



# ASSOCIATION OF CHEMISTRY AND THE ENVIRONMENT

Newsletter 2018

*edited by Branimir Jovančević*

## **Contents of this issue:**

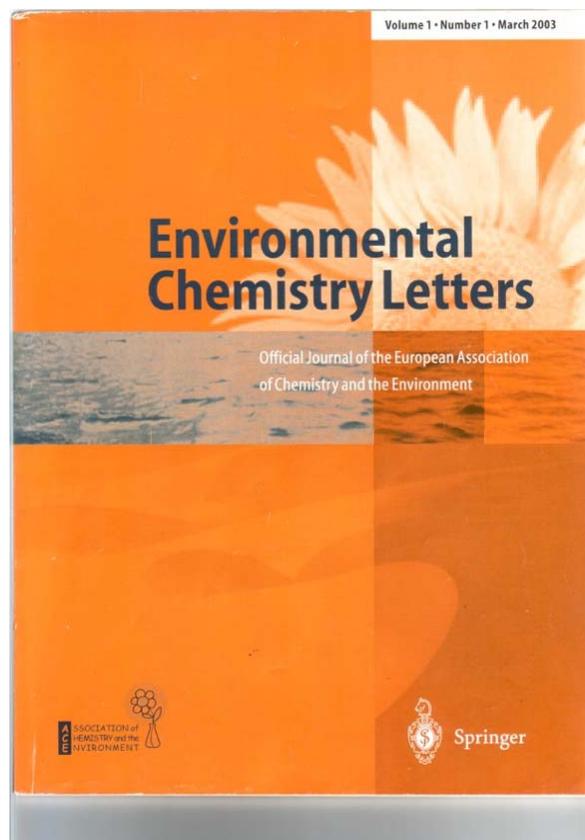
- 1) Jan Schwarzbauer, secretary of Association and ECL editor:  
*Environmental Chemistry Letters (ECL) - a child of ACE*
- 2) Nuno Ratola: **Porto, 2017 – EMEC18 which is behind us**
- 3) Anne-Marie Delort - **Clermont-Ferrand, 2018 - EMEC19 is in front of us**
- 4) Polonca Trebše: **Retirement of Prof. Isabel Villaescusa, ACE board member**
- 5) Jan Schwarzbauer and Branimir Jovančević: **Fundamentals in Organic Geochemistry**
- 6) Albert Lebedev: **Joint activities of ACE board members**
- 7) Stuart Gibb: **Medicating our environment: Human drugs in natural waters**
- 8) Josef Caslavsky: **ACE and young researchers - scholars at EMEC18 in Porto**

1) Jan Schwarzbauer, secretary of Association and ECL editor:  
*Environmental Chemistry Letters (ECL) - a child of ACE*

The journal *Environmental Chemistry Letters*, shortly named ECL, is one of the essential products of the Association of Chemistry and the Environment ACE. The initial steps to establish this journal is also a very nice example on how many activities of ACE are linked.

After the second EMEC meeting in Dijon 2001, there was an idea to give the participants a platform to publish their newest results. A book 'Environmental Chemistry' was published 2005 with numerous chapters from participants of this EMEC meeting. In parallel, Eric Lichtfouse, Didier Robert and Jan Schwarzbauer discussed not only to publish a book format (noteworthy, this format has been

expanded as a further publication activity as book series under the named *Environmental Chemistry for a Sustainable World ECSW*) but also to establish a journal closely connected to the association. Further on, they created a format that should enforce a rapid and focused publication of new and cutting-edge results, the *letters* format. A format consisting of short papers with a limited number of figures and tables and with a clear accent on the innovative aspects has been created. With this idea, Eric Lichtfouse and Jan Schwarzbauer convinced Springer publisher to host this journal and to give this project a chance to become alive. In 2003 the first issue of ECL was printed and, to start, the authors of the conference book were asked to give short and abbreviated versions of their long paper as starting material for this journal. Here, the close hand-in-hand work of the association (EMEC meetings - book series ECSW- journal ECL) became visible.



The first issue of ECL.

Till now four issues are published per year, now with the 15<sup>th</sup> volume in 2017. However, the page numbers increased steadily and also, more important, the impact factor which was given to ECL first in 2006. From the first IF of 0.8 the values raised constantly up to now 3.6. This development indicates that the format as well as the strict policy to publish only scientifically high-quality papers seems to work. Hopefully also at least for the next 15 years!

