durable de l'énergie : Développement de la technologie Lithium-ion et recyclage".
- O99 A. Chagnes, GeoRessources (Vandoeuvre-les-Nancy), 23 March 2017, Trans-disciplinary Research on Iranian Geology, Geodynamics, Earthquakes and Resources (TRIGGER), "Valorisation des résidus miniers de la région de Kerman en Iran : Des objectifs scienti ques au montage de projet".
- O100 A. Chagnes, CEA Marcoule (Bagnole sur Cèze), 24 October 2017, "Comprendre la physicochimie des procédés d'extraction liquide-liquide à des fins d'optimisation : Design de Molécules et de Schémas de procédés".
- O101 A. Chagnes, Institut Jean Lamour (Université de Lorraine, Nancy), 13 Mai 2019, "Recent advances in hydrometallurgy for the development of a sustainable production of lithium-ion batteries".
- O102 A. Chagnes, Laboratoire d'Energétique et de Mécanique Théorique et Appliquée, 13 Juin 2019, "La place de l'hydrométallurgie dans l'approvisionnement durable en ressources : Cas des batteries lithium-ion".

Invited conference in international Seminars (19)

- O103 A. Chagnes, G. Cote, Société Cominak, 'Arlit, Niger), 15 March 2008, "Processus de vieillissement du solvant d'extraction de l'usine du Niger".
- O104 A. Chagnes, G. Cote, Société Somair, (Arlit, Niger), 25 April 2008, "Processus de vieillissement des solvants

- d'extraction* ".
- O105 A. Chagnes, G. Cote, Centre de Recherche en Electrochimie et Electrocatalyse (CREE), Université de Sherbrooke (Quebec, Canada), 6 August 2008, "*Processus de vieillissement des solvants d'extraction dans les usines de production d'uranium*".
- O106 A. Chagnes, G. Cote, Ecole Polytechniques Fédérale de Lausanne (Lausanne, Suisse), 7 September 2009, "*Challenges in Solvent Extraction Processes – Application to a Process Implemented in a Niger Plant for the Production of Uranium*".
- O107 A. Chagnes, Oak Ridge National Laboratory (Oak Ridge, Tennessee, USA), 27 October 2010, "*Challenges in Solvent Extraction Processes – Application to a Process Implemented in a Niger Plant for the Production of Uranium*".
- O108 A. Chagnes, University of Guanajuato (Guanajuato, Mexico), 7 April 2011, "*Chemistry for the Energy: The physicochemistry involved in Hydrometallurgy and Li-ion Batteries*".
- O109 A. Chagnes, University of Guanajuato (Guanajuato, Mexico), 29 March 2011, "*Modelling of the extraction properties of uranium (VI) from concentrated phosphoric acid by a synergistic mixture of bis-(-2-ethylhexyl)-phosphoric acid and trioctylphosphine oxide*".
- O110 A. Chagnes, D. Beltrami, H. Mokhtari, B. Courtaud, J. Thiry, G. Cote, University of Guanajuato (Guanajuato, Mexico), 6 March 2012, "*Extraction properties of uranium (VI) from concentrated phosphoric acid by a synergistic mixtures of D2EHPA and TOPO*".
- O111 G. Cote, A. Chagnes, University of Guanajuato (Guanajuato, Mexico), 6 March 2012, "*Cruds formation in solvent extraction systems*".
- O112 A. Chagnes, University of Guanajuato (Guanajuato, Mexico), 21 February 2013, "*Hydrometallurgical Processes: Sustainable production of strategic metals*".
- O113 A. Chagnes, Chalmers University (Göteborg, Sweden), 16 August 2013, "*R&D on Hydrometallurgy at Chimie Paristech*".
- O114 A. Chagnes, G. Cote, Korea Institute of Geoscience and Mineral Resources (KIGAM, Dae-jun, South Korea), 23 August 2014, "*Solvent extraction of uranium from conventional and non-conventional resources*".
- O115 G. Cote, A. Chagnes, Korea Institute of Geoscience and Mineral Resources (KIGAM, Dae-jun, South Korea), 23 August 2014, "*Hydrometallurgy in Europe*".
- O116 A. Chagnes, Reference group meeting "Recycling of metals from spent Li-ion batteries" (Swedish research organization, Lulea University of Technology, KTH, Chalmers University of Technology, Stena Recycling International, Goteborg, Sweden), 7 May 2015, "*Lithium-ion batteries recycling*".
- O117 A. Chagnes, CSIR-National Metallurgical Laboratory (Jamshedpur, India), 02 March 2016, "*Challenges in Lithium-ion batteries recycling*".
- O118 A. Chagnes, University of Guanajuato (Guanajuato, Mexico), 24 November 2015, Seminar on Separation Science, "*Recycling processes of Lithium-ion batteries*".
- O119 A. Chagnes, Argonne National Laboratory (Chicago, USA), 24 June 2016, "*Lithium-ion batteries recycling processes: challenges and drawback*".
- O120 A. Chagnes, Atlantic Copper University Chair – Academic courses (Madrid, Spain), 15 December 2016, "*Solvent Extraction Processes for Recovery of strategic and critical metals*".
- O121 A. Chagnes, University of Queensland (Brisbane, Australia), 24 May 2019, "*Recent advances in hydrometallurgy for the development of a sustainable production of lithium-ion batteries*".

