

# Keynote Forum December 03, 2018

## *Toxicology 2018 & Recycling 2018*



Joint Event

International Conference on  
**Toxicology, Clinical Toxicology & Pharmacology**  
&

6<sup>th</sup> International Conference on  
**Recycling & Waste Management**

December 03-04, 2018 | Dubai, UAE

# Toxicology, Clinical Toxicology & Pharmacology

&

# Recycling & Waste Management

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## Luc De Haro

Marseille Poison Centre, France

### Marine Toxicology: New challenges for Poison Control Centers


Between 2010 and 2014, the Marseille poison center had been requested by various structures at the national and European levels to make a synthesis of the new dangers induced by the toxic marine organisms. At that time, the French Metropolitan Coast was directly concerned by cumbersome toxic invaders: in Aquitaine with the Portuguese-man-of-war (*Physalia* sp.) swarming in summer; in Brittany with the sea lettuce of the genus *Ulva* (mounds in putrefaction on the beaches produce hydrogen sulfide); in Provence with blooms of tropical dinoflagellates of the genus *Ostreopsis* producing “palytoxin-like” molecules able to contaminate the sea water but also the surrounding air. If these health problems with heavy economic impacts persist a few years later, what more can we say in 2018? Undeniably, the initial concerns are confirmed: the direct (overexploitation of fishing sources, water pollution, etc.) or indirect (global warming) anthropogenic modifications of aquatic biotopes are at the origin of new marine toxicological problems to which poison control centers are faced. The list of these new medical challenges is long: the venomous lion fish of the Indian Ocean (genus *Pterois*) has invaded the West Indies and generates many envenomations; the Red Sea Lessepsian pufferfish *Lagocephalus sceleratus* colonized the

entire Mediterranean in record time (confirmed presence in Spain in 2017) and the consumption of its tetrodotoxin-rich flesh is potentially lethal; the consumption of sea violets of the genus *Microcosmus* is at the origin of unexplained cerebellar syndromes in Provence but also in Croatia; the presence of ciguatera is now confirmed at the gates of Europe (native cases reported for the first time in Madeira and the Canary Islands); soft corals of the genus *Palythoa* or *Zoanthus* have become undesirable guests in marine aquaria because these invasive invertebrates can induce severe respiratory and ocular symptoms in aquarists; Cyanobacterial blooms in fresh and/or brackish waters are multiplying with the production of neurotoxins or nephrotoxins with consequences in veterinary and human medicine. These subjects are fascinating but worrying because they are witnesses to ecological imbalances with tangible effects that we did not imagine a few years ago.

#### Speaker Biography

Luc De Haro is a clinical toxicologist working in the Marseille Poison Centre where he is the head of the Toxicovigilance unit specialized in the management of patients poisoned or envenomed by natural toxins (Mushrooms, plants or animals toxins including marine toxicology).

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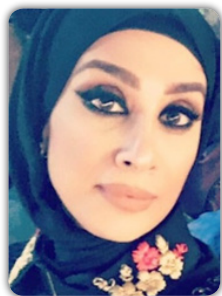
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## Noura Al-Jandal

*Kuwait Institute for Scientific Research, Kuwait*

### Assessment of endocrine disrupting chemicals in Kuwait coastal area and its impact on marine fish

Endocrine disrupting chemicals (EDCs) are of global concern and find their way to the marine environment via the sewage treatment plants (STPs). Dumping untreated sewage to the coastal areas is one of the critical stressors to Kuwait marine environment, which can deteriorate the quality of seawater and sediment. This study was designed to investigate the status and sources of EDCs and their effect on fish in Kuwait's coastal areas. The analysis of field samples from exposure sites revealed significant levels of EDCs in seawater (phthalates: 2.1 to 4.6 µg/l; alkylphenols: 1.2 to 16.4 ng/l; estrogens: 0 to 36.2 ng/l) which clearly indicated a local source or chronic input of untreated or partially treated water. Sediment samples showed significant levels of the three main classes of EDCs (phthalates: 2.1 to 15.7 mg/kg dry wt; alkylphenols: 2.5 to 15.1 µg/kg dry wt.; estrogens: 4.1 to 214.2 µg/kg dry wt.) which indicated a possible release from sediment which acts as a reservoir for pollutants. Yellow-finned seabream (*Acanthopagrus latus*) were placed in cages and exposed near sewage discharge areas for two weeks. Fish liver were dissected for histology and immunohistochemistry and the results revealed hepatic alteration in fish liver samples