2) Nuno Ratola:  
**Porto, 2017 – EMEC18 which is behind us**



Under the motto “Chemistry for an Infinite Environment”, the EMEC18 meeting took place in Porto (Portugal) in the premises of the Fundação António Cupertino de Miranda. It was organized by the Department of Chemical Engineering from the Faculty of Engineering of the University of Porto (FEUP) on behalf of the Association of Chemistry and the Environment (ACE) and continued the successful tradition of previous meetings, hosting more than 230 delegates from 29 countries (Algeria, Austria, Bulgaria, Chile, Croatia, Cyprus, Czech Republic, Ecuador, Estonia, France, Germany, Greece, Hungary, Israel, Italy, Mexico, Montenegro, Morocco, Paraguay, Portugal, Republic of Korea, Russia, Saudi Arabia, Serbia, Slovenia, Spain, Sweden, United Kingdom, USA).

As always, EMEC18 attracted high quality science presentations from researchers working in environmental chemistry and related fields, under the following main topics: Environmental monitoring; Environmental technologies; Environmental modelling; Sustainable development; Environmental safety; and Agro-environmental friendly processes and food chemistry. Two parallel sessions were designed to accommodate a total of 94 oral presentations, including three plenary talks by Prof. Damià Barceló (IDAEA-CSIC, Barcelona, Spain), Prof. Despo Fatta-Kassinos (University of Cyprus) and Prof. Kevin Jones (Lancaster University, UK) and five keynotes by Elia Psillakis (Technical University of Crete, Greece), Kurunthachalam Kannan (Wadsworth Center, New York Department of Health, USA), Maria Llompert (University of Santiago de Compostela, Spain), Pedro Jiménez-Guerrero (University of Murcia, Spain) and Cristina Branquinho (University of Lisbon, Portugal). All 169 posters were displayed for the whole duration of the congress and had two dedicated sessions. Selected contributions presented at EMEC18 will be collected in a virtual special issue of the Elsevier journal *Science of the Total Environment* (Impact Factor 2016 = 4.900).



Three scholarships were given by the ACE to young scientists to support their presence in EMEC18. The awardees were Jianan Li (Univ. College London, UK), Eneliis Kattel (Tallinn University of Technology, Estonia) and Marlene Vila (University of Santiago de Compostela, Spain).



Also, our Diamond Sponsor Prince Sultan Bin Abdulaziz International Prize for Water (PSIPW) offered a 500 EUR scholarship for a young scientist working in water-related studies, which was split between Belén González-Gaya (IMDEA Water, Spain) and Paula Guedes (FCT-UNL, Portugal).



The EMEC18 Organization granted two awards (sponsored by Springer) to outstanding contributions of young scientists. One for the best Oral Presentation (200 EUR book voucher) and another for the best Poster (100 EUR book voucher). The winners were Maria Laura Tummino (University of Torino, Italy) and Ana Gorito (LSRE-LCM-FEUP, Portugal), respectively.



The social program is always an important aspect of these events. In this respect, EMEC18 had three highlights. First, the Welcome Reception (Porto D'Honra) held at the Conference venue, where the delegates had the opportunity to taste the world-famous Port Wine while enjoying some live music.



Secondly, EMEC18 offered all participants an exciting tour to the Ferreira Port Wine cellars. Built by a family of winemakers from the Douro region in 1751, the Ferreira house possessed a rich tradition and a prominent role in the history of Port Wine. The third moment followed, with the Conference Dinner held at Casa Ferreirinha, a contemporary venue with a fantastic view to the Douro River, perfectly integrated in the genuine wine cellars of the Ferreira house. The evening ended to the sound of national and international music, with everyone having a chance to put on their dancing shoes.



EMEC18 received the institutional support of the three research groups of the Department of Chemical Engineering from FEUP (LEPABE, LSRE-LCM and CEFT) and of the Portuguese Society of Chemistry (SPQ). We would also like to acknowledge the contribution of the sponsors for their financial support: Prince Sultan Bin Abdulaziz International Prize for Water (Diamond); Waters, Agilent and Leco (Platinum); Specanalítica and Sciex (Gold); Lipor and TechnoSpec (Silver) and Elsevier, Springer and LaborSpirit.

We hope EMEC 18 could provide its participants with fruitful sessions and prospects of numerous future collaborations, along with the opportunity to enjoy the highlights of Porto, a city that was declared a UNESCO World Heritage Site in 1996, as well as European Culture Capital in 2001 and Lonely Planet's Best Travel Destination in Europe in 2013 and 2017.



We look forward to seeing you all again in Clermont-Ferrand for EMEC19.