POSTER PRESENTATIONS (41)

- P1 A. Chagnes, I. Geoffroy, B. Carré, D. Lemordant, P. Willmann, Journées d'électrochimie 1999 (June 1-4, 1999), Toulouse (France), "*Etude thermodynamique d'un électrolyte pour accumulateur au lithium*"
- P2 A. Chagnes, I. Geoffroy, B. Carré, D. Lemordant, P. Willmann, colloque du CEA de Mont (June 16, 1999), Tours (France), "*Electrolytes à base de lactone utilisables dans les accumulateurs au lithium à basse température*"
- P3 A. Chagnes, B. Carré, D. Lemordant, P. Willmann, Ecole Supérieure de l'Energie et des Matériaux, colloque sur l'Energie et l'environnement (January 19, 2000), Orléans (France), "*Conductivité des milieux électrolytiques, aspects énergétiques*"
- P4 A. Chagnes, B. Carré, D. Lemordant, P. Willmann, 10th International Meeting on Lithium Batteries (IMLB) "Lithium 2000" (June 28-July 2, 2000), Cosmo (Italia), "*Viscosities, conductivities and activation energies for transport process in liquid electrolytes. The quasi lattice approach*"
- P5 C. Mialkowski, A. Chagnes, B. Carré, D. Lemordant, P. Willmann, SFC 2000 (September 18-22, 2000), Rennes (France), "*Etude thermodynamique et électrochimique des mélanges de gamma-butyrolactone et de diméthyl carbonate en vue d'une utilisation comme électrolyte organique*"
- P6 A. Chagnes, B. Carré, D. Lemordant, P. Willmann, SFC 2000 (September 18-22, 2000), Rennes (France), "*Modélisation des propriétés de transport des électrolytes organiques concentrés destinés à être utilisés dans les générateurs lithium ion*"
- P7 C. Mialkowski, A. Chagnes, B. Carré, D. Lemordant, P. Willmann, Congrès G. Planté, CNAM (October 30-

