



BFR

8th International Symposium on Flame Retardants

YORK 2017

SUNDAY 7TH WEDNESDAY 10TH MAY 2017

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International Symposium on Flame Retardant

YORK 2017

Introduction

Dear Colleagues and Friends,

Welcome to York!

On behalf of the International organising committee, the National Scientific committee and the local organising committee, it gives me great pleasure and honour to welcome you to the 8th International Symposium on Flame Retardants, BFR 2017. The theme of the conference this year is 'emerging BFR issues', and I am delighted to see so many abstracts submitted on novel and emerging flame retardants in addition to new analytical and other scientific approaches to assess the risk to human and environmental health as a result of these compounds. At the time of writing this, our conference had already attracted media interest in the National Press.

The BFR conferences have covered the emergence of flame retardants as global pollutants and document the way that the international community has tackled the problems that were first uncovered by PBDEs to the extent that these compounds are now declining in the environment. But there are many replacements for PBDEs that are still being manufactured in large quantities and have as yet uncertain consequences in terms of environmental and human health effects. New data will be presented at this conference that demonstrates their presence in the environment long after their useful lives where they can protect us from fires in our homes and work places. Our colleagues here report that they can be found in our food and reside in our bodies, where they are linked with cancer, growth and development and other effects.

There will be over 100 scientific presentations with authors and delegates from over 28 countries. This is a truly international conference with representation from all continents. Posters will be on display throughout the conference. We have an intensive programme but have scheduled in as much time as possible for viewing these posters and networking, so please take the opportunity to meet colleagues from far-away places and to discuss their work. We have a strong focus on students and early stage researchers at this conference and I hope that advantage will be taken of the 'Mentor afternoon tea' and the 'Student presentation and poster competition'.

Finally I would like to make a special thank you to our sponsors, without whom the event would not be possible. The sponsorship we have received enables us not only to host the conference but also to arrange a special conference dinner which will take in Castle Howard. This is a truly spectacular venue that has been used as a backdrop for many films and television programmes and also as a wedding venue for international stars including Taiwanese pop star, Jay Chou (周杰倫).

On behalf of us all, I truly wish that you have not only a pleasant and rewarding experience in York, but also that your scientific endeavours will be rewarded and enhanced by your involvement with BFR 2017.



Martin Rose
On behalf of the BFR 2017 team



Committees



International Scientific Committee

Ake Bergman	Stockholm University, Sweden
Gang Yu	Tsinghua University, China
Jacob de Boer	Vrije University, Amsterdam, The Netherlands
Linda Birnbaum	National Institute of Environmental Health Sciences, USA
Martin Rose	Fera Science Ltd, UK
Mehran Alaee	Environment Canada, Canada
Myrto Petreas	California Dept. of Toxic Substances Control, USA
Robin Law	Cefas Lowestoft Laboratory, Lowestoft, Suffolk UK
Shin-ichi Sakai	Kyoto University, Japan

National Scientific Committee

Alwyn Fernandes	Fera Science Ltd
Christina Tlustos	Food Safety Authority of Ireland
Danielle Ashton	Environment Agency
David Mortimer	Food Standards Agency UK
Lindsey Bramwell	University of Newcastle/Newcastle City Council
Martin Rose	Fera Science Ltd
Mohamed Abdallah	University of Birmingham
Ovnair Sepa	Public Health England
Richard Hull	University of Central Lancashire
Roxana Sührling	Centre for Environment, Fisheries and Aquaculture Science

Local Organising Committee

Alwyn Fernandes	Fera Science Ltd
Jan Strelczenie	Fera Science Ltd
Katy Clarke	Fera Science Ltd
Martin Rose	Fera Science Ltd
Travel and Events Team	Capita

The Principal York



The Principal York

Located in the heart of the beautiful historic city of York, adjacent to York Train Station, The Principal York Hotel offers unique and stylish accommodation; surrounded by beautiful gardens and spectacular views. This stunning hotel creates a magnificent contrast between its historic Victorian architecture and its modern and luxurious furnishings to deliver a timeless, elegant backdrop.