**3) Anne-Marie Delort - Clermont-Ferrand,  
2018 - EMEC19 is in front of us**

The 19<sup>th</sup> European Meeting on Environmental Chemistry (EMEC 19) will be held from the 3<sup>rd</sup> to 6<sup>th</sup> of December 2018 in Royat, France. Royat is well known for its spas and beautiful architecture of the early 20<sup>th</sup> century, it is situated at 15 min by bus from Clermont-Ferrand city center. Easy

connections to Clermont-Ferrand can be made by train or plane; hotels are present close to the Casino of Royat where the EMEC 19 will take place. (website: <https://emec19.sciencesconf.org/>).





The conference will be organized by the Institute of Chemistry of Clermont-Ferrand (ICCF) from the Clermont Auvergne Université / CNRS / Sigma-Clermont, on behalf of the Association of Chemistry and the Environment (<http://www.europeanace.com/index.php>). The Institute of Chemistry of Clermont-Ferrand is a laboratory of 120 permanent researchers and technical staff (more than 200 people in total), organized around 6 teams covering all the disciplines of chemistry, with 3 main transverse themes of research: “chemistry of the materials”, “chemistry and life sciences” and “chemistry and the environment”. Concerning the environment, 3 main topics are studied: “Biophysicochemistry of clouds”, “Fate of pollutants in soils and waters” and “Sustainable chemistry” (<http://iccf.univ-bpclermont.fr/>).



The EMEC meetings cover a broad range of topics within the field of environmental chemistry, and interdisciplinary presentations are very welcome. They always attract high quality

science presentations and invited talks from internationally renowned researchers working in environmental chemistry and related fields. Every year the EMEC conferences, organized all over Europe, gather between 150 à 200 participants from Europe and other countries. The main objectives of these meetings are to bring together scientists working in the field of environmental chemistry, to report the most advanced research progresses in this research field and to pave the way for the future research and challenges.

EMEC 19 will cover the following topics: **Sustainable chemistry** (new compounds, green processes), **Environmental compartments** (Atmosphere, Soils, Marine and surface waters) with focus on **monitoring, processes** (biological and chemical), **remediation** and **ecotoxicology, Methodology and modeling**. The conference will be organized around 5 sessions that will be introduced by 5 invited speakers. Poster sessions and social events (visits, gala dinner...) will also contribute to scientific and friendly exchanges. EMEC 19 will encourage young scientists thanks to special scholarships and prizes for the best oral and poster presentations.

4) Polonca Trebše:  
**Retirement of Prof. Isabel Villaescusa, ACE board member**

Last November, at the already eighteenth (18) EMEC) conference in Porto, our colleague and member of the Board of Association of Chemistry and the Environment, prof. Isabel Villaescusa retired. I have met prof. Villaescusa in Belgrade in December 2005 on EMEC 6, when I attended the conference for the first time. Since she is such a warm person, we immediately established contact and with time we became friends. In spite of the fact that we met in all this years only once or twice per year, we were constantly in contact in relation to different matters, like student exchange programme, organizational matters or just a casual women chat.



Her professional path has started in Girona, Spain, where she achieved her Doctoral degree in the year of 1993 and was later on awarded for the best PhD Thesis of the Universitat Politècnica de Catalunya for that year. Prof. Villaescusa was employed at University of Girona and was responsible for the research group “Metals and Environment” of the Chemical Engineering department from the year 2000. She had more than twenty years of experience in biosorption processes using agrofood wastes and activated carbons to eliminate metal ions and organic pollutants from contaminated waters. She published more than 100 articles including reviews in journals from the lists of the Journal Citation Report (JCR) of Applied Chemistry, Chemical Engineering, Environmental Science, most of them ranked in the first and second quartile. At the end of September 2017 she became a professor EMERITUS at Universitat de Girona (Girona, Spain).



She lectured Organic Chemistry, Instrumental Analysis, Chemistry of the Environment, Biosorption in Chemical Engineering and Agrofood Science degrees. She was responsible for several Erasmus programs for students and teachers exchange from 1991 to 2017, resulting in the training of more than 100 foreign students in university laboratories. She was a supervisor of six PhD theses as well.

Prof. Isabel Villaescusa was a member of the Association of Chemistry and the Environment practically from the very beginning. All the time she acted as active member and attended almost all EMEC conferences. She didn't attend only twice in all the years, at the first one, in 2000 in Nancy, and then in 2013 in Budva, when she became a Vice rector at Universitat de Girona. In 2009 she organised EMEC conference in Girona. In the period 2012-2015 she served as a secretary of the Association. Additionally she still serves as Associated editor of Environmental Chemistry Letters, official journal of the Association.