in the form of hepatic depositions and necrotic changes although no marked deviation in the structural integrity of the hepatic tissue was observed. Vitellogenin (Vtg) localization was also detected in liver samples correlated with the EDCs levels in seawater and sediment samples. The existing levels detected in Kuwait marine environment posed a physiological effect on fish and Kuwait Bay is very important and sensitive ecological system which should be protected from all kinds of stressors especially the anthropogenic.

#### Speaker Biography

Noura Al-Jandal has completed her PhD on 2011 from the University of Exeter, UK. She is an Associate Research Scientist in the Environmental and Life Sciences Research Center at the Kuwait Institute for Scientific Research working on endocrine disrupting chemicals effect on marine biota. She lead several client funded project and published her work in peer-reviewed journals. She is a member in the Associate of the Higher Education Academy (AHEA) and a qualified British Sub-Aqua Club (BSAC) Diving License Holder. She presented her work in several international conferences as a speaker. Recently she gave an Oral presentation in Conference Series the 12th International Conference on Environmental Toxicology and Ecological Risk Assessment held during in Atlanta, Georgia, USA. Currently she is working on projects of a high global significance such as microplastics assessment in Kuwait marine environment.

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## Seohyun Park

*Chonbuk National University, South Korea***Science in society: Towards receptor-oriented integrative risk governance in artificial turf risk case**

Science-centered policy is limited in dealing with complicated environmental and health issues that embrace a wide range of individual variability and diversity of socio-cultural as well as physical conditions. Among many individuals in society, children and infants are particularly the most vulnerable and sensitive group to chemical exposures because they are on developmental stages mentally as well as physically. Nevertheless, our society is not likely to conduct enough protection behaviors for them since the most environmental health risk tends to have long-term consequences and perceived as insignificant. Arguable cases of artificial turf also require analyses of environmental and health risk at various levels and dimensions. However, there are always insufficiency of scientific evidence subject to data and statistical outcomes in reflecting realistic risks linking among stressors, exposures to receptors, and their health impacts. Beyond scientific numbers, I argue that it is necessary to collect and analyze dialogues associated with multifaceted aspects of the risk to vulnerable risk receptors, in particular, children who everyday play and often hit the ground. Such risk dialogues presented by the media and posted on the internet are likely to increase risk perceptions of large numbers of population and lead them to have conduct precautionary and

protective behaviors to their children. By exploring artificial turf risk cases and public responses to the risk in the U.S. and South Korea, I argue the need of a receptor-oriented and integrative risk governance model in assessing and managing the risk. The receptor-oriented approach let decision-makers more focus on vulnerable population. In addition, the frame of integrative risk governance allows to involve larger numbers of responsible risk performers who are able to manage and communicate the risk desirably in the society.

### Speaker Biography

Seohyun Park has completed her PhD in August, 2008 from State University of New York, College of Environmental Science and Forestry, USA, with the area of study, environmental systems and risk management. She is currently working as a visiting researcher and a lecturer in Chonbuk National University, South Korea. As to her interdisciplinary academic background, she has made an effort to communicate science in society, in particular, with the subjects of environmental problems and chemical risks. She has published papers and engaged in research subjects regarding chemical safety management and risk communication, social and cultural aspects of environmental health and toxicology, climate change adaptation strategies of health, Radon risk communication, and development of public response systems in chemical emergency. She has particular attention to education and risk communication which enhance desirable risk perceptions, appropriate decision-making, and behaviors. This social mechanism eventually achieves social goals.

