

Editorial

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The fifth International Conference on Biotechniques for Air Pollution Control and Bioenergy took place in the city of Nîmes (France) on 11–13 September 2013. As with previous conferences in this series, the event was a great success and brought together about 60 participants from many different countries from Europe, Asia, Australia and both North and South America. This *Special Issue* is a compilation of only a few selected papers presented at the conference.

The conference aimed at sharing recent scientific advances in the use of bioprocesses and bioenergy for solving gas emissions problems. The development of improved operating strategies and novel bioreactors configurations has been emphasized. It should be stressed the investigation of a new and fast analysis apparatus (Selected Ion Flow Tube Mass Spectrometry) for evaluating a biofilter performance, the continuous / discontinuous ozone injection to improve bioreactor performance, the conversion of chemical reactors to bioprocesses, the biological anoxic treatment of O₂-free volatile organic compounds emissions, the potentialities of the

step-feed configuration or coupling biotechniques as promising operational strategies. A better understanding of the biodegradation mechanisms is of prime importance to provide control, diagnostic and prevision tools for bioprocess monitoring. Therefore, special attention was paid to the spatial distribution of dissolved oxygen (by developing a novel microsensor) and the potential relationship between the microbial component (more and more investigated because of the emergence of suitable molecular tools, even though not exempted from potential bias) and any functional parameter. The establishment of reliable and accurate models to stimulate biofiltration performance and functioning has been also discussed at the conference.

With respect to the energy sector, since the third Conference held in Delft (the Netherlands) on September 2009, sustainable gas treatment concepts have been developed through, for example, the conversion of waste gas emissions into cleaner (bio)fuels which can thus be obtained from cheaper sources than fossil fuels.

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