Finally, in June 2017 she visited us in Ljubljana, Slovenia, as well. She was invited to give some lectures at the Summer school Hazardous substances, organised by Faculty of Health Sciences of University of Ljubljana.

Dear Isabel, we all wish you joyfull retirement, filled with family and friendly life!

Polonca Trebše, on behalf of the Board of ACE

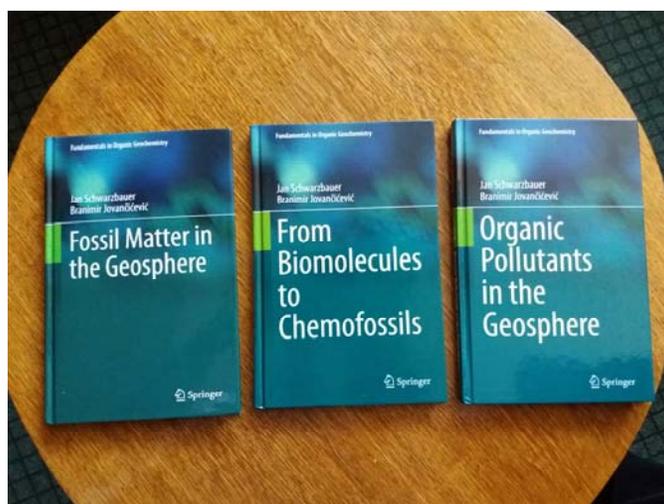
5) Jan Schwarzbauer and Branimir Jovančičević:  
**Fundamentals in Organic Geochemistry**

Supported by Alexander von Humboldt Foundation, a collaboration between Professor Jan Schwarzbauer (Institute of Geology and Geochemistry of Petroleum and Coal, RWTH and Aachen, Germany) and Professor Branimir Jovancicevic (University of Belgrade, Faculty of Chemistry, Belgrade, Serbia), both members of the Scientific Board of the Association of Chemistry and the Environment (ACE), lasts almost twenty years. Among many of their common scientific and teaching activities, one of the most important tasks is working on the preparation of the text book series entitled *Fundamentals of Organic Geochemistry*.

In 1933 a four-pages article published by Treibs *et al.* in the German journal *Angewandte Chemie* pointed for the first time to molecular structures of biogenic origin in fossil matter. This publication opened the door to a new and fascinating scientific field - the Organic Geochemistry. Today, Organic Geochemistry is a modern scientific subject characterized by a high transdisciplinarity and located at the edge of chemistry, environmental sciences, geology and biology.

The commercial importance of oil (petroleum), as fossil fuel, has enabled the rapid development of Organic Geochemistry. The origin and transformation of natural organic substances in the geosphere has been intensively studied and enclosed now also anthropogenic substances and their environmental fate. Therefore, the research in this field has a very strong fundamental and applicative character.

The concept of *Fundamentals of Organic Geochemistry* by Schwarzbauer and Jovancicevic (printed by Springer) includes four issues/books: 1) Fossil matter in the Geosphere, 2) From biomolecules to molecular fossils, 3) Anthropogenic organic contaminants in the environment and 4) Introduction to Analytical Methods in Organic Geochemistry. First three books are already printed (2015-2018), whereas the 'Introduction to Analytical Methods in Organic Geochemistry' (4<sup>th</sup> book) is in the last phase of preparation and will be published 2019.



- 1) Schwarzbauer J. and Jovančičević B. (2015) Fundamentals in Organic Geochemistry - Fossil Matter in the Geosphere, Springer, ISBN 978-3-319-11552-8, DOI 10.1007/978-3-319-11938-0, 158 pp.

- 2) Schwarzbauer J. and Jovančičević B. (2016) Fundamentals in Organic Geochemistry - From Biomolecules to Chemofossils, Springer, ISBN 978-3-319-25075-5, DOI 10.1007/978-3-319-25075-5, 162 pp.
- 3) Schwarzbauer J. and Jovančičević B. (2018) Fundamentals in Organic Geochemistry – Organic Pollutants in the Geosphere, Springer, ISBN 978-3-319-68937-1, DOI 10.1007/978-3-319-68938-8, 187 pp.

