## Scientific programme

### Saturday 28th February 2015

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<td>Registration and Poster Assembly</td>
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<td>19.30</td>
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### Sunday 1st March 2015

*The Conference is Open!*

### Session 1

**Environmental, Biological and Medicinal Chemistry**

*Denotes presentation by a student.*

- Chair: *Tamas Kiss* (Szeged University, Szeged, Hungary)

<table>
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<td>Introduction by the Chair</td>
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<td>9.00</td>
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**Aluminium in the open ocean: simulation and observation.**

*Marco van Hulten* (LSCE, France)
9.20 Discussion

9.30 Platform 2
Density-functional insights into the structure and formation of hydroxyaluminosilicates.
James Beardmore (Keele University, United Kingdom)

9.50 Discussion

10.00 Platform 3
Aluminium in biological environments: a computational approach.
Xabier Lopez (University of San Sebastian, Spain)

10.20 Discussion

10.30 Coffee

10.50 Platform 4
Identifying aluminium binding sites in amyloid β peptide by means of computational chemistry.
Jon Mujika (University of San Sebastian, Spain)

11.10 Discussion

11.20 Oral Poster 1
Effect of Al(III) on coenzyme NADH in solution.
Elena Formoso (University of San Sebastian, Spain)

11.25 Discussion

11.30 Platform 5
Irreversible denaturation of proteins through aluminium-induced formation of backbone ring structures.
Bo Song (Shanghai Institute of Applied Physics, China)

11.50 Discussion

12.00 Oral Poster 2*
A potentiometric, spectrophotometric and NMR study of protonation and formation equilibria of two new aluminium chelators.
Guadalupe Jaraquemada-Pelaez (University of Cagliari, Italy)

12.05 Discussion

12.10 Oral Poster 3*
A new series of kojic acid derivatives as ligands for aluminium.
Delara Mansoori (University of Cagliari, Italy)
12.15 Discussion

12.20 Platform 6*
The relationships between the physicochemical properties of aluminium-based adjuvants and their relative cytotoxicities in a THP-1 cell line.
*Emma Shardlow (Keele University, United Kingdom)

12.40 Discussion

Chair’s Summary

13.00 Lunch

Session 2
Bacteria, Fungi and Plants

*Denotes presentation by a student.

Chair: Leon Kochian (USDA-ARS, Cornell University, New York, USA)

14.15 Introduction by the Chair

14.20 Platform 7
Fungal heterotrophic leaching of red mud: biogenic organic acid contribution to aluminium mobility in the environment.
*Martin Urík (Comenius University in Bratislava, Slovakia)

14.40 Discussion

14.50 Platform 8*
Characterisation of aluminium toxicity in pollutant degrading bacteria.
Sean Booth (University of Pennsylvania, USA)

15.10 Discussion

15.20 Platform 9
Migration and transformation of inorganic and organic complexes of aluminium from soil to leaf through root, stem and twig of Betula pendula.
Marcin Frankowski (Adam Mickiewicz University in Poznań, Poland)

15.40 Discussion

15.50 Platform 10
Aluminium rhizotoxicity in solution culture: The past and the present.
Peter Kopittke (The University of Queensland, Australia)
16.10 Discussion

16.20 Tea

16.40 Platform 11*
Aluminium accumulation in three *Symlocos* species from Central Sulawesi.
*Marco Schmitt* (Ulm University, Germany)

17.00 Discussion

17.10 Oral Poster 4*
Comparative analysis of aluminium accumulation in leaves of several woody aluminium accumulators.
*Eriko Maejima* (Hokkaido University, Japan)

17.15 Discussion

17.20 Oral Poster 5
Differences and similarities in the characteristics of aluminium accumulation in various aluminium accumulators.
*Toshihiro Watanabe* (Hokkaido University, Japan)

17.25 Discussion

17.30 Platform 12
Signalling aluminium response in two contrasting rice cultivars.
*Charlotte Poschenrieder* (The Autonomous University of Barcelona, Spain)

17.50 Discussion

18.00 Platform 13
Sustainable crop growth and yields on acid soils.
*Jiping Liu* (Cornell University, USA)

18.20 Discussion

Chair’s Summary

18.30 End of the first day

20.15 Dinner

21.15 Poster session and BEER TASTING
Session 3
Animal Models

*Denotes presentation by a student.