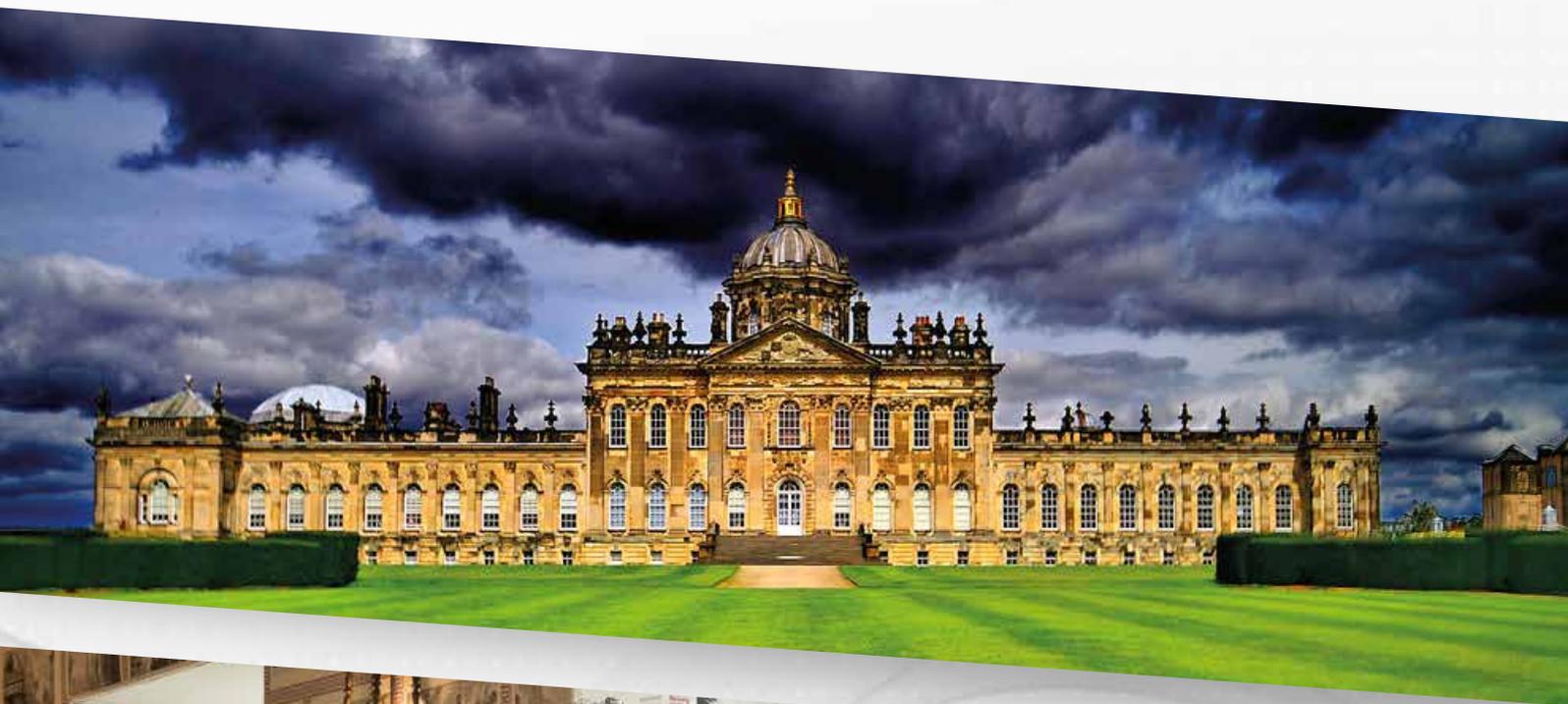


Conference Dinner

Castle Howard

The conference dinner will be held in the grandiose surroundings of Castle Howard. This will present a once in a lifetime opportunity to experience a magnificent 18th century residence set within 1,000 acres of breathtaking landscape in the Howardian Hills, an Area of Outstanding Natural Beauty in the heart of North Yorkshire.

Guests will be received at the West Wing Door and escorted up the Grand Staircase where the drinks reception will take place in the Great Hall. A pre-dinner tour of the Castle will give guests a chance to discover the interior, art and heritage of Castle Howard. Dinner will be served in the Long Gallery using the very best of local produce.



Lord Mayor of York



The Right Honourable the Lord Mayor of York Councillor Dave Taylor

Dave Taylor was born and raised in Rochdale, later going to university in Salford where he gained a 2-1 degree in sociology before embarking on a career as a computer consultant which led him to work for York City Council in 1993. Dave was elected as a Councillor for Fishergate for the Green Party in 2007 and has been re-elected with an increasing majority in 2011 and 2015. He was the first Councillor put forward by the Green Party to be Lord Mayor of York.

