

# ALIN-CONSTANTIN DÎRȚU

## Research Area of Interest

- **Analytical chemistry** of the persistent organic pollutants and of their metabolites from biological samples;
- **Organohalogenated contaminants metabolism:** evaluation of the metabolism pathways by using “*in vitro*” exposure methods and “*in vivo*” monitoring;
- **Toxicology of the organic pollutants:** evaluation of the human exposure sources/pathways to multiple organic contaminants.



(b.1977)

**Analytical chemistry of the persistent organic contaminants:** analytical methodologies for the biological samples (pre)treatment concerning extraction, clean-up and instrumental analysis (GC/MS or LC/MS) of the organohalogenated contaminants and of their metabolites;

**Organohalogenated contaminants metabolism:** evaluation of the contaminants metabolism pathways by the use of comparative „*in vitro*” exposure studies and the monitoring of the potential metabolites in multiple biological matrices (serum, liver, other tissues);

**Persistent organic pollutants „*in vivo*” monitoring:** biological matrices analysis for the identification and quantification of the organochlorinated pesticides, polychlorinated biphenyls, brominated flame retardants and of their hydroxylated metabolites as well as non-persistent chemicals (phthalates) metabolites;

**Toxicology of the organic contaminants:** evaluation of the human exposure sources/pathways to several organohalogenated contaminants through their quantification in food, indoor dust and air and further comparison of the ingestion figures with their corresponding reference doses.

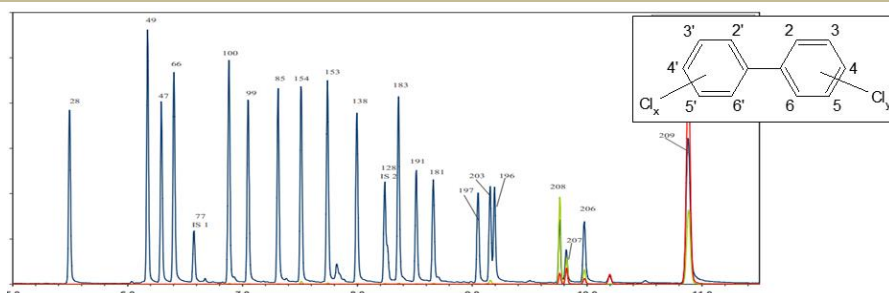
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Analytical chemistry

Analytical toxicology



PhD:

„Alexandru Ioan Cuza”  
University, Iași, 2009.

Post-doctoral  
research stages:

Toxicological Centre,  
University of Antwerp,  
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## Publications (selection, book chapters)

Weijjs, L., **Dirtu, A.C.**, Malarvannan, G., Covaci, A., Bioaccumulation and Biotransformation of Brominated Flame Retardants. *Comprehensive Analytical Chemistry* 67, 433-491, **2015**.

**Dirtu, A.C.**, Ionas, A.C., Malarvannan, G., Covaci, A., Chapter: Transformation Products of Brominated Flame Retardants (BFRs). Book: *Transformation Products of Emerging Contaminants in the Environment: Analysis, Processes, Occurrence, Effects and Risks*, John Wiley & Sons, Inc. pp. 557-580, **2014**.

Covaci, A., Geens, T., Roosens, L., Ali, N., Van den Eede, N., Ionas, A.C., Malarvannan, G., **Dirtu, A.C.**, Chapter: Human exposure and health risks to emerging organic contaminants. Book: *The Handbook of Environmental Chemistry, 20 - Emerging organic contaminants and human health*. ISBN: 978-3-642-28131-0, Springer-Verlag Berlin Heidelberg, pp 243-306, **2012**.

Covaci, A., **Dirtu, A.C.**, Voorspoels, S., Roosens, L., Lepom, P., Chapter: Sample preparation and chromatographic methods applied to congener-specific analysis of polybrominated diphenyl ethers. Book: *The Handbook of Environmental Chemistry – Brominated Flame Retardants (BFRs)*, ISBN: 978-3-642-19268-5, Springer-Verlag Berlin, Heidelberg, pp 55-94, **2011**.

Covaci, A., **Dirtu, A.C.**, Chapter: Anthropogenic and naturally-produced contaminants in fish oil: Role in ill-health. Book: *Modern Dietary Fat Intake: Promotion of Disease*, ISBN: 978-1-60327-570-5, Humana Press, Springer Science + Business Media LLC, New York, pp 321-344, **2010**.

Covaci, A., **Dirtu, A.C.**, Brominated Flame Retardants: Analytical, Toxicological and Environmental Aspects, NATO Science for Peace and Security. Series A: Chemistry and Biology, *Applications of Mass Spectrometry in Life Safety*, ISBN 978-1-4020-8810-0; ISSN 1874-6489, Springer-Verlag Netherlands, pp. 153-184, **2008**.