



Isabelle Schmitz



Research Engineer

Analysis and modelling team, Mass spectrometry and separation sciences group

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PROFESSIONAL EXPERIENCES

- 2014- Research Engineer at CNRS; COBRA Laboratory, Analysis and Modelling team, mass spectrometry group, Rouen Normandy University, France.
- 2002-2014 Research Engineer at CNRS; Natural Product Chemistry Institute, Analytical and Structural Chemistry and Biology department, Gif/Yvette, France.
- 2000-2002 Research Chemist at US Department of Agriculture, Agricultural Research Service, Environmental quality laboratory, Beltsville, USA.
- 1999-2000 Engineer at Research Center of Lyonnaise des Eaux, Le Pecq, France.
- 1998 Engineer at Cemagref, Lyon, France.

EDUCATION

- 1995-1997 Chemist Engineer, Superior National School of Chemistry of Rennes, France.
- 1993-1995 BSc Organic Chemistry, with distinction, University Paris XI, France.
- 1991-1993 Laboratory Technician Degree, Lycée Marie Curie, Nogent/Oise, France.

ADMINISTRATIVE & INSTITUTIONAL RESPONSIBILITIES

- 2017- Responsible of Rouen FTICR 12T access within the French National FTICR mass spectrometry infrastructure, FR3624.
- 2004- Safety assistant at CNRS-ICSN then CNRS-COBRA Laboratory.

RESEARCH INTERESTS

Research on mass spectrometry hyphenated methods and ultra-high-resolution mass spectrometry for life sciences: metabolomics, Mass Spectrometry Imaging and complex mixtures (planetology).

SCIENTIFIC ACHIEVEMENTS

Academic record (h-index: 16 in 2020)

2002-2020: 48 publications, 2 invited lectures (academia & industry)

MEMBERSHIPS OF SCIENTIFIC SOCIETIES

2020- Member of the executive board of Société Française de Spectrométrie de Masse.

CONFERENCES

Isabelle Schmitz-Afonso. Metabolite profiling by molecular networking, ion mobility and ultra-high resolution mass spectrometry. 2èmes Journées Scientifiques Root Days, Sep 2019, Mont-Saint-Aignan, France.

Isabelle Schmitz-Afonso, Candice Prévost, Abdelhakim Elomri, Carlos Afonso. Molecular networking and ion mobility in metabolites identification in a *Fagara heitzii* extract. Congrès Spectrométrie de Masse et Analyse Protéomique (SMAP, 2019), Sep 2019, Strasbourg, France.

Isabelle Schmitz-Afonso, Julien Maillard, Nathalie Carrasco, Thomas Gautier, Carlos Afonso. Comparison of soluble and insoluble organic matter in Titan's aerosols. EU FTICR-MS 1st Advanced User School, April 2019, Lisbon, Portugal.

Isabelle Schmitz-Afonso. Outils analytiques innovants. Les ateliers scientifiques de la Cosmetic Valley, Journée 'Innover en cosmétique en toute sécurité', Mars 2018, Le Havre, France.

Isabelle Schmitz-Afonso. Invited lecture. Nouveaux outils complémentaires pour l'analyse d'extraits de plantes : Couplage mobilité ionique – spectrométrie de masse. Journées Waters, Octobre 2016, Paris, France.

Isabelle Schmitz-Afonso. Invited lecture. Qualité / contrôle lors de la quantification : validation d'une méthode d'analyse en chromatographie couplée à la spectrométrie de masse. *Journées françaises de spectrométrie de masse (JFSM, 33, 2016)*, Sep 2016, Bordeaux, France.

Isabelle Schmitz-Afonso. Dereplication of an Annonaceous Acetogenin extract by LC-MS/MS using post-column lithium infusion. 29th LCMS Montreux Symposium, Nov 2012, Montreux, Switzerland.