- 31, 2000), Paris (France), "*Electrolytes à bases de gamma-butyrolactone et de diméthyl carbonate pour accumulateur lithium ion.*"
- P8 C. Mialkowski, A. Chagnes, B. Carré, D. Lemordant, P. Willmann, Journée scientifique SFC: Aspects modernes des techniques d'analyses élémentaires et structurales (June 21-22, 2001), La Rochelle (France), "*Analyse viscosimétrique et conductimétrique d'électrolytes organiques concentrés*"
- P9 C. Mialkowski, A. Chagnes, B. Carré, D. Lemordant, V. Agafonov, P. Willmann, Journée scientifique SFC : Aspects modernes des techniques d'analyses élémentaires et structurales (June 21-22, 2001), La Rochelle (France), "*Analyse par calorimétrie différentielle à balayage et diffraction des rayons X aux basses températures des mélanges butyrolactone - diméthyl carbonate*"
- P10 A. Chagnes, B. Carré, P. Willmann, D. Lemordant, Groupe Français d'Etude des Composés d'Intercalation (March 19-21, 2002), Orléans (France), "*Etude d'un nouvel électrolyte à base de butyrolactone pour accumulateur au lithium*".
- P11 A. Chagnes, B. Carré, D. Lemordant, P. Willmann, Journées des Chercheurs du CNES (April 24-26, 2002), Toulouse (France), "*Modélisation de la conductivité avec la température dans le modèle du pseudo réseau ionique*"
- P12 A. Chagnes, B. Carré, P. Willmann, D. Lemordant, 11th IMLB on Lithium Batteries (June 22-28, 2002), Monterrey (California, USA), "*Cycling ability of LiBF₄ and LiPF₆ in γ -butyrolactone – ethylene carbonate based electrolytes.*"
- P13 A. Chagnes, B. Carré, P. Willmann, D. Lemordant, 11th IMLB on Lithium Batteries (June 22-28, 2002), Monterrey (California, USA), "*Electrolytic characteristics of γ -butyrolactone – ethylene carbonate based electrolytes*"
- P14 A. Chagnes, F. Laplante, F. Kerdouss, P. Proulx, H. Ménard, Electrochemical Society meeting: Material electrochemistry, composition, structure and properties (March 10-13, 2003), Toronto (Canada), "*Experimental and computational investigation of the electrocatalytic hydrogenation of phenol in an electrochemical cell.*"
- P15 A. Chagnes, A. Tougui, B. Carré, D. Lemordant, Journée Scientifique de la Société Française de Chimie (January 20, 2004), Limoges (France), "*Comportement Atypique de la Viscosité des mélanges nitrate d'éthylammonium-Méthanol.*"
- P16 M. Diaw, A. Chagnes, B. Carré, P. Willmann, D. Lemordant, 12th IMLB Meeting On Lithium Batteries (June 27-July 2, 2004), Nara (Japan), "*Mixed Ionic Liquid as Electrolyte for Lithium Batteries.*"
- P17 R. J. Papoular, H. Allouchi, A. Chagnes, A.V. Dzyabchenko, B. Carré, D. Lemordant, V. Agafonov, 19^{ème} Journées des équilibres entre phases (March 31-April 1, 2005), Barcelona (Spain), "*X-ray Powder Diffraction Structure Determination of γ -butyrolactone at 180 K. Phase problem solution from the lattice energy minimization with two independent molecules*".
- P18 A. Chagnes, G. Cote, B. Carré, D. Lemordant, 57th Annual Meeting of the International Society of Electrochemistry (August 27-September 1, 2006), Edinburgh (Scotland), "*Solvent-Solvent and Ionic Liquid-Solvent Mixtures for Lithium Batteries*".
- P19 F. Rahmani, KE Bal, Y. Bal, A. Chagnes, G. Cote, 1st International Conference on Drug Design and Discovery (February 4-7, 2008), Dubai (United Arabs Emirates), "*Preparation Characterization and in-vitro Release of Gentamicin from Hydroxyapatite-Chitosan Biocomposite Bone Cement*".
- P20 Y. Bal, K.E. Bal, A. Chagnes, G. Cote, 11th International Mineral Processing Symposium (October 21-23, 2008), Belek-Antalya (Turkey), "*Biosorption Of Cu(II) Onto Encapsulated Streptomyces Biomass*".
- P21 A. Chagnes, L. Joubert, V. Lair, M. Cassir, C. Adamo, G. Cote, 11th International Mineral Processing Symposium (October 21-23, 2008), Belek-Antalya (Turkey), "*Thermodynamical and ab-Initio calculations of the solvent extraction Of Ti(IV)*"
- P22 A. Chagnes, G. Cote, J. Thiry, B. Courtaud, 11th International Mineral Processing Symposium (October 21-23, 2008), Belek-Antalya (Turkey), "*Chemical Degradation of Trioctylamine in n-Dodecane modified by tridecanol in presence of chromium(VI)*".
- P23 A. Prestianni, L. Joubert, C. Adamo, G. Cote, A. Chagnes, Marie-Christine Charbonnel, P. Moisy, Very Heavy Metals 2009 (May 27-June 1, 2009), Canet-Plage (France), "*A combined experimental and density functional theory study of nitrate uranyl(VI) monoamide complexes in gas and liquid phases*".
- P24 A. Chagnes, G. Cote, P. Willmann, D. Lemordant, LiBD 2009 (September 20-25, 2009), Arcachon (France), "*Solvent- Ionic Liquid Mixtures as Electrolyte for Lithium Batteries*"
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