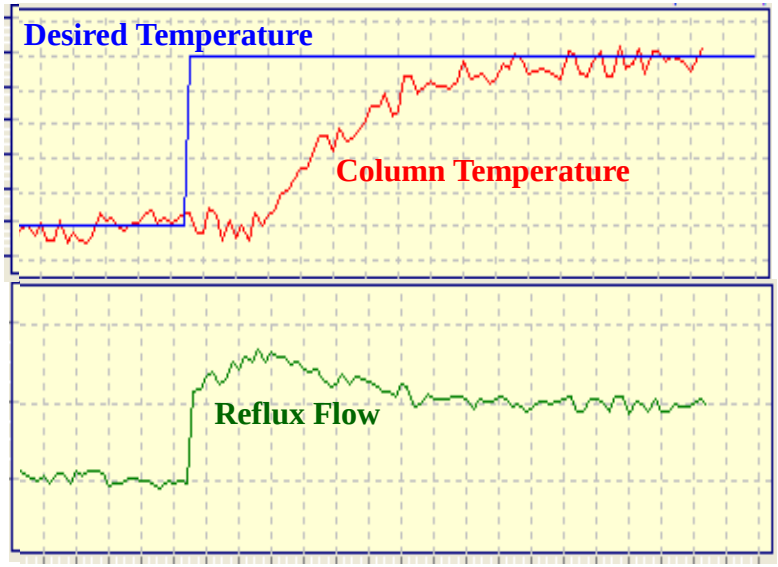
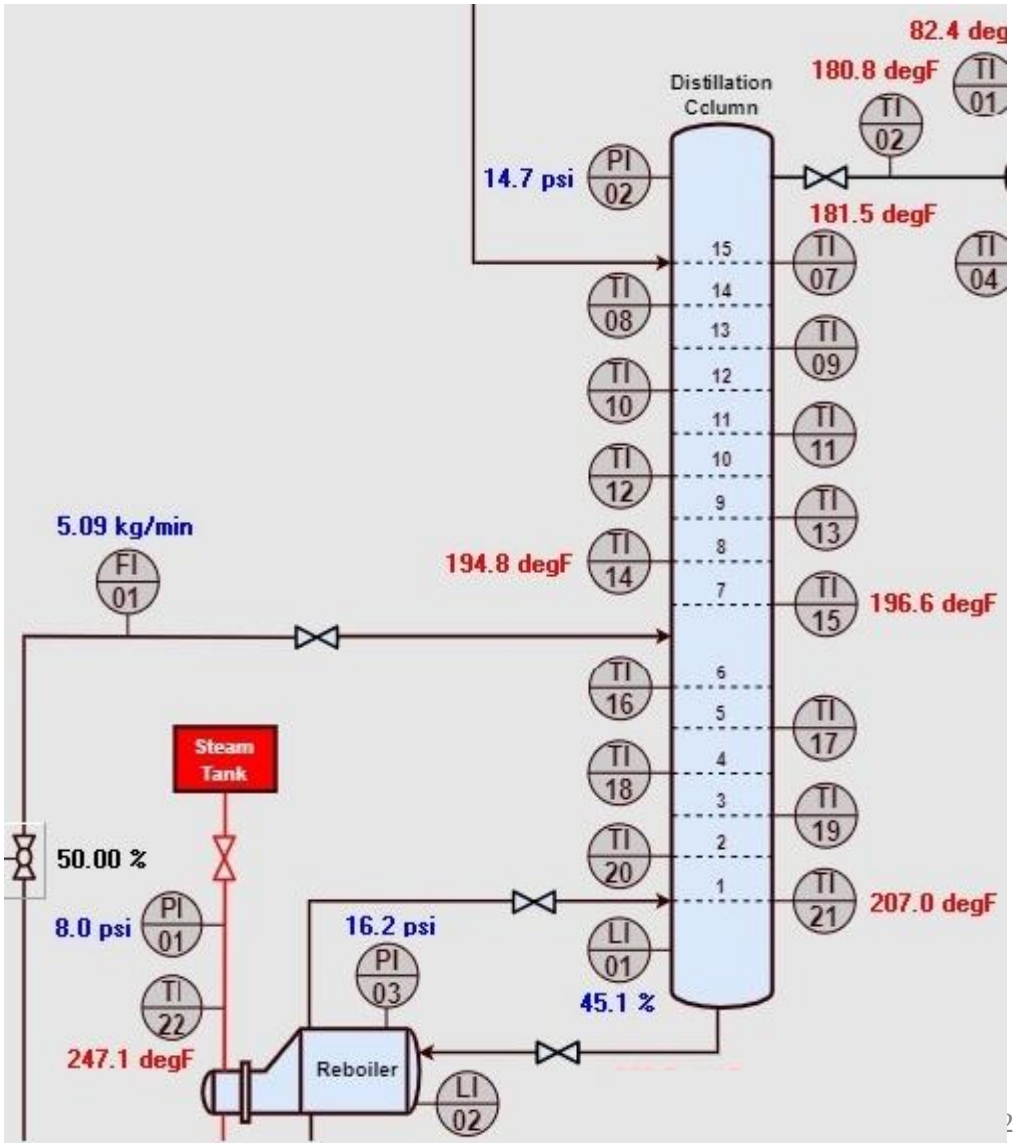
PiDISTILL Real-Time Distillation Column Simulator