<p>6) Albert Lebedev: <b>Joint activities of ACE board members</b></p>
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**1.**

Prof. Dr. Polonca Trebše, University of Ljubljana, Slovenia  
Prof. Albert Lebedev, Lomonosov Moscow State University, Russia

Prof. Trebše and Prof. Lebedev started scientific collaboration in 2010. Prof. Lebedev twice was a guest at the University of Nova Gorica (Slovenia) giving a short course on Environmental mass spectrometry in 2010 and 2012. In 2014 and 2016 Professor Lebedev visited Faculty of Health Sciences, University of Ljubljana. As a guest of Prof. Trebše, during this visit, he gave lectures to the students of Sanitary Engineering within the course Hazardous substances. Prof. Trebše visited Moscow State University in 2015 and 2017 giving lectures to the postgraduate students studying "Physico-chemical methods in organic chemistry". Prof. Trebše participated in the 8th Congress of the Russian Society for Mass Spectrometry in October 2017 with the oral presentation P.Trebše, M.B.Kralj, A.Lebedev, M.Sarakha. "Transformations of selected UV filters under disinfection conditions".

Together they were published 8 papers in SCI journals.

**2.**

Prof. Dr. Jan Schwarzbauer, RWTH Aachen University, Germany  
Prof. Dr. Branimir Jovančičević, University of Belgrade, Serbia

Prof. Schwarzbauer and Prof. Jovančičević participated in the foundation of Association of Chemistry and the Environment (ACE) in Nancy (France) in 2000. Prof. Dr. Branimir Jovančičević was guest for research stays at the Laboratory for Organic-Geochemical Analyses (RWTH Aachen University, Germany), in total ten times (per one month and once tree months, 2004-2018) as a Alexander-von-Humboldt scholar. On all occasions, Prof. Dr. Jan Schwarzbauer was the host and supervisor. On various occasions, Prof. Schwarzbauer was a guest at the Faculty of Chemistry, University of Belgrade. During these visits he lectured to researchers and students. On several occasions, coworkers of Prof. Jovančičević stayed as research visitors at the group of Prof. Schwarzbauer. Prof. Dr. Jan Schwarzbauer was a member of the committee of the doctoral thesis of Mališa Antić at the Faculty of Chemistry in Belgrade. The title of the thesis was: "Study of Transformations of Biological Markers of Oil Pollutants: Industrial Waste Water and Laboratory Conditions" (2006).

Joint international projects:

TEMPUS project:

“Modernisation of Post-Graduate Studies in Chemistry and Chemistry Related Programmes”,  
MCHEM, October 15 21010 – October 15 2013

Bilateral research project:

“Geochronological studies on sediment cores from Djerdap Lake - Reconstruction of the pollution history”, 2015/2016

Together they were published 3 books and 8 papers in SCI journals and presented 16 contributions at scientific conferences.

### 3.

Prof. Albert Lebedev, Lomonosov Moscow State University, Russia

Prof. Anne Marie Delort, Université Clermont Auvergne, CLERMONT-FERRAND, France

Cooperation in the field of cloud chemistry started in 2016. Dr. Polyakova visited Clermont-Ferrand in March 2017 with a one week visit in terms of French bilateral grant. A joint PhD student Maria Tolpina started her research in Moscow University and Clermont-Ferrand university in September 2017 in terms of Vernadskii program. Several joint presentations on the organic compounds in the clouds were done at the International conferences. The first joint paper is ready for the submission.

### 4.

Prof. Dr. Josef Čáslavský, Brno University of Technology, Czech Republic

Prof. Dr. Branimir Jovančičević, University of Belgrade, Serbia

Prof. Čáslavský and Prof. Jovančičević participated in the establishment of Association of Chemistry and the Environment (ACE) in Nancy (France) in 2000. Prof. Jovančičević was guest at the Brno University of Technology. At 4<sup>th</sup> Meeting on Chemistry and Life (2008) he gave a plenary lecture titled „Transformation of Petroleum Pollutant in the Environment. Coworker of Prof. Jovančičević, Dr. Dubravka Radmanović-Relić, spent 6 months at her postdoctoral study in the research group of Prof. Čáslavský (2016). Currently, Dr. Konstantin Ilijević is also in the same group on postdoctoral improvement. On various occasions, Prof. Čáslavský was a guest at the Faculty of Chemistry, University of Belgrade. During these visits she also lectured to researchers and students. Prof. Čáslavský participated with presentation at 2<sup>nd</sup> Regional Symposium in Kruševac - Serbia (2003). At the 5<sup>th</sup> Conference of Chemistry and the Environment Protection (the mountain Tara – Serbia, 2008, organized by Serbian Chemical Society) he gave session lecture titled: Degradation Products of Synthetic Polymers. At the 6<sup>th</sup> Conference in Vršac (2013) he had four presentations and at the 7<sup>th</sup> in Palić (Serbia, 2015) he had one.

