Jimmy Yun, Int J Waste Resour 2018, Volume 8
DOI: 10.4172/2252-5211-C1-011

8th World Congress and Expo on Recycling

June 25-26, 2018 | Berlin, Germany

Waste and energy management challenges of biopharmaceutical APIs manufacturing industries in China

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In recent years, the pharmaceutical industry in China has taken tremendous steps to reinvent itself into an environmentally responsible manufacturing industry. However, with China being a major manufacturing center for pharmaceutical active ingredients, the amount of solid and liquid waste as well as air pollutants being generated has posed significant challenge to conventional treatment technologies. According to publicly released statistics, China pharmaceutical industry emitted in excess of 500 million tons of trade effluent and 200 thousand tons of COD in 2010, representing 2.5% and 3.1% of overall industrial emission respectively. From the government perspective, learning from the experience in the past 20 years, the Ministry of Environmental Protection, China has significantly revamped its regulation, and at the same time, is empowered with new enforcement authority to ensure industry comply to newly imposed stringent emission and discharge stipulated limits. It is clear that the Chinese government is determined to reverse the environmental impact caused by rapid industrialization in the past 2 decades and return the blue sky and clear water to the people. In view of this background, this presentation will examine the technological challenges that are faced by the biopharmaceutical active pharmaceutical ingredients (APIs) manufacturing industries in China, firstly from the perspective of meeting environmental regulatory compliance, and secondly from the perspective of post-compliance impacts of the trace amount of APIs emitted to our ecosystem.

Biography

Jimmy Yun is a Professor in the University of New South Wales (UNSW), School of Chemical Engineering, and a Professor in the Hebei Science and Technology University. After a stint of early careers in research development and industries in Japan, USA, Australia and Singapore, he founded Nanomaterials Technology Pte Ltd, Singapore and was the CEO between 2000 and 2012, providing specialized R&D services to some of the most influential global pharmaceutical and specialty chemicals companies. These pharmaceutical companies include GSK, Schering Plough, Johnson & Johnson, Novo Nordisk and Huabei Pharmaceutical Company etc., and specialty chemicals companies include BASF, 3M, Evoniks, Nitto Denko and Sinopec etc. The development areas, with more than 30 patents, covered advanced drug delivery system, particle system design, advanced environmental coating and catalyst, and polymer nano-composite etc. Currently, he is actively engaged in multiple environmental projects with the pharmaceutical industry in China.

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