

## **EXTECH2017 – 19<sup>th</sup> INTERNATIONAL SYMPOSIUM ON ADVANCES IN EXTRACTION TECHNOLOGIES**

The International Symposium on Advances in Extraction Technologies (ExTech) represents the major conference emphasizing new developments in sample preparation. It is a biannual congress and this year it took place from 27<sup>th</sup> to 30<sup>th</sup> of June in the Faculty of Medicine of the University of Santiago de Compostela (Spain). It covered fundamental developments and new technologies in different areas of analytical sciences (preparative, fundamental, and applied science). Furthermore, special attention to environmental topic, food quality, pharmaceutical, personal care product analysis, biomedical applications, omic sciences, and bioanalysis was paid.

The schedule was organized during three-day meeting involving a total of 342 contributions. It was divided into 10 talk sessions containing a plenary lecture, 19 keynote lectures, and 87 oral presentations. Concerning the poster sessions, there were 235 poster Communications, presented in 5 sessions during Wednesday and Thursday. Furthermore, out of these 342 contributions, 42 talks and 105 poster communications were presented by young researchers. Additionally, there was an exhibition of the recent developments in analytical instrumentation, chemicals, materials, accessories, and scientific books. Indeed, 7 talks were given by specialists from companies sponsoring the event.

The communications presented in this conference dealt with different aspects of extraction topics (new extraction phases, new technologies, sample preparation for direct introduction to MS, emerging contaminants and current issues, food control and analysis, forensic analysis, bioanalytical applications, etc.), all leading to the integration and miniaturization of the whole analytical process to facilitate high throughput laboratory and on-site determinations. Therein, researchers had the opportunity to present, share and discuss their latest results with the rest of participants. Several international renowned scientists composed the scientific committee and the meeting was chaired by Dr. María Llompert (University of Santiago de Compostela, Spain), Dr. Thierry Dagnac (INGACALCIAM, A Coruña, Spain), and Dr. Janus Pawliszyn (University of Waterloo, Canada) as honorary chairman.

The ExTech 2017 started on Tuesday evening with registration. Wednesday started with an opening ceremony and the interesting talk given by the honorary chairman, Dr. Janus Pawliszyn, focused on the new developments in sample preparation for environmental applications. Moreover, three sessions were carried out. Session I was mainly focused on extraction and omic sciences. For instance, the speech given by Dr. Alejandro Cifuentes on the obtainment and characterization of bioactive compounds from natural sources by using green pressurized extraction and the employment of foodomics approaches. Besides, two parallel sessions (Session II and Session III) took place. Different talks in Session II were about advances in extraction technologies and sample preparation for direct introduction into MS. Meanwhile, presentations in Session III had a deeply vision on new extraction phases and materials, where Dr. Charlotta Turner could give an interesting talk about the use of compressed carbon dioxide (and the mixture with green organic liquids) as an interesting solvent in extraction and chromatography processes. After lunch, Session II and Session III continued with several talks dedicated to new extraction technologies and materials such as magnetic ionic liquids for microextraction techniques given by Dr. Alberto Chisvert, or metal-organic frameworks as novel sorbents presented by Dr. Verónica Pino. Moreover, sponsor session, with several lectures regarding to new advances in extraction materials, solvents, and techniques for the extraction and analysis of different compounds from different matrices. Parallel to Session II and Session III, Young scientists Session I was carried out. Fourteen oral presentations from young scientists were about various topics, mainly around the new extraction materials for the detection of specific compounds, or the use of the most recent techniques for the analysis of molecules in different samples such as water, cosmetics, oral fluids, drugs, etc. Poster session of the symposium I, II, III, and IV were carried out at the end of the day. To conclude the day, we could attend for the welcome reception and enjoy a delicious cocktail which took place in Hostal Los Reyes Católicos.