Joint international projects:

TEMPUS project:

“Modernisation of Post-Graduate Studies in Chemistry and Chemistry Related Programmes”,  
MCHEM, October 15, 2010 – October 15, 2013

ERASMUS+ project:

“ICT Networking for Overcoming Technical and Social Barriers in Instrumental Analytical Chemistry Education” (NETCHEM), October 15, 2016 -

## 5.

Prof. Dr. Polonca Trebše, University of Ljubljana, Slovenia  
Prof. Dr. Branimir Jovančičević, University of Belgrade, Serbia

Prof. Trebše and Prof. Jovančičević started the cooperation after the 6<sup>th</sup> European Meeting on Environmental Chemistry (EMEC) which was held in Belgrade (Serbia) in December 2005. At this conference Prof. Trebše has been awarded for the best oral presentation by Association of Chemistry and the Environment. Prof. Jovančičević was guest at the University of Nova Gorica (Slovenia). He was a member of the Committee of the master's thesis of Ludvik Penko titled “Polycyclic Aromatic Hydrocarbons in the Sea Water and Sediments of the Gulf of Trieste” (2009). After that he visited Faculty of Health Sciences, University of Ljubljana. As a guest of Prof. Trebše, during this visit, he lectured to students of study programme Sanitary Engineering within the course Hazardous substances. Coworker of Prof. Jovančičević, Dr. Gorica Veselinović made a part of her doctoral research in the group of Prof. Trebše. Her visit was supported by CEEPUS network Training and research in environmental chemistry and toxicology. Prof. Dr. Polonca Trebše was a mentor (together with Prof. Jovančičević) of the doctoral thesis of Gorica Veselinović at the Faculty of Chemistry in Belgrade. The title of the thesis was: “Stability and Toxicity of Benzophenone-type UV Filters and its Transformation products in the Presence of Chlorine in an Aqueous Media” (2016). On various occasions, Prof. Trebše was a guest at the Faculty of Chemistry, University of Belgrade. During these visits she also lectured to researchers and students. Prof. Trebše participated at 5<sup>th</sup> Conference of Chemistry and the Environment Protection (organized by Serbian Chemical Society at the mountain Tara in Serbia) with plenary lecture titled: Organophosphorus and Neonicotinoid Insecticides – Degradation and Toxicity Monitoring. At the 6<sup>th</sup> Conference in Vršac she had three presentations and at the 7<sup>th</sup> in Palić (Serbia) she had one.

Joint international projects:

TEMPUS project:

“Modernisation of Post-Graduate Studies in Chemistry and Chemistry Related Programmes”,  
MCHEM, October 15 21010 – October 15 2013

Together they were published 1 paper in SCI journal and presented 1 contribution at scientific conferences.

## 6.

Prof. Albert Lebedev, Lomonosov Moscow State University, Russia  
Prof. Dr. Branimir Jovančičević, University of Belgrade, Serbia

Prof. Lebedev participated at 5<sup>th</sup> Conference of Chemistry and the Environment Protection (organized by Serbian Chemical Society at the mountain Tara in Serbia) with plenary lecture titled:

Environmental mass spectrometry. At the 6<sup>th</sup> Conference in Vršac he had a plenary lecture on Mass spectrometry in environmental studies.

7) Stuart Gibb:

**Medicating our environment: Human drugs in natural waters**

Pharmaceuticals play a fundamental role in modern health care, however, numerous studies have shown that they can also be contaminants that may threaten aquatic organisms and water quality, including potable supplies.

In Scotland, >100 million items of medicine (worth £1.3bn) were prescribed in 2016/17 and >3000 active ingredients are currently licensed for use in the UK. Increased longevity and human population growth, together with the drive to promote human health and pharmacological advances have resulted in a proliferation in the quantity and diversity of pharmaceuticals consumed. By 2020, global spending on pharmaceuticals is projected to reach >\$1.3 trillion/yr.

Following administration, human pharmaceuticals pass through the body and are introduced into the domestic wastewater system (via urine and faeces), in either metabolised or un-metabolised forms: likewise, the direct flushing of unused pharmaceuticals down the toilet is also commonplace.