Dave has been involved in many fields connected with preserving the heritage and cultural environment of York. Having been widowed in 2007, Dave is now supported in his work by his new partner Susan Ridley as Lady Mayoress. Susan had previously run several successful businesses concurrently for many years: a gift shop, a dress shop, and a tea-room.



Keynote Speakers



Wu Yongning, MD, Ph D - Chief Scientist and Professor, China National Center for Food Safety Risk Assessment (CFSA)

Professor Dr. Yongning WU is Chief Scientist of the China National Center for Food Safety Risk Assessment (CFSA), the Director of MOH Key Laboratory of Food Safety Risk Assessment, head of WHO Collaborating Center of Food Contamination Monitoring (China), honourable professor of Queens' University Belfast. He graduated from Nanjing Medical College in 1983, then from Chinese Academy of Preventive Medicine with a Ph.D degree in Nutrition and Food Safety in 1997. Prof Wu is a member of several International and National Committee in Food Safety. e.g., FAO/WHO Joint Expert Committee on Food

Additives (JECFA), USP Food Ingredient Expert Committee (Food Chemical Codex), Scientific Committee of Food Safety Commission of the State Council, China National Food Safety Risk Assessment Committee. As the director of food contaminate subcommittee of the China Reviewing Committee on National Food Safety Standards and the head of Chinese delegate of Codex Committee on Contaminants in Food, he is involved in drafting the food safety standards for food contaminants internationally and China Standard. He has published over 200 SCI papers with h-index 35 and citation over 4320.



Kim Fernie, PhD - Research Scientist, Ecotoxicology & Wildlife Health Science & Technology, Environment Canada

Dr. Kim Fernie is a research scientist at Environment & Climate Change Canada (Ecotoxicology and Wildlife Health Division), having completed her Ph.D. at McGill University. Her research seeks to understand the exposure and potential effects of flame retardants on birds. With her graduate students, post-docs, and her collaborators, she has used captive American kestrels to identify changes in their behaviour and reproductive success, and more recently on thyroid function, in relation to historical and novel flame retardants. Peregrine falcons allow her to characterize the exposure and effects of organohalogenes on wild apex predators of the terrestrial food chain. She has conducted research in the

Athabasca Oil Sands region of Canada, and currently, is investigating the interactions of chemical exposure and climate change on Arctic sea birds. Dr. Fernie has contributed to the Stockholm Convention as an invited Government Observer, recently served on the Board of Directors and its Executive Committee for the Society of Environmental Toxicology and Chemistry (SETAC) of North America, and is a member of the Steering Committee for the global SETAC Wildlife Toxicology Interest Group.

Keynote Speakers



Tom Webster - Professor of Environmental Health, Boston University School of Public Health

Tom Webster is Professor of Environmental Health at Boston University School of Public Health. His research interests include epidemiology and exposure assessment of chemicals in consumer products, particularly flame retardants, and health effects of exposure to mixtures. His great-great-great-grandfather, William Webster, emigrated from Cold Kirby, North Yorkshire, to Canada in the 1830s.



Richard Hull - Professor of Chemistry and Fire Science, University of Central Lancashire (UCLan)

Professor Hull represents the Royal Society of Chemistry on the BSI Hazard to Life from Fire technical committee, and is the designated the UK Principal Expert on Physical Fire Models to the ISO Fire Threat to People and the Environment subcommittee. He co-edited Fire Retardancy of Polymers: New Strategies and Mechanisms with Prof Kandola from Bolton, published by the RSC in 2009, and co-edited the only reference work on "Fire Toxicity" (700 pages) with Dr Anna Stec from UCLan, published by Woodhead/Elsevier in 2010.



Programme

Sunday 7th May

15.00 onwards	Registration	Principal Hotel, York
16:00 – 17:45	Student session – Tea with mentors	Roxana Sühning and Danielle Ashton
18.00 – 20.00	Welcome reception and exhibition	Oak Room