PiControl Solutions

NEW FAST SIMULATOR TECHNOLOGY





PiDISTILL Distillation Column Simulator

- PiDISTILL is a Real-Time Distillation Column Training Simulator.
- It mimics distillation column behavior on a computer.
- It also matches process dynamics from a real plant precisely.
- Convert a computer into a Dynamic Distillation Column simulator in just minutes.
- PiDISTILL is simple, fast, compact; it can be installed in minutes!
- You can practice how to RUN a distillation column on the simulator on the computer.
- Test your chemical engineering skills using unique, novel online real-time distillation column simulator.
- Use PiDISTILL to train/educate students or new employees faster and better, like never before.

Excellent for Chemical Engineers and Technicians

- Excellent for chemical engineering universities and colleges.
- For educational institutions which teach and hold subjects and laboratories for:
  - Mass and heat transfer
  - Distillation and separation principles
  - Unit design
  - Process control
- Excellent for designing different and practical distillation column tests, home projects or laboratory examples.

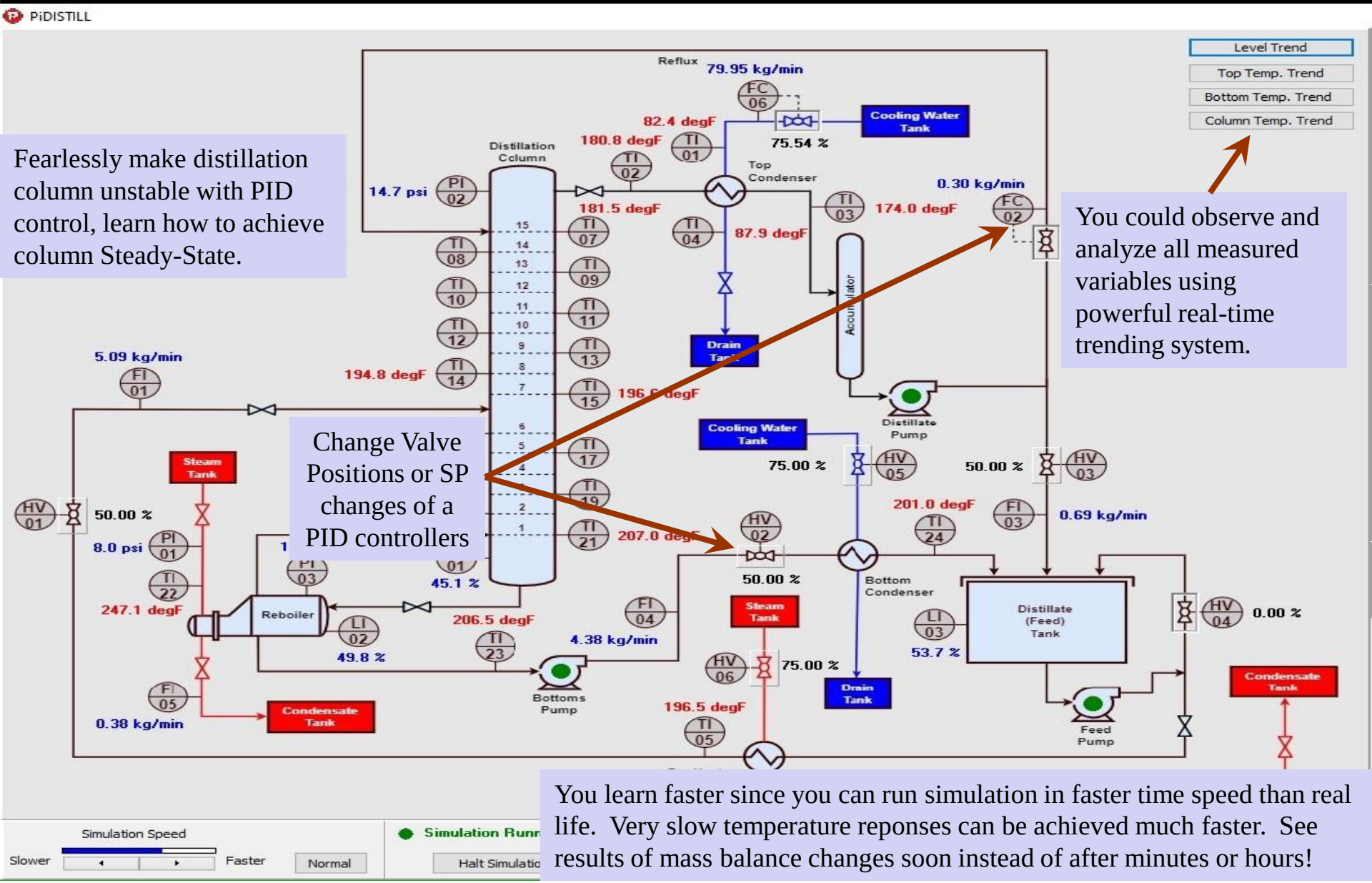
PiDISTILL Covers

1. Simulation of Steady or Unsteady Distillation Column States
2. Tuning PID Controllers in order to stabilize Distillation Column Performance
3. Custom Calculations and System Identification
4. Saving all Measurements/Changes in a Excel or on a Trend for further Analysis

PiDISTILL Capabilities

1. PiDISTILL consists of:
   - Distillation column separation process
   - Several heat-exchangers
   - Column reboiler
   - Storage tank
2. PIDISTILL allows to each student and/or professor to play (increase and/or decrease) with all distillation flows.
3. It allows to observe how changes will affect distillation temperature profile, distillation column and tank levels and top and bottom product purities.
4. Users can learn and understand how to run the distillation column in a steady state and non-steady state manner

PiDISTILL Real-Time Distillation Column Simulator



Fearlessly make distillation column unstable with PID control, learn how to achieve column Steady-State.

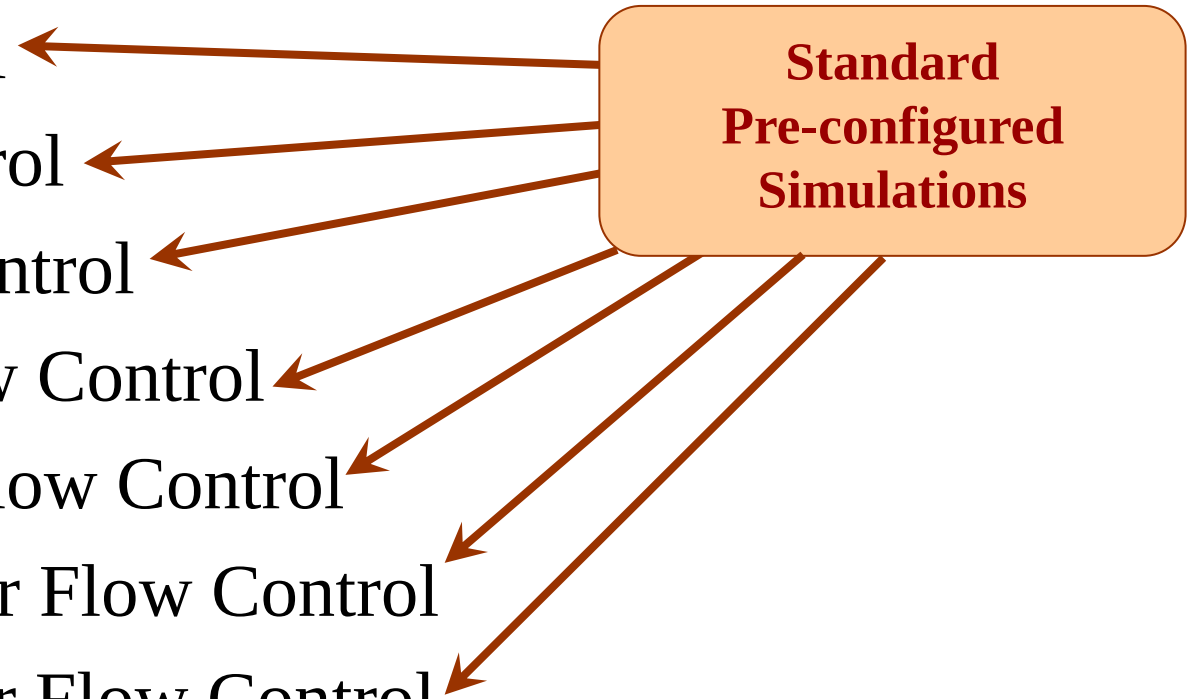
Change Valve Positions or SP changes of a PID controllers