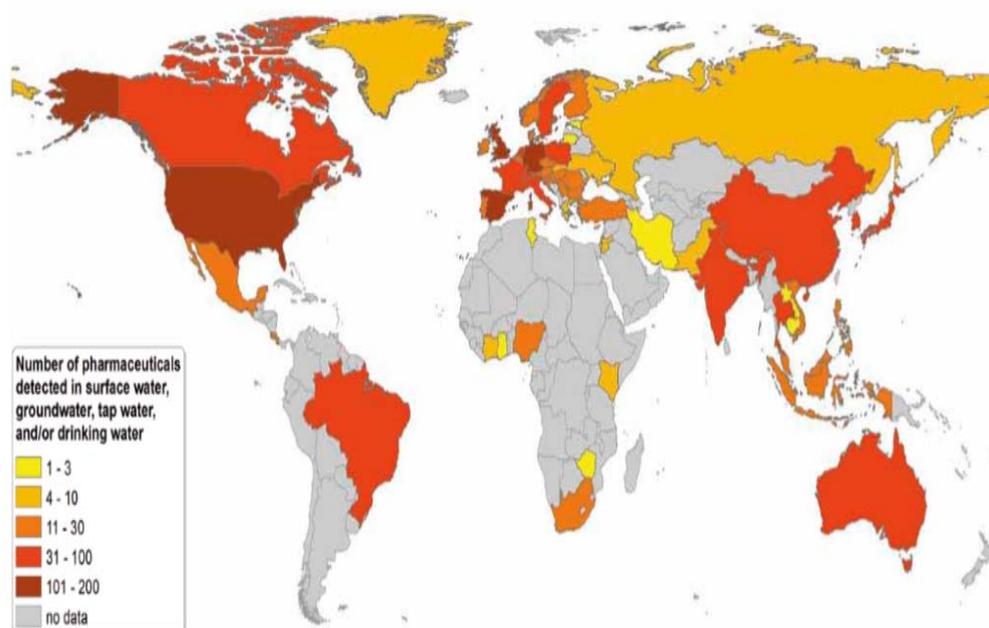
However, many studies have shown that wastewater treatment plants (WWTPs) do not always effectively remove or degrade many of these bio-active compounds. WWTP effluents have been identified as the principal pathway for the introduction of these compounds into the aquatic environment. More than 600 pharmaceuticals from classes including antibiotics, antidepressants, beta-blockers, NSAIDs, antifungals and lipid-lowering agents have been detected in rivers, lakes or coastal waters in >70 countries worldwide.

Since pharmaceutical compounds are specifically ‘designed’ or ‘selected’ to produce biological effects, their potential impact on water quality and non-target organisms in the aquatic environment is of growing concern. For example, 17 $\alpha$ -ethinylestradiol, a synthetic hormone commonly used in birth control pills, has been widely shown to cause feminisation of male fish and this in turn can potentially lead to population collapse (Kidd et al. 2007). Also, the antidepressant fluoxetine has been shown to delay tadpole development in leopard frogs (Foster et al. 2010), while (in Sweden) the presence of the anti-anxiety drug Oxazepam has been shown to influence the migratory behaviour of salmon smolts (Hellstrom et al, 2017).

As global pharmaceutical use increases, and pressures on water resources grow, understanding the presence and behaviour of these so called ‘emerging contaminants’ in natural and potable waters has become a priority issue from a scientific and environmental perspective, as well as for human health. Numerous unanswered questions remain - and thus, extensive research opportunities exist.

The ERI is part of a global effort to understand and mitigate against the effects of pharmaceuticals in the environment. Activity spans from developing high sensitivity analytical techniques for target drugs to advancing novel techniques for water remediation.

### Number of pharmaceuticals detected in surface water, groundwater, tap water, and/or drinking water



Source: Aus der Beek et al., (2016). Pharmaceuticals in the environment—Global occurrences and perspectives *Environmental Toxicology and Chemistry*; Volume 35 (4); pp 823–835; 2016

Current research includes an Erasmus project with the Institute of Chemistry and Technology of Environmental Protection at Brno University of Technology to develop ‘passive sampling’ techniques to assess the distribution of human pharmaceuticals in the aquatic environment (Pavlina Landova). Two PhD scholarships (funded through the Scottish Government’s HydroNation programme) will also (a) characterise the degradation pathways for human pharmaceuticals in natural waters (with the James Hutton Institute; Lydia Niemi), and (b) develop and evaluate low cost, natural sorbents for the removal of drugs from wastewater (with the Chinese Academy of Sciences, James Hutton Institute and the University of Dundee; Yuan Li).

ERI is also currently working with local stakeholders such as NHS Highland, Highlands and Islands Enterprise and Scottish Water, and through their membership of Healthcare Without Harm, will seek to *‘transform health care worldwide so that it reduces its environmental footprint, become a community anchor for sustainability, and, be a leader in the global movement for environmental health and justice’*.