Monday 8th May (Day One) – 08.45 to 18.00

08.45 – 08.55 (10 mins)	Welcome, housekeeping and introductions	Dr Martin Rose <i>Science Lead, Fera</i>
08.55 – 09.25 (30 mins)	Opening address	<i>The Right Honourable, the Lord Mayor of York,</i> Councillor Dave Taylor
09.25 – 10.10 (45 mins)	Plenary One Epidemiology of exposure to mixtures of flame retardants: an emerging issue	Tom Webster <i>Professor of Environmental Health, Boston University School of Public Health</i>
10.10-10.40 (30 mins)	Coffee Break and Exhibits	Oak Room
10.40 – 12.45 (125 mins)	Session One – Flame Retardants in Abiotic Environments OP – 01 Are atmospheric PBDE levels declining in Europe? Examination of seasonal variations, gas-particle partitioning and implications for long-range atmospheric transport OP – 02 Spatial variability of atmospheric PBDES levels in Mendoza City, Argentina: a dispersion modelling approach OP – 03 Photo-transformation of the “emerging” BFR 1,3,5-Tris-(2,3-dibromopropyl)-1,3,5-triazine-2,4,6-trione OP – 04 E-waste driven pollution in Pakistan: first evidence of environmental and human exposure to flame retardants (FRs) in Karachi city OP – 05 The signature of polybrominated diphenyl ethers (PBDEs) and polybrominated dibenzo-p-dioxins and furans (PBDD/Fs) in the atmosphere of Santiago de Chile after the fire in the Santa Marta landfill area OP – 06 Evidence of gross contamination of surface water from Jukskei River, South Africa with hexabromocyclododecane (HBCDD) and tetrabromo bisphenol A (TBBPA) flame retardants OP – 07 Legacy PBDEs and NBFRs in sediment samples of the river Thames using liquid chromatography coupled to a high resolution accurate mass Orbitrap mass spectrometer OP – 08 Brominated and mixed halogenated dioxin and furan profiles in a radiometrically-dated fresh water sediment core from the United Kingdom	Chair: Stuart Harrad/Gang Yu Céline Degrendele Maria Florencia Ruggeri Dominique Lörchner Jabir Hussain Syed Karla Pozo AdegbenroDaso Aristide P. Ganci Leon Peters
12.45 – 14.00 (75 mins)	Lunch, Posters and Exhibits	Oak Room

Programme



<p>14.00 – 14.30 (30 mins)</p>	<p>Poster Highlights Session (15 x 2 minute presentations)</p> <p>Flame Retardants in Abiotic Environments</p> <p>PH – 01 Influence of TOC and particle size on the distribution of PBDEs in landfill soils</p> <p>PH – 02 Effects of atmospheric boundary layer height on polybrominated diphenyl ether concentrations in air</p> <p>PH – 04 Novel and legacy brominated flame retardants in the urban soils of Melbourne, Australia</p> <p>PH – 05 Polybrominated diphenyl ethers (PBDEs) in Concepción bay of central Chile: pattern, fluxes and historical record</p> <p>Flame Retardants - Analytical Methods</p> <p>PH – 06 A development history of PBDE reference standards and internal standards</p> <p>PH – 07 GC-Q-Orbitrap-based analytical method for the quantification of PBDEs in food commodities</p> <p>Organophosphorous Flame Retardants</p> <p>PH – 08 Brominated and organophosphorus flame retardants in automobile dusts: concentrations and emission sources</p> <p>Health Effects and Toxicology of Flame Retardants</p> <p>PH – 09 Biotransformation of flame retardant 1,2-Dibromo-4-(1,2-dibromomethyl)cyclohexane (TBECH) in vitro by human liver microsomes</p> <p>PH – 10 Adipogenic activity of indoor house dust extracts and relation to flame retardants</p> <p>Flame Retardants in Biota</p> <p>PH – 11 Polybrominated diphenyl ethers (PBDEs) and hexabromocyclododecane (HBCD) in marine and freshwater biota samples from the German Environmental Specimen Bank</p> <p>PH – 12 Temporal and spatial trends in levels of PBDEs in dab (Limanda limanda) from UK marine waters</p> <p>Fire Safety, Policy & Regulation</p> <p>PH – 13 National strategy and action plan on HBCD control in China to fulfil the obligation of Stockholm Convention</p> <p>PH – 14 National strategy and action plan on PBDEs control in China to fulfil the obligation of POPs Convention</p> <p>Human Exposure to Flame retardants</p> <p>PH – 15 Toddler exposure to flame retardant chemicals: magnitude, health concern and potential risk- or protective factors of exposure: observational studies summarized in a systematic review</p>	<p>Chair: Alwyn Fernandes Martin Rose</p> <p>Okechukwu Jonathan Okonkwo</p> <p>Nguyen Thanh Dien</p> <p>Bradley Clarke</p> <p>Karla Pozo</p> <p>Jon Eigill Johansen</p> <p>Nuria Cortés-Francisco</p> <p>Ovokeroye Abafe</p> <p>Khanh-Hoang Nguyen</p> <p>Chris Kassotis</p> <p>Nina Lohmann</p> <p>Philippe Bersuder</p> <p>Ren Zhiyuan</p> <p>Chen Jiang</p> <p>Eva Sugeng</p>
<p>14:30 – 16.00 (90 mins)</p>	<p>Session Two – Analytical Methods</p> <p>OP – 09 Identification of impurities of phosphate and brominated flame retardants</p> <p>OP – 10 The use of non-targeted GC-Orbitrap in the determination of contaminants in human serum</p> <p>OP – 11 Degradation of polymeric brominated flame retardants: development of an analytical approach using PolyFR and UV irradiation</p> <p>OP – 12 Interlaboratory study of organophosphate ester injection ready test mixtures</p> <p>OP – 13 Rapid analysis of novel and legacy brominated flame retardants in soil</p> <p>OP – 14 Simple and fast method for the measurement of polybrominated diphenyl ethers and some novel brominated flame retardants in human serum</p>	<p>Chair: Rainer Malisch Alwyn Fernandes</p> <p>Ana Ballesteros-Gómez</p> <p>Garry Codling</p> <p>Christoph Koch</p> <p>William Stubbings</p> <p>Thomas McGrath</p> <p>Catherine Pirard</p>
<p>16.00 – 16.30 (30 mins)</p>	<p>Coffee Break and Exhibits</p>	<p>Oak Room</p>