On Thursday, the congress started with four parallel sessions (Sessions IV, V, VI and VII). The Session IV was focused on environmental sampling, passive sampling and time weighted average sampling, while session V was on environmental samples preparation (extraction, concentration and separation techniques). The Session VI and VII were focused on

biological samples preparation and forensic analysis, respectively. During the Session IV, Dr. Graham Mills talked about the role of passive samples devices in managing pollution in river catchment and Dr. Kevin C. Jones addressed the passive sampling of organic chemicals, its current status application and future opportunities. In the Session V, Dr. Hian Kee Lee showed the results on the implementation of a fully automated total analytical platform integrating water sampling, sample preparation and gas or liquid chromatography-mass spectrometry. It is worth mentioning that A. Ccancapa presented a talk about simultaneous determination of pyrethroids and pyrethrins by dispersive liquid-liquid microextraction (DLLME) in water and sediment samples. After coffee break, the Session VI took place. Dr. Gangfen Ouyang from the Sun Yat-sen University (China) opened the afternoon lectures giving a talk about solid phase microextraction (SPME) techniques for *in vivo* sampling and analysis. After that, Prof. Zhu (China) showed applications of *in vivo* SPME techniques in plants analysis. The next lecture was presented by Prof. Segundo (Portugal) talking about monolithic columns and analysis of complex samples. Subsequently, Prof. Benavente (Spain) presented on-line solid phase extraction capillary electrophoresis mass spectrometry for high sensitivity analysis of biomolecules. The last presentation was presented by Prof. Herrero-Martínez (Spain) who talked about the preparation and characterization of polymeric monoliths modified with gold nanoparticles for their use in pipette-tip extraction of proteins. In parallel the Session VII, Dr. Almirall (USA) gave a talk about collection and analysis of breath components for marijuana detection using capillary microextraction of volatiles (CMV). After that, Dra. Barbara Bojko (Poland) presented SPME as a multipurpose tool for translational medicine and clinical analysis. The next oral presentation was about polysaccharide aerogels as carriers processed by supercritical fluid extraction for life sciences applications presented by Dr. Carlos A. García-González (Spain). Finally, Dr. Krzysztof Gorynski (Poland) showed SPME coupled to high sensitive LC-MS/MS system to analyze prohibited substances in saliva. After lunch break, young scientists' sessions II and III were carried out mainly focused on environmental and food application and biological samples preparation, respectively. In the young scientists Session II, Maria Celeiro (Spain) presented a talk about screening of hazardous substances in football fields of synthetic turf by gas chromatography-mass spectrometry. Afterwards, Emanuela Gionfriddo (Canada) showed inter-laboratory validation of thin film microextraction technique for determination of pesticides in environmental water samples. Subsequently, Rocío Facorro (Spain) talked about simultaneous determination of trace level of 11 widespread fungicides in water by SPME gas chromatography-triple quadrupole mass spectrometry. Additionally, eleven oral communications were presented with participants from Poland, Spain, China, France and Italy. In the parallel Young scientists sessions III, Narea Lorenzo Parodi (Germany) presented hollow fiber-liquid phase Microextraction as sample preparation to determine aromatic amines in human urine. Mau Bonichon (France) showed the development of immunosorbent coupled on-line to immobilize pepsin reactor and microLC/MS<sub>2</sub> for the analysis of the chemical weapon in human plasma. The next oral presentation was about strategies in 1D and 2D page electrophoresis for the simultaneous identification of serum proteins and metalloproteins gave by María del Pilar Chantada-Vázquez (Spain). Other eleven talks were presented focused on bioanalytical and biomedical applications. To conclude this day, after coffee break, there was a young scientist-poster session.

Last day, Friday 30<sup>th</sup> June, began with the plenary lecture (Session VIII) of Prof. Boguslaw Buszewski (Poland), who talked about the miniaturization in online sample preparation for separation techniques. After that, Prof. Manuel Miró (Spain) gave a lecture about automatic sample preparation in bioaccessibility/bioavailability in exposome studies of environmental solids. Other five lectures were presented focused on automated analytical systems, sensors, new devices and techniques. Afterward, the Session IX was focused on food control and analysis, natural products, flavour, and fragrance analysis. Dr. Luigui Mondello (Italy) showed on-line extraction and determination by subcritical fluid extraction-supercritical fluid chromatography-mass spectrometry. Subsequently, Dr. Henryk Jelen (Poland) shared his knowledge about different strategies for headspace extraction of volatile phenols in beer. The Session X addressed ionic liquids in sample preparation. Prof. Anderson (USA) discussed the magnetic ionic liquids as extraction and preservation solvent for nucleic acid sample preparation. After that, Prof. Guzmán-Bernardo spoke about magnetic nanocellulose coated with ionic liquid as a valuable magnetic solid phase extraction sorbent for the monitoring of drugs as emerging pollutant in natural waters.

The ExTech 2017 concluded with the closing ceremony where all the participants were invited to next ExTech 2018 that will be held in Iowa (USA).

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