PUBLICATIONS

<http://www.researcherid.com/rid/D-2168-2013>

<https://cv.archives-ouvertes.fr/ischmitz>

48 publications (2002-2020)

10 representative publications:

1. Unprecedented Molecular Diversity Revealed in Meteoritic Insoluble Organic Matter: The Paris Meteorite's Case. Danger G., Ruf A., Maillard J., Hertzog J., Vinogradoff V., Schmitt-Kopplin P., Afonso C., Carrasco N., Schmitz-Afonso I., Le Sergeant d'Hendecourt L., Remusat L. *The planetary science journal*, 1 (55), 2020. [10.3847/PSJ/abb60f](https://doi.org/10.3847/PSJ/abb60f)

2. A new optimization strategy for MALDI FTICR MS tissue analysis for untargeted metabolomics using experimental design and data modeling Ferey J., Marguet F., Laquerrière A., Marret S., Schmitz-Afonso I., Bekri S., Afonso C., Tebani A. *Analytical and Bioanalytical Chemistry*, 411 (17), 3891, 2019. [10.1007/s00216-019-01863-6](https://doi.org/10.1007/s00216-019-01863-6)
3. Determination of the collision cross sections of cardiolipins and phospholipids from *Pseudomonas aeruginosa* by traveling wave ion mobility spectrometry-mass spectrometry using a novel correction strategy Deschamps E., Schmitz-Afonso I., Schaumann A., Dé E., Loutelier-Bourhis C., Alexandre S. Afonso C. *Analytical and Bioanalytical Chemistry*, 411 (30), 8123, 2019. [10.1007/s00216-019-02194-2](https://doi.org/10.1007/s00216-019-02194-2)
4. Comparison of soluble and insoluble organic matter in analogues of Titan's aerosols Maillard J., Carrasco N., Schmitz-Afonso I., Gautier T., Afonso C. *Earth and Planetary science letters*, 495, 185, 2018. [10.1016/j.epsl.2018.05.014](https://doi.org/10.1016/j.epsl.2018.05.014)
5. Optimization of a liquid chromatography ion mobility-mass spectrometry method for untargeted metabolomics using experimental design and multivariate data analysis. Tebani A., Schmitz-Afonso I., Rutledge D.N., Gonzalez B.J., Bekri S., Afonso C., *Analytica Chimica Acta*, 913, 55-62, 2016. [10.1016/j.aca.2016.02.011](https://doi.org/10.1016/j.aca.2016.02.011)
6. New Insights on Profiling of Phorbol, Deoxyphorbol, Ingenol and Jatrophone Diterpene Esters by High Performance Liquid Chromatography coupled to Multiple Stage Mass Spectrometry Louis-Félix Nothias-Scaglia, Isabelle Schmitz-Afonso, Franck Renucci, Fanny Roussi, David Touboul, Jean Costa, Marc Litaudon, Julien Paolini *J Chrom A* 1422, 128, 2015.
7. Comparative plant sphingolipidomic reveals specific lipids in seeds and oil. Tellier F., Maia-Grondard A., Schmitz-Afonso I., Faure J.D. *Phytochemistry*, 103, 50, 2014. [10.1016/j.phytochem.2014.03.023](https://doi.org/10.1016/j.phytochem.2014.03.023)
8. Localisation and quantification of benzalkonium chloride in eye tissue by TOF-SIMS imaging and liquid chromatography mass spectrometry, Desbenoit N., Schmitz-Afonso I., Baudoin C., Laprévotte O., Touboul D., Brignole-Baudoin F., Brunelle A., *Analytical and Bioanalytical Chemistry*, 405 (12), 4039-4049, 2013. [10.1007/s00216-013-6811-7](https://doi.org/10.1007/s00216-013-6811-7)
9. Comprehensive characterization of Annonaceous acetogenins within a complex extract by HPLC-ESI-LTQ-Orbitrap® using post-column lithium infusion. Le Ven J., Schmitz-Afonso I., Lewin G., Laprévotte O., Brunelle A., Touboul D., Champy P. *Journal of Mass Spectrometry*, 47 (11), 1500-9, 2012. [10.1002/jms.3092](https://doi.org/10.1002/jms.3092)
10. Determination of alkylphenol and alkylphenoethoxylates in biota by liquid chromatography with detection by tandem mass spectrometry and fluorescence spectroscopy. Schmitz-Afonso I., Loyo-Rosales J., Aviles M.P., Rattner B.A., Rice C.P. *Journal of Chromatography A*, 1010 (1), 25, 2003. [10.1016/s0021-9673\(03\)00956-7](https://doi.org/10.1016/s0021-9673(03)00956-7)