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# Keynote Forum December 04, 2018

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## Essam E Khalil

Cairo University, Egypt

### Waste management for power generation

Solid waste management SWM is one of the most significant challenges being faced by the world today. SWM hierarchy consists of reduction of waste volume, reuse, and reduction of the toxicity, recycle, recover energy; waste disposal in an environmentally sound manner. Waste incineration to heat is an effective conversion of large volumes of combustible waste, simple and robust process, consequently the heat produced can be recovered to generate steam or electricity. This leads to saving conventional fossil fuels. Good in densely populated urban areas where large sites suitable for landfilling are not available. Waste incineration suffers high capital cost and skilled operators are required (particularly for boiler operations), considering that some of the waste materials are non-combustible, and then supplemental fuel would be needed. Public disapproval of incineration with the risk imposed rather than voluntary. Solid waste composting is biochemical process where organic materials decompose into humus like material, with aerobic organisms in mechanical digesters with the presence of oxygen.

This would save land footprint that can be needed to separate waste. This study is aimed at identifying evolving technological trends, competitor's distribution and technological convergence pattern between ICTs and SWM technology. This paper is organized into several sections, starting with the literature review in Section 2. Section 3 provides the answers to the research questions through analyses and discussion. Finally, Section 4 presents summary of conclusions of the paper.

#### Speaker Biography

Essam E Khalil has obtained his DIC (1976) and PhD (1977) from Imperial College of Science and Technology, London University, UK. Currently he is a professor of Energy in Cairo University since June 1988. Over 46 years of experience in design and simulation of combustion chambers for terrestrial and aerospace applications. He has published 13 books in English and over 880 papers in journals and conference proceedings on combustion, energy and indoor air quality control. He is a Fellow ASME, Fellow ASHRAE, and Fellow AIAA. And he is also a ASME George Westinghouse Gold Award recipient 2009 along with a ASME Harry Potter Gold Award recipient in 2012. He is director at Large ASHRAE, USA

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## Petros Gikas

### Anthoula Manali

*Technical University of Crete, Greece***Electric energy production from primary sieved solids through gasification**

Micro-sieving is a novel rotary belt filtration process, which separates suspended solids (SS) from raw wastewater. The openings of the belt filter are typically between 150-350  $\mu\text{m}$ , however, the filtration is primarily based on the cake that is formed on the belt, due to the accumulation of the separated SS (which are continuously removed through a scrubbing device). SS removal yield, for municipal wastewater has been measured between 30-50%, with parallel BOD reduction of about 20-30%. The produced biosolids (Primary Sieved Solids-PSS) have solids content between 35-45% and High Heating Value (HHV) between 23.5-24.4 MJ/kg, and thus they are ideal for gasification. However, additional drying is required, prior to gasification, to achieve solids content of about 85%. A complete system is under installation at the Wastewater Treatment Plant of Re-thymno, Greece. Initially, about 5000 m<sup>3</sup>/d of raw wastewater, will be treated by micro-sieving. The produced PSS will be further dried and then will be gasified to produce syngas. The latter will be fed into a co-generation engine for the production of thermal energy (will be used for PSS drying) and electric energy. Based on mass and energy

balances, the produced electric energy will be sufficient to operate the system: micro-sieving-drying-gasification, while excess electric energy is expected to be produced. An additional benefit, apart from the energy production, is the enhancement of the performance of the downstream WWTP, due to the removal of a large fraction of SS from the wastewater, prior to the aeration tank. The study is supported by the European Commission, through the LIFE program: "New concept for energy self-sustainable wastewater treatment process and biosolids management (LIFE B2E4SustWWTP)".

#### Speaker Biography

Petros Gikas is Associate Professor at the School of Environmental Engineering, Technical University of Crete, Greece, and Director of the "Design of Environmental Processes Laboratory". His research interests are focused on municipal, industrial and agricultural waste and wastewater management. He is specifically active in the design of novel wastewater treatment processes, with emphasis in low cost – low energy treatment processes and on water reclamation and reuse applications. He is also working on energy recovery from biosolids and municipal solid waste, utilizing thermal or biological processes. He has over 50 publications and over 100 conference participations, while he is Associate Editor for the Journal of Environmental Management.

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