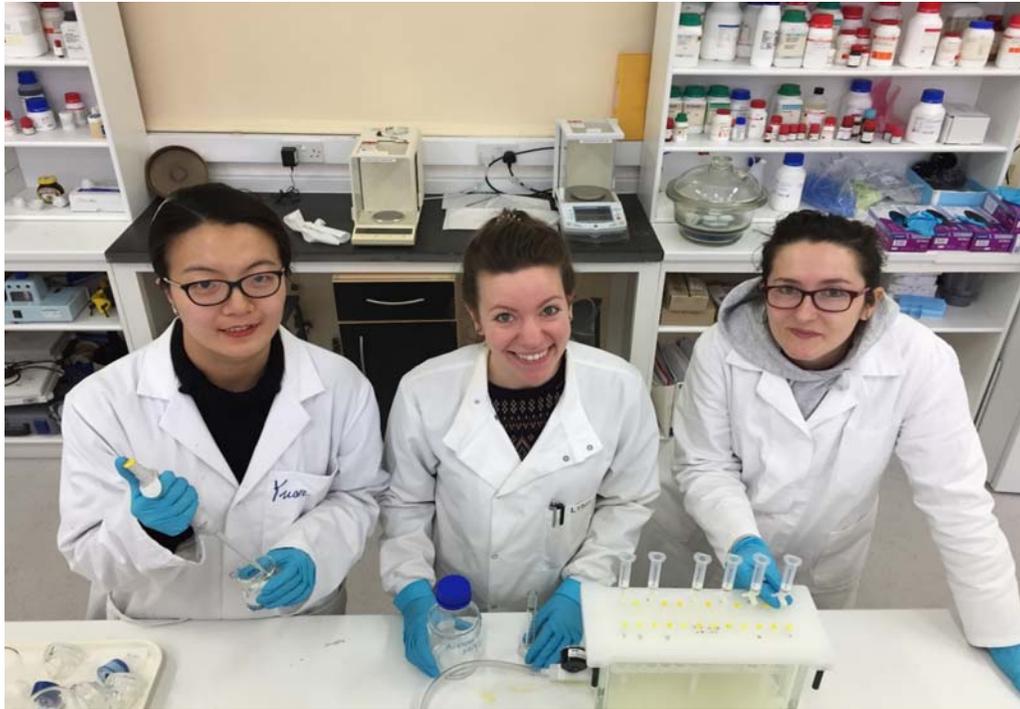


Photo caption: Yuan Li, Lydia Niemi and Pavlina Landova (L-R) testing for the presence of pharmaceuticals in wastewater at the ERI labs in Thurso.



For further information contact:

[Stuart.Gibb@uhi.ac.uk](mailto:Stuart.Gibb@uhi.ac.uk); [Mark.Taggart@uhi.ac.uk](mailto:Mark.Taggart@uhi.ac.uk); [Yuan.Li@uhi.ac.uk](mailto:Yuan.Li@uhi.ac.uk); [Lydia.Niemi@uhi.ac.uk](mailto:Lydia.Niemi@uhi.ac.uk); [Pavlina.Landova@uhi.ac.uk](mailto:Pavlina.Landova@uhi.ac.uk)

8) Josef Caslavsky:  
**ACE and young researchers - scholars at EMEC18 in Porto**

Association of Chemistry and the Environment traditionally encourages the participation of master and Ph.D. students at the EMEC meetings by awarding scholarships covering the conference fee and travel and accommodation expenses up to € 500. Taking into account the financial situation of the association, it was decided to support the participation of 3 young scientists at EMEC18 in Porto. The selection procedure was identical to that applied in last years – potential applicants were informed about the possibility of scholarship on the EMEC18 and ACE web pages and also by e-mail communication from EMEC18 organizers. Applicants sent their CV together with description of their scientific results, letter of recommendation of their supervisor and certificates of current enrolment and examination results to prof. Caslavsky, who after administrative check focused on the eligibility of applicants as well as on the completeness and validity of all parts of the application distributed all applications to the members of the evaluation committee, which consisted from the ACE Board members who were not interested about the result (i.e. they weren't supervisors of any of applying Ph.D. students). Each member of the evaluation committee sent his or her order of candidates to prof. Čáslavský, who summarized all proposals and evaluated the final order, which was - after approval of all evaluation committee members - published.

In summary, 16 applications had been submitted before the deadline. Two of them were refused due to non-eligibility of applicants, remaining 14 applications were sent to the members of evaluation committee. On the base of their votes following three students were awarded: Eneliis Kattel (Tallinn University of Technology, Estonia), Marlene María Vila González (University of Santiago de Compostella, Spain) and Jianan Li (University College London, UK).