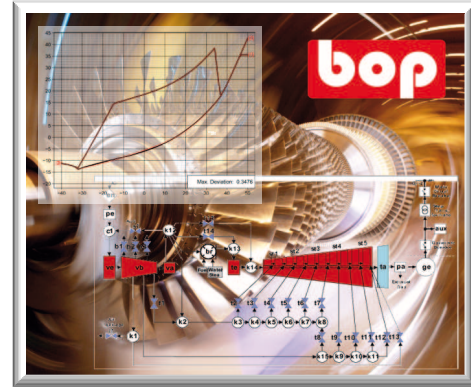


# BOP

## Simulation in Industrial Process Engineering

### Product

The Simulator **BOP** (**B**lock-**O**riented **P**rocess-Simulator) is a software package for steady state and transient simulation of large-scale problems from process engineering. The simulation concept of **BOP** is based on a hierarchical modular process modeling and enables an efficient solution even for high-dimensional problems.



### Key Features

- Simulation of highly nonlinear stationary processes
- Simulation of time dependent processes with discontinuities
- Efficient sensitivity analysis with integrated Monte-Carlo methods
- Computation of parameter dependent correction curves
- Stochastic and deterministic optimization
- Statistical analysis of sets of measured data

### Key Benefits

With the **BOP**-Compiler it is possible to transfer structural properties of the process directly from the process description used in industry into the generated equation system, so that they can be exploited for its efficient solution by the **BOP**-Solver. **BOP** is a powerful simulation tool that in a number of industrial applications has proven to be fast, robust and reliable. **BOP** enables a high potential of adaptivity and may be used as well in cases where conventional simulation packages have limitations.

### Fields of Application

**BOP** may be used for the simulation of all processes modeled by systems of differential-algebraic equations (DAEs). Until today, **BOP** has been successfully used in the following industrial applications:

- Chemical process simulation (Bayer AG)
- Catalytic exhaust gas reaction (Bosch GmbH)
- Gas turbine simulation (Alstom Power Ltd)

### Service

- Individual user consultation
- Common problem definition
- Custom-made adjustment and optimization
- Quick and reliable implementation

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