Programme



16.30 – 18.00 (90 mins)	Session Three – Organophosphorous Flame Retardants OP – 15 The story of TCPP indoors and outdoors: sources, concentrations and fate OP – 16 Isopropylatedtriarylphosphate esters (ITPS) in commercial flame retardant mixtures and indoor house dust OP – 17 Tissue-specific bioaccumulation and potential factors of organophosphorus flame retardants in crucian carp OP – 18 Organophosphate ester in Vitrometabolism, structure-activity relationships, fate and bioaccumulation potential in polar bears (<i>Ursusmaritimus</i>) and their ringed seal (<i>Pusahispida</i>) prey OP – 19 Dermal uptake and percutaneous penetration of organophosphate esters in a human skin ex vivo model OP – 20 The effects of four organophosphate ester flame retardants and BDE-47 on endochondral ossification in a murine ex vivo limb bud culture model	Chair: Heather Stapleton Mehran Alaei Miriam L Diamond Allison Phillips Choo Gyojin Adelle Strobel Marie Frederiksen Han Yan
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End Day One

Tuesday 9th May (Day Two) – 08.45 to 17.30

8:45 -9:30 (45 mins)	Plenary Two What are the implications of flame retardants for birds?	Kim Fernie, PhD - Research Scientist, <i>Ecotoxicology & Wildlife Health Science & echnology Environment Canada</i>
9.30 – 10.45 (75 mins)	Session Four –Flame Retardants in food <i>Sponsored by the Royal Society of Chemistry</i> OP – 21 Occurrence of HBCDs, TBBPA, brominated phenols and their derivative in OP – 22 Geographical investigation for polybrominateddiphenylethers in fish collected from UK and proximate marine waters OP - 23 Ingestion of extruded polystyrene by laying chicken hens results in eggs contaminated withhexabromocyclododecane OP – 24 Analysis of Dechlorane Plus and related norbornene-based flame retardants in foods by gas chromatography - high resolution mass spectrometry OP – 25 PBDE and HBCDD in pooled human milk samples from WHO/UNEP-coordinated exposure studies 2000 – 2015 (TBC)	Chair: David Mortimer Christina Tlustos Svetlana Malysheva Sean Panton Ronan Cariou DzintarsZachs Rainer Malisch
10.45 – 11.15 (30 mins)	Coffee Break and Exhibits	Oak Room
11.15 – 12.15 (60 mins)	Session Five -Flame Retardants in Indoor Environments OP – 26 Legacy and alternative flame retardants in Norwegian and UK indoor environment: implications of human exposure via dust ingestion OP – 27 Non-target and suspect screening of flame retardants and other compounds in indoor dust from five countries OP – 28 Organic flame retardants in offices, taxis and outsides in China: hand wipes, surface wipes and dust OP – 29 Within-room and within-home spatial and temporal variability in concentrations of legacy and “novel” brominated flame retardants in indoor dust	Chair: Mohamed Abdallah Lindsay Bramwell Katerina Kademoglou Jacob de Boer Xiaotuliu Layla Al-Omran
12.15 – 13.45 (90 mins)	Lunch and Posters	Oak Room/Conference Room

