BW CONTROLLER 2.0

PROCESS CONTROL SIMULATION

## Whole Plant - Control System Simulation

BW Controller 2.0[TM] is a major upgrade of EnviroSim's well-received control module. It is designed to work in conjunction with BioWin versions 3 and 4 and can be used to address the most complex process control issues.

This new version helps engineers to evaluate recent improvements in online measurement and control technology effectively and explore and develop more sophisticated, innovative, and feasible control systems for sustainable wastewater treatment.

BW Controller 2.0 provides an extra level of sophistication for your BioWin simulations without compromising on ease of use.

Empower the dynamic whole plant capabilities of BioWin to simulate advanced process control strategies beyond BioWin's built-in control facilities; for example:

◎ Controlling air flow rates in reactors based on DO and/or ammonia concentrations at various locations using feed-forward and feed-back strategies.
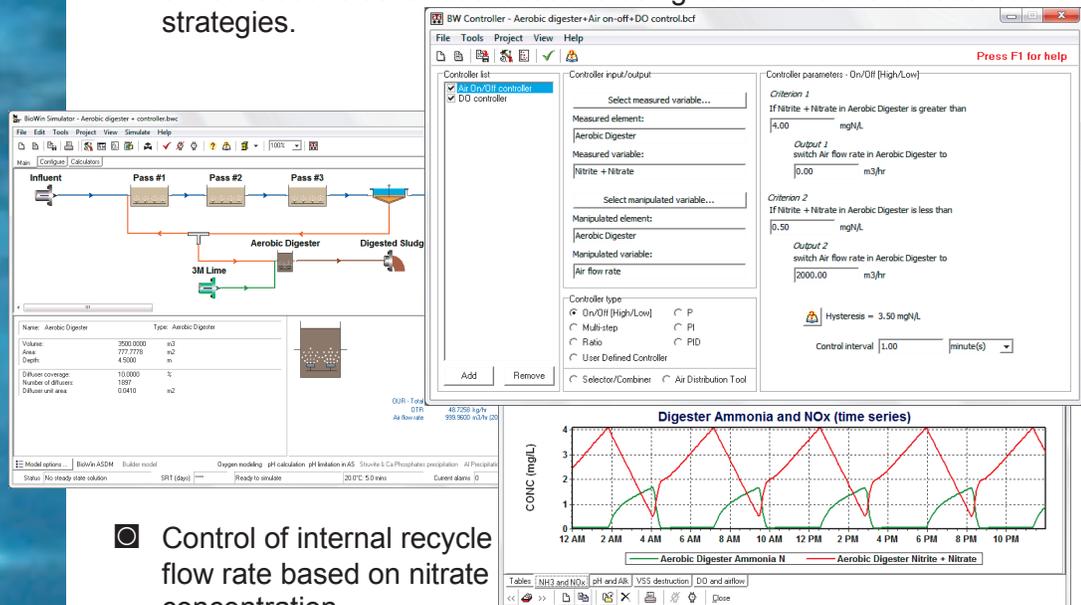
◎ Control of internal recycle flow rate based on nitrate concentration.

◎ Control mixed liquor suspended solids concentrations by adjusting wastage flow rate.

◎ Use pH measurements to adjust air flow to control nitrification, denitrification and anammox sidestream N removal systems.

◎ Change chemical dosing rates based on influent and effluent flows, concentrations, or mass rates.

Modeling Power and Precision

EnviroSim
ASSOCIATES LTD.

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Control Types

- **2-step control (On/Off or High/Low)** - to maintain a measured variable between upper and lower setpoints.

- **Multi-step control** - increase or decrease a manipulated variable step-wise.

- **Ratio control** - manipulated variable and measured variable are held at a constant ratio to each other.

- **Proportional (P) control, Proportional-Integral (PI) control, Proportional-Integral-Derivative (PID) control.**

- **Selector** - choose between the output of two controllers.

- **User-defined controller** - write your own control law for advanced control.

- **Air flow distribution control** - model the air distribution to different reactors. Default air flow split based on BioWin's diffuser settings. Allows modelling valves in series or in parallel.
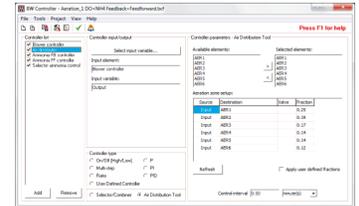
Flexibility in Operations

- **Multiple controllers** - use as many controllers as you require.

- **Cascade control** - use the output of one controller as an input to another controller.

- **Any BioWin output variable or any user-defined variable** can be assigned as the measured variable.

- **A wide range of manipulated variables including:**
  Flow (wastage, recycle etc.), air/power supply rates , chemical feed, fractionation and composition of influent streams.

- **Integrates seamlessly into BioWin versions 3 and 4.**

Approach

BW Controller 2.0 runs as a separate Windows application and links to BioWin. This means you can choose to add this analysis to any configuration or continue to use BioWin (with its variety of embedded controls) without being forced to worry about control issues.

Created by process engineers...for process engineers.

THE ENVIROSIM TEAM

Contact the experts at EnviroSim for all your modeling and simulation needs, be it software, training or process evaluation! Join the Club!

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