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EDUCATION

PhD – UCCS laboratory, CISCO team, Univ. Lille (France)
2019 – 2022

Under supervision of Prof J.-M AUBRY and Prof V. NARDELLO-RATAJ
New methodologies for characterizing particles, complex oils and surfactants: relations between chemical structure, physicochemical properties and applicative properties.

MSc Formulation Chemistry and Engineering – ENSCL (France)
2018 – 2019

Chemical specialties, cosmetic formulation, polymers, paints and coatings.

Chemistry and Chemical Engineering Diploma – ENSCL (France)
2014 – 2019

Analytical, organic and mineral chemistry and chemical engineering. Specialized in formulation chemistry and physicochemistry of colloids and polymers.

EXPERIENCE

Postdoctoral Researcher – Department of Chemical and Pharmaceutical Engineering, Sofia University St. Kliment Ohridski (Bulgaria)
May 2023 – Present

SUMMIT Project. Rationalization of biobased surfactants foaming properties *via* surface and bulk properties.

- Aggregation behavior, dynamic, and equilibrium adsorbed layers.
- Foaming processes and thin liquid films.

Graduate Teaching and Research Assistant – Univ. Lille (France)
October 2022 – March 2023

- Supervision of MSc practical works and student projects: foams, liquid crystals, surface tension, rheology, emulsions, cosmetic formulation.
- Pigments and dyes MSc lecture.
- Research for cosmetic industrial partnerships.

PhD Researcher – UCCS laboratory, CISCO team, Univ. Lille (France)
September 2019 – September 2022

- Rationalization of nano-TiO₂ dispersions stability in nonaqueous media.
- Estimation of oils EACN values *via* neural networks.
- Foaming and emulsifying properties of a glycerol-based surfactant.

Lipid chemistry internship – ITERG, Canéjan (France)
March – August 2019

Synthesis of oleo-based polyesters, characterized and investigated as emulsifiers.

R&D internship – McBride S.A., Estaimpuis (Belgium)
June – August 2018

Analytical methods development for detergents and fabric care products.

Research internship – University of St Andrews (UK)
June – August 2017

Luminescent organometallic supramolecular assemblies: synthesis and investigation.

PUBLICATIONS

- Delforce, L.; Tcholakova, S. Role of temperature and urea for surface and foam properties of nonionic surfactants with dodecyl alkyl chain, *Colloids Surf. A Physicochem. Eng. Asp.* **2024**, 133844.
- Delforce, L.; Ontiveros, J. F.; Nardello-Rataj, V.; Aubry, J.-M. Rational design of O/W nanoemulsions based on the surfactant dodecyldiglycerol ether using the normalized HLD concept and the formulation-composition map, *Colloids Surf. A Physicochem. Eng. Asp.* **2023**, 671, 131679.
- Delforce, L.; Nardello-Rataj, V.; Lebeuf, R.; Aubry, J.-M.; Ontiveros, J. F. Self-aggregation, dilational surface rheology and foaming properties of 1-O-dodecyl diglycerol ether compared to *n*-dodecyl- β -D-maltoside and pentaethyleneglycol monododecyl ether. *J. Mol. Liq.* **2023**, 388, 122795.
- Delforce, L.; Duprat, A.; Ploix, J.-L.; Ontiveros, J. F.; Goussard, V.; Nardello-Rataj, V.; Aubry, J.-M. Fast Prediction of the Equivalent Alkane Carbon Number Using Graph Machines and Neural Networks. *ACS Omega* **2022**.
- Delforce, L.; Hofmann, E.; Nardello-Rataj, V.; Aubry, J.-M. TiO₂ nanoparticle dispersions in water and nonaqueous solvents studied by gravitational sedimentation analysis: Complementarity of Hansen Parameters and DLVO interpretations. *Colloids Surf. A Physicochem. Eng. Asp.* **2021**, 628, 127333.
- Mackenzie, C. F. R.; Delforce, L.; Rota Martir, D.; Cordes, D. B.; Slawin, A. M. Z.; Zysman-Colman, E. A Luminescent 1D Silver Polymer Containing [2.2]Paracyclophane Ligands. *Front. Chem.* **2021**, 9.
- Rota Martir, D.; Delforce, L.; Cordes, D. B.; Slawin, A. M. Z.; Warriner, S. L.; Jacquemin, D.; Zysman-Colman, E. A Pd₃L₆ supramolecular cage incorporating photoactive [2.2]paracyclophane units. *Inorg. Chem. Front.* **2019**, 7 (1), 232–238.