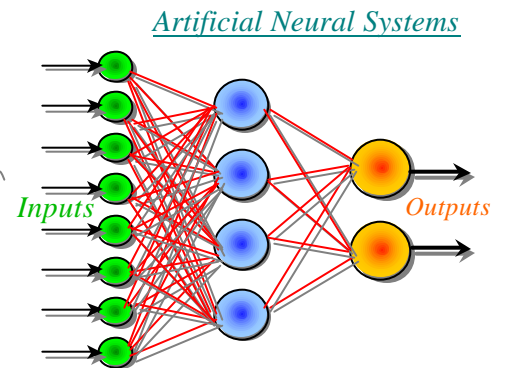
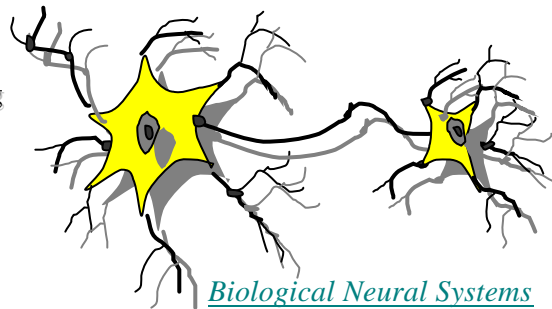


# OPTIMIZATION FOR ENERGY SYSTEM EFFICIENCY WITH ARTIFICIAL NEURAL NETWORK

A common feature in energy/power systems is its complex and uncertain data. It is difficult to know the dependence of one parameter on another, which is critical to optimize the efficiency of energy systems. Artificial neural network (ANN) is to simulate within specialized hardware or sophisticated software, the multiple layers of simple processing units (called neurons), which are fully or partially interconnected. It can be applied to various scientific and engineering domains and has been proven very useful in the analysis of complex and uncertain data.

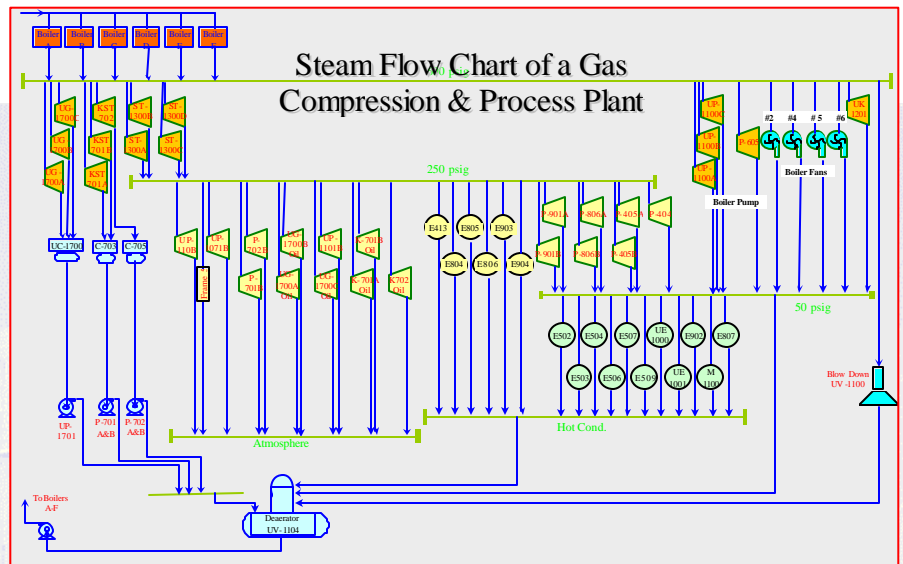
## Applications

- Power plant soot blowing
- Power plant combustion setting/control
- Chemical plant steam balance/control



## Benefits

- Improve thermal efficiency & reduce emissions by system optimization
- Improve plant safety/reliability by early warning or prediction of failures
- Reduce energy cost
- Provide effective process monitoring



## Advantages

- Low capital cost
- Quick results

## Procedures

- Conduct system analysis
- Collect and digitize data
- Construct neural network
- Train neural network
- Obtain predicted results
- Optimize the system

