Respirometry in Control of the Activated Sludge Process: Benchmarking Control Strategies

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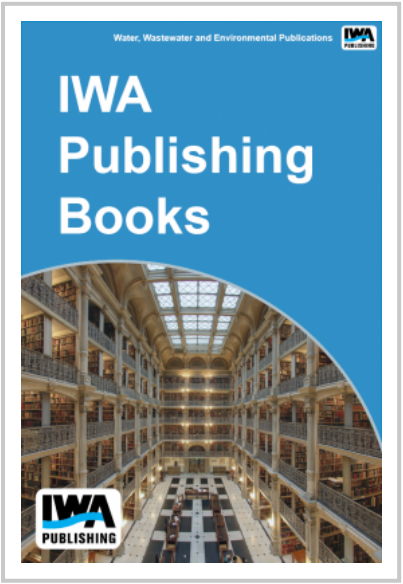

The respiration rate of activated sludge has generated much interest, because it is an essential variable in the activated sludge process and provides information on biomass activity and concentration of waste components. Recognising the need for an extensive evaluation of respirometry in control of the activated sludge process, IWA published Scientific and Technical Report (STR7): *Respirometry in Control of the Activated Sludge Process: Principles,* which included the biological background, measuring principles, measured and deduced variables, an introduction to control system principles and an overview of proposed and applied control strategies.

To complete the work, a second STR: *Respirometry in Control of the Activated Sludge Process: Benchmarking Control Strategies* was commissioned and, through the generous support of 14 corporate sponsors, a well-defined project was set up with the aim to accomplish an ambitious mission: the development of a simulation protocol (known as the "*IWA Simulation Benchmark*") and the unbiased evaluation of many respirometry-based control strategies.

This Report includes a complete description of the simulation protocol including model plants, simulation procedures and evaluation criteria. Also included in this STR is an overview of the strategy evaluations and a look into the future of respirometry as the basis for control. Finally, to ease the transition from paper to computer, and increase the application of the *IWA Simulation Benchmark*, a CD is included with many benchmark files and control strategy layouts generated using a variety of simulation platforms including GPS-X™, STOAT™ and WEST™.

This Report will be an invaluable source of information for practitioners and consultants dealing with the operation and control of activated sludge processes, developers of control systems, control software and simulation software, and manufacturers of respirometers and other environmental instruments in all industries dealing with toxic wastes.

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Also available: Respiromentry in Control of the Activated Sludge Process: Principles[1]

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