Chair: David Chettle (McMaster University, Hamilton, Canada)

08.55  Introduction by the Chair

09.00  Platform 14
Aluminium toxicity in Caenorhabditis elegans experimental model of Alzheimer’s disease.
Rosielen Kaiser (Federal Institute for Education, Science and Technology of Rio Grande do Sul, Brasil)

09.20  Discussion

09.30  Oral Poster 6*
Investigation of the toxicity of dairy industry effluents on the nervous system of Caenorhabditis elegans.
Vanessa Oliveira (Federal Institute for Education, Science and Technology of Rio Grande do Sul, Brasil)

09.35  Discussion

09.40  Oral Poster 7
Experimental intoxication with aluminium chloride induces behavioural and mitochondrial alterations in mice and decreased viability, proliferation and morphological changes in neurospheres.
Jessié Gutierrez (Federal University of Santa Maria, Brasil)

09.45  Discussion

09.50  Platform 15*
Aluminium as an environmental risk factor in visceral hypersensitivity.
Nicolas Esquerre (University of Lille, France)

10.10  Discussion

10.20  Coffee
The RAS/P13K pathway is involved in damage to long-term potentiation induced by acute aluminium treatment.

Qiao Niu (Shanxi Medical University, China)

Discussion

Non-apoptotic role of caspase 3 on long-term depression in area CA1 of the rat hippocampus following aluminium exposure in vivo.

Huifang Zhang (Shanxi Medical University, China)

Discussion

Aluminium can cross and damage the intestinal epithelial barrier in vitro.

Mathilde Body-Malapel (University of Lille, France)

Discussion

Effects of aluminium adjuvants on social behaviour in mice.

Sneha Sheth (University of British Columbia, Canada)

Discussion

Assessment of the neurotoxic effects of aluminium vaccine adjuvant injected into mice.

Guillemette Crépeaux (Paris Est University, France)

Discussion

Fluorescent nanodiamonds as a relevant tag for the assessment of alum adjuvant particle biodisposition.

Housam Eidi (Paris Est University, France)

Discussion

Chair’s Summary
13.10 **Lunch**

**Free afternoon,**
3.00-5.00 **Exclusive guided walking tour of the old Lille**

20.00 **Dinner in the heart of Lille in the estaminet** Barbu d’Anvers

*an estaminet is a typical northern French inn

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**Tuesday 3rd March 2015**

**Session 4**

**Human Exposure**

*Denotes presentation by a student.

**Chair:** *Philippa Darbre* (University of Reading, United Kingdom)

8.25 **Introduction by the Chair**

8.30 **Platform 20**

Elucidating upon the cellular uptake of aluminium based adjuvants and the amyloidogenic \( \text{A}_\beta_{42} \) peptide ‘antigen’ in a monocytic THP-1 cell line.

*Matthew Mold* (Keele University, United Kingdom)

08.50 **Discussion**

09.00 **Platform 21**

Aluminium treatment of THP-1 monocytic cell line induces alterations in inflammatory and proteolytic pathways.

*Ferdinando Mannello* (University ‘Carlo Bo’ of Urbino, Italy)

09.20 **Discussion**

09.30 **Oral Poster 11***

Effect of aluminium on migration of oestrogen unresponsive MDA-MB-231 human breast cancer cells in culture.

*Ayse Bakir* (University of Reading, United Kingdom)

09.35 **Discussion**
09.40 Platform 22*
Antiperspirants, aluminium salts and breast cancer: Preliminary data from a clinical trial.
Caroline Linhart (Medical University of Innsbruck, Austria)

10.00 Discussion

10.10 Coffee

10.30 Platform 23*
Hedi Mohseni (McMaster University, Hamilton, Canada)

10.50 Discussion

11.00 Platform 24
Aluminium and bone: New clinical circumstances where aluminium deposition occurs in the calcified matrix of bones.
Daniel Chappard (University of Angers, France)

11.20 Discussion

11.30 Oral Poster 12
Study of aluminium in cancellous and compacted bone in humans.
Anetta Ziola-Frankowska (Adam Mickiewicz University in Poznań, Poland)

11.35 Discussion

11.40 Platform 25*
Impact of aluminium on human fertility.
Jean-Philippe Klein (University of Lyon, France)

12.00 Discussion

12.10 Oral Poster 13*
Aluminium and silicon in human sweat.
Krista Jones (Keele University, United Kingdom)

12.15 Discussion

12.20 Platform 26
Sea vegetables and aluminium.
Shunsuke Meshitsuka (Tottori University, Japan)

12.40 Discussion

12.50 Demonstration
DEVEXI Health Analytics Research Database: Applications in human exposure to aluminium.
Claire Dwoskin (Childrens Medical Safety Research Institute, USA)
Session 5
Human Health

All Platform Presentations in Session 5 are 15 minutes plus 5 minutes for Discussion
*Denotes presentation by a student.