Programme

	<p>Vendor Seminar by ThermoFisher Using Magnetic Sector DFS with DualData XL in a Commercial Dioxin Lab David Hope, P.Chem. CEO Pacific Rim Laboratories Inc. Vancouver, Canada</p> <p>Practical Experiences of Implementing POPs Methods using Orbitrap™ GC-MS Nuria Cortés, Servei de Química. ÀreaOrgànica. LaboratoriAgència de SalutPública. Barcleona, Spain</p>	<p>ThermoFisher SCIENTIFIC</p>
13.45 – 14.30 (45 mins)	<p>Plenary Three Dietary exposure assessment of BFRs by Chinese Total Dietary and Human Breast Milk Monitoring</p>	<p>Wu Yongning, MD, Ph D - Chief Scientist and Professor <i>China National Centre for Food Safety Risk Assessment (CFSA)</i></p>
14.30 – 15.45 (75 mins)	<p>Session Six - Health Effects and Toxicology of Flame Retardants <i>Sponsored by the Royal Society of Chemistry</i></p> <p>OP – 30 TBBPA disposition and kinetics in pregnant and nursing Wistar Han rats OP – 31 BDE-209 VERSUS Tetradecabromodiphenoxybenzene: differing rates of photolytic degradation to dioxin-like products and toxicogenomic expression in chicken embryonic hepatocytes OP – 32 Follicular fluid levels of polybrominated diphenyl ethers (PBDES), gene expression in human mural and cumulus granulosa cells and fertility OP – 33 Prenatal exposure to organophosphate flame retardants and children's growth and development OP – 34 Flame retardant exposures and the incidence of thyroid cancer: is there a link?</p>	<p>Chair: Robert Letcher-OvnairSepai Gabriel Knudsen Robert Letcher Barbara F Hales Kate Hoffman Heather Stapleton Heather Stapleton</p>
15.45 – 16.15 (30 mins)	Coffee Break and Exhibits	
16.15 – 17.15 (60 mins)	<p>Session Seven– Flame Retardants in Biota</p> <p>OP – 35 Halogenated flame retardants in stranded sperm whales from the Mediterranean OP – 36 Tracing the biotransformation of PCBs and PBDEs in common carp (<i>Cyprinus carpio</i>) using compound-specific and enantiomer-specific stable carbon isotope analysis OP – 37 Halogenated flame retardants in peregrine falcon eggs from Greenland – concentration development over the last 30 years OP – 38 Flame retardant versus fluorinated contaminants of emerging concern in herring gull and caspian tern eggs from United States colony sites in the great lakes of North America</p>	<p>Chair: Jacob de Boer Danielle Ashton Ethel Eljarrat Tang Bin KatrinVorkamp Robert Letcher</p>

End Day Two – Depart for Dinner at Castle Howard
Great Hall Drinks Reception followed by dinner in the Long Gallery
(Coaches depart at 18.00)

Wednesday 10th May
(Day Three) – 08.45 to 14.00

8:45 – 9:30 (45 mins)	<p>Plenary Four Do flame retardants make furniture safer?</p>	<p>Richard Hull - Professor of Chemistry and Fire Science <i>University of Central Lancashire (UCLan)</i></p>
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Programme



<p>9.30 – 10.15 (45 mins)</p>	<p>Session Eight– Fire Safety, Policy and Regulation</p> <p>OP – 39 Regulated brominated flame retardants in Irish waste plastics: obstacles to the circular economy?</p> <p>OP – 40 What about ENVIRONMENTAL QUALITY STANDARDS for PBDEs in European river biota?</p> <p>OP – 41 Policy shaping flame retardant use and regulation: the role of states and future under TSCA reform</p>	<p>Chair: Richard Hul Shin-ichi Sakai</p> <p>Martin Sharkey</p> <p>Ethel Eljarrat</p> <p>Erika Schreder</p>
<p>10.15 – 10:45 (30 mins)</p>	<p>Coffee Break</p>	
<p>10:45 – 12.30 (105 mins)</p>	<p>Session Nine–Human Exposure to Flame retardants</p> <p>OP – 42 Indoor sources of and human exposure to brominated flame retardants (BFRs)</p> <p>OP – 43 Assessing children’s exposure to organophosphate flame retardants using passive air samples from the home environment</p> <p>OP – 44 Polybrominateddiphenyl ethers, polychlorinated biphenyls and persistent pesticides in 7 and 9 year old children and their mothers in the Chamacos cohort</p> <p>OP – 45 Polybrominateddiphenyl ethers (PBDEs) decrease in blood serum from Australian children: 2006-2015</p> <p>OP – 46 Declines in serum PBDEs in older California women may have reached a plateau (2011-2015)</p> <p>OP – 47 Emerging and legacy flame retardants in UK human milk and food suggest slow response to restrictions on use of PBDEs and HBCDD</p> <p>OP – 48 Determination of phenolic organohalogens in human serum from a Belgian population and assessment of parameters affecting human contamination</p>	<p>Chair: Miriam Diamond MyrtoPetreas</p> <p>Miriam Diamond</p> <p>Stephanie C Hammel</p> <p>Andreas Sjodin</p> <p>Leisa-Maree Toms Jochen Mueller MyrtoPetreas</p> <p>Stuart Harrad</p> <p>Catherine Pirard</p>
<p>12.30 – 12.45 (15 mins)</p>	<p>Student Prizes/Awards Ceremony</p>	<p>Chair: Roxana Sühring Danielle Ashton</p>
<p>12.45 – 13.00 (15 mins)</p>	<p>Introduction to BFR 2019 (Canada)</p>	<p>Mehran Alaei</p>
<p>13.00 – 14:30 (90 mins)</p>	<p>Lunch and Posters</p>	<p>Oak Room</p>

Conference Ends

Posters



Flame Retardants in Abiotic Environments	
PP – 01	Release of polybrominated diphenyl ethers from wastewater in China
PP – 02	Long-term temporal and seasonal trends for PBDEs in the UK ambient air
PP – 03	Identification of brominated flame retardants in leachate samples derived from laboratory tests of waste electronic and electrical equipment using a high resolution high accuracy mass spectrometer
PP – 04	Influence of TOC and particle size on the distribution of PBDEs in landfill soils
PP – 05	Effects of atmospheric boundary layer height on polybrominateddiphenyl ether concentrations in air
PP – 06	BDE-209 in air: gas/particle partition and long range atmospheric transportation
PP – 07	Gas/particle partitioning of polybrominated diphenyl ethers in air: subcooled liquid vapor pressure vs. octanol-air partition coefficient as descriptors
PP – 08	Novel and legacy brominated flame retardants in the urban soils of Melbourne, Australia
PP – 09	Polybrominated diphenyl ethers (PBDEs) in Concepción bay of central Chile: pattern, fluxes and historical record
	Xian-ZhiPeng Carola Graf Khanh-Hoang Nguyen Okechukwu Jonathan Okonkwo Nguyen Thanh Dien Yi-Fan Li Zifeng Zhang Bradley Clarke Karla Pozo
Flame Retardants - Analytical Methods	
PP – 10	Maximised productivity for PBDE, dioxin and PCB analysis using dualdata mode with magnetic sector GC-HRMS
PP – 11	Optimization of automated pressurized liquid extraction and cleanup of PBDE in animal feed
PP – 12	A novel method for quantification of Decabromodiphenyl ether in plastics without sample preparation using direct insertion probe – magnetic sector – high resolution mass spectrometry
PP – 13	HBCDD in expanded and extruded polystyrene – screening for compliance with low POP concentration limits using x-ray fluorescence
PP – 14	Improving the chromatographic capabilities of an atmospheric pressure chemical ionisation source
PP – 15	Investigating the in vitro metabolism of NBRFRs by trout liver microsomes using a high resolution accurate mass benchtop Q-ExactiveOrbitrap mass spectrometer
PP – 16	A fully automated method for the determination of PCDD/Fs, dioxin-like PCBs, non-dioxin-like PCBs and polybrominated diphenyl ethers in food, feed and environmental samples
PP – 17	A development history of PBDE reference standards and internal standards
PP – 18	GC-Q-Orbitrap-based analytical method for the quantification of PBDEs in food commodities
	Heinz Mehlmann Aleksandr Kozhushkevich Heinz Mehlmann Martin Sharkey Simon Hird Aristide P. Ganci WimTraag Huiling Liu Nuria Cortés-Francisco
Organophosphorous Flame Retardants	
PP – 19	Co-precipitation-assisted coacervative extraction coupled to high-performance liquid chromatography: an approach for determining organophosphorus compounds in water samples
PP – 20	Estimating Organophosphate Ester (OPE) transport, fate and emissions in Toronto, Canada using the Multimedia Urban Model (MUM)
PP – 21	Multigenerational effects of the flame retardant tris (2-butoxyethyl) phosphate (TBOEP) in daphnia magna
PP – 22	Organophosphate ester flame retardants and plasticizers in fish and packaged foodstuffs at the French level
PP – 23	Brominated and organophosphorus flame retardants in automobile dusts: concentrations and emission sources
	Jorgelina Altamirano Miriam Diamond Magali Houde Ronan Cariou Ovokeroye Abafe
Flame Retardants in Food	
PP – 24	Occurrence of halogenated flame retardants in Belgian foodstuffs
PP – 25	Results of three years of monitoring plans in France: levels of PBDEs, PBBs, HBCDDs, TBBPA and other emerging/novel brominated flame retardants in food
	Giulia Poma Anais Venisseau