Chair: Cecile Vignal (University of Lille, France)

14.25 Introduction by the Chair

14.30 Platform 27
Aluminium and health: A century of controversy, research and regulation.
Florence Hachez-Leroy (University of Lille, Nord de France, France)

14.45 Discussion

14.50 Platform 28
Aluminium-induced NF-κB -mediated pro-inflammatory signalling and amyloidogenesis in human brain microglial cells and tissues.
Walter Lukiw (Louisiana State University Health Sciences Center, USA)

15.05 Discussion

15.10 Platform 29
Colocalisation of aluminium and iron in neurodegenerative diseases.
Sakae Yumoto (Yumoto Institute of Neurology, Tokyo, Japan)

15.25 Discussion

15.30 Platform 30
Aluminium intoxication and treatment with chelation therapy.
Maria Elena Ferrero (University of Milan, Italy)

15.45 Discussion

15.50 Platform 31
Can 5-hydroxy-2-(hydroxymethyl)pyridine-4(1H)-one tautomer cure diseases of aluminium overload?
Joanna Lachowicz (University of Cagliari, Italy)

16.05 Discussion
Clinical features and functional brain imaging in patients with persisting aluminium hydroxide-induced macrophagic myofasciitis (MMF).
François-Jérôme Authier (Paris Est University, France)

Discussion

Aluminium-induced entropy in biological systems.
Robert Davidson (PhyNet Inc., USA)

Discussion

Predictors of costs of care in aluminium-related dementia: A stress simulation hypothesis.
Paolo Prolo (Swiss Disability Insurance, Bellinzona, Switzerland)

Discussion

Chair’s Summary

Tea

Final Session

Chair: Chris Exley (Keele University, UK)

Introduction by the chair to the JD Birchall Memorial Lecture

The JD Birchall Memorial Lecture
Plants do some surprising things to deal with toxic aluminium in soil!
Leon Kochian (Cornell University, USA)

Discussion

CONCLUSION OF MEETING

20.00 Conference Dinner
List of Additional Posters

*Denotes presentation by a student.

**Session 1**
Poster 1*
*Application of ion selective electrodes and optical sensors for the detection of aluminium(III) ions in clinical samples.*
*Lukasz Mendecki* (Keele University, United Kingdom)

**Session 2**

**Session 3**
Poster 1*
*Experimental reproduction of ovine ASIA syndrome: From symptoms to genomics.*
*Javier Asín* (University of Zaragoza, Spain)

Poster 2*
*Effects of aluminium on miR29 and beta amyloid (1-42) in rat brain.*
*Linping Wang* (Shanxi Medical University, China)

**Session 4**
Poster 1*
*Effect of aluminium on DNA damage and DNA repair in MCF10A immortalised non-transformed human breast epithelial cells.*
*Abdullah Farasani* (University of Reading, United Kingdom)

Poster 2
*Microcrystalline tyrosine (MCT): Its use a depot adjuvant in allergy immunotherapy, future perspectives and applications.*
*Matthew Heath* (Allergy Therapeutics, United Kingdom)

Poster 3*
*The fate of L-tyrosine in immunotherapy: What happens at the injection site?*
*Iulia Neagu* (Keele University, United Kingdom)

Poster 4*
*The use of antiperspirants containing aluminium salts and its relation to breast cancer: Methods and implementation of biospecimen sampling.*
*Dominik Panosch* (Medical University of Innsbruck, Austria)
Poster 5*
Aluminium in human brain tissue: Measurement and imaging.
Ambreen Mirza (Keele University, United Kingdom)

Poster 6
Aluminium is deposited in the calcified matrix of bone exostoses.
Daniel Chappard (University of Angers, France)

Poster 7
Al exposure from food contact materials made of aluminium
Veronika Fekete (Scientific Institute of Public Health, Brussels, Belgium)

Poster 8
Accumulation of aluminium in human eye tissue: a role in age-related macular degeneration?
Alex Langford-Smith (Wellcome Trust Centre for Cell-Matrix Research, Faculty of Life Sciences, University of Manchester, Manchester, UK)

Session 5

Poster 1
Small sensory fiber neuropathy in patients with aluminium hydroxide-induced macrophagic myofasciitis (MMF)
François-Jérôme Authier (Paris Est University, France)

Poster 2
Do we need a holistic understanding about the effects and working mechanism of aluminium?
Esko Meloni (Enopop T:mi, Finland)

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