Posters



PP – 26	Simultaneous determination of PCDD/Fs, PCBs, PBDEs and PBDD/Fs in fish and mussels from the Mediterranean Sea	Roberta Ceci
PP – 27	PBDEs and brominated dioxins in the eggs of duck and other species	Frankie Smith
PP – 28	The determination of HBCDDs, a range of bromophenols, tetrabromobisphenol A and tetrabromobisphenol S in foodstuffs from Ireland	Malcolm Driffield
PP – 29	Flame retardants in wastes recycled in agriculture and the potential for transfer to the food chain	Hannah Rigby
Flame Retardants in Indoor Environments		
PP – 30	Brominated flame retardants (BFRs) in indoor in a community in a megacity of southern China: comparison with outdoor air	Mai Bi-Xian
PP – 31	First report of flame retardant exposure in indoor dust from Canadian e-waste recycling facility	Viet Linh Nguyen
PP – 32	Untargeted screening of novel brominated flame retardants in indoor dust using a Q Exactive high-resolution accurate mass spectromete	Aristide P. Ganci
Health Effects and Toxicology of Flame Retardants		
PP – 33	Changes in gene expression and pathway effects of tetrabromobisphenol A (TBBPA) in female Wistar Han rats	Samantha Hall
PP – 34	Novel brominated polyphenyl ether contaminants and in vitro competitive binding with the thyroid hormone thyroxine for human transthyretin and albumin	Robert Letcher
PP – 35	Biotransformation of flame retardant 1,2-Dibromo-4-(1,2-dibromomethyl)cyclohexane (TBECH) in vitro by human liver microsomes	Khanh-Hoang Nguyen
PP – 36	Adipogenic activity of indoor house dust extracts and relation to flame retardants	Chris Kassotis
Flame Retardants in Biota		
PP – 37	Comparative occurrence and biomagnification of legacy persistent organic pollutants and alternative flame retardants in a macrotidal estuary: case study on the Gironde (SW France)	Pierre Labadie
PP – 38	Implications of biological factors on accumulation of PBDEs in two Antarctic notothenioid fish	Jorgelina Altamirano
PP – 39	Does any trout species could be used as sentinel of PBDEs in freshwater environments?	Jorgelina Altamirano
PP – 40	Assessing polybrominated diphenyl ether accumulation in farmed and wild salmon: how has it changed since 2004?	Matthew Ruis
PP – 41	Species specific debromination of PBDEs and relationships to deiodinase	Kaoruko Mizukawa
PP – 42	Occurrence of dechloranes in fish from the Garonne and the Dordogne rivers in France.	Inas Abdel Malak
PP – 43	Levels and pathways of flame retardant contamination in wild birds associated with landfill: a critical review	Andrew Tongue
PP – 44	HBCDs in the top predator Greenland shark (<i>Somniosus microcephalus</i>) from Greenland seawaters	Salvatore Cotronei
PP – 45	Evidence of polybrominated biphenyl ethers (PBDEs) in Antarctica: current situation and perspectives	Metzdorff América
PP – 46	Preliminary aquatic toxicity hazard evaluation of DOPO-HQ as a potential alternative to PBDEs	Yunyun Deng
PP – 47	Comprehensive analysis of additives in plastics ingested by seabirds: implication for exposure risk to seabirds	Kosuke Tanaka
PP – 48	Determination of polybrominated diphenyl ethers retardants in fish tissues samples from Vaal River, South Africa	Tlou Chokwe
PP – 49	Polybrominated diphenyl ethers (PBDEs) and hexabromocyclododecane(HBCD) in marine and freshwater biota samples from the German Environmental Specimen Bank	Nina Lohmann
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