You could observe and analyze all measured variables using powerful real-time trending system.

You learn faster since you can run simulation in faster time speed than real life. Very slow temperature reponses can be achieved much faster. See results of mass balance changes soon instead of after minutes or hours!

PiDistill covers all Common Changes

- Feed Flow Control
- Reflux Flow Control
- Distillate Flow Control
- Recycle Feed Flow Control
- Column Bottom Flow Control
- Cooling Exchanger Flow Control
- Heating Exchanger Flow Control

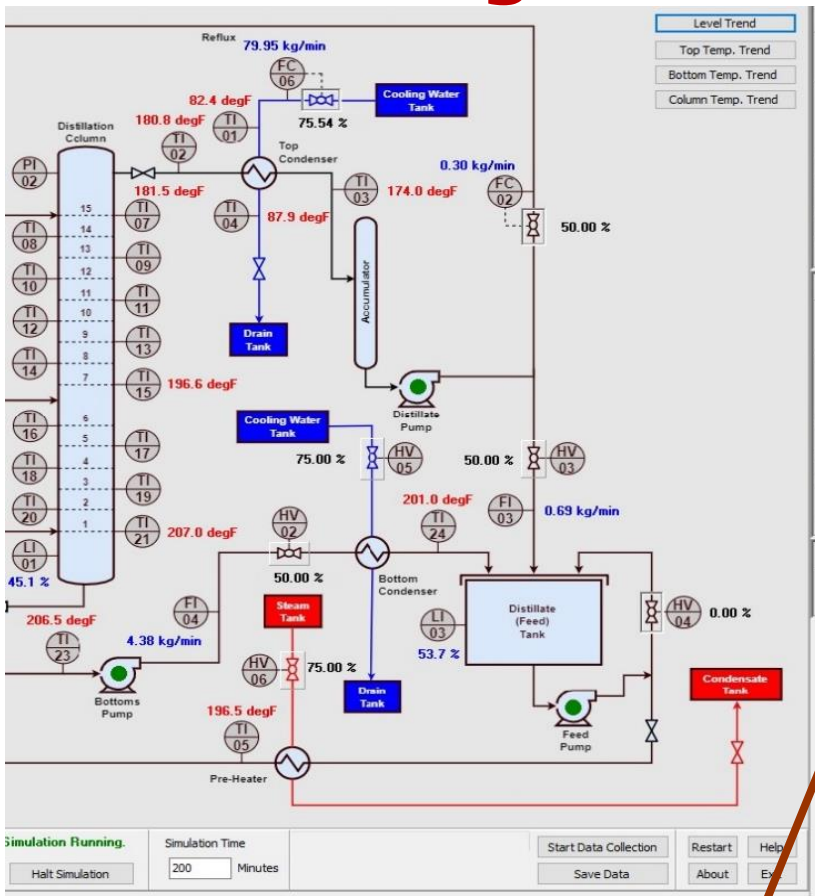


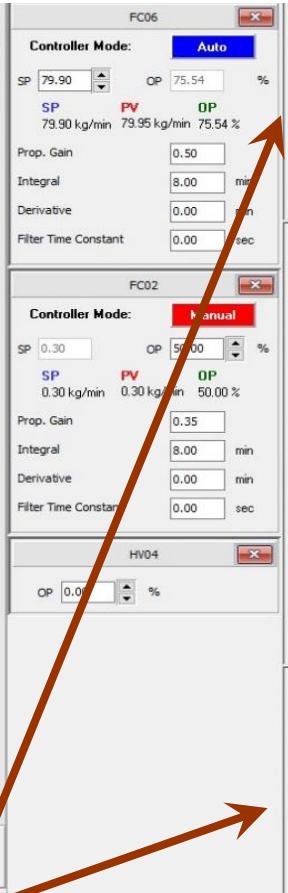
Trending and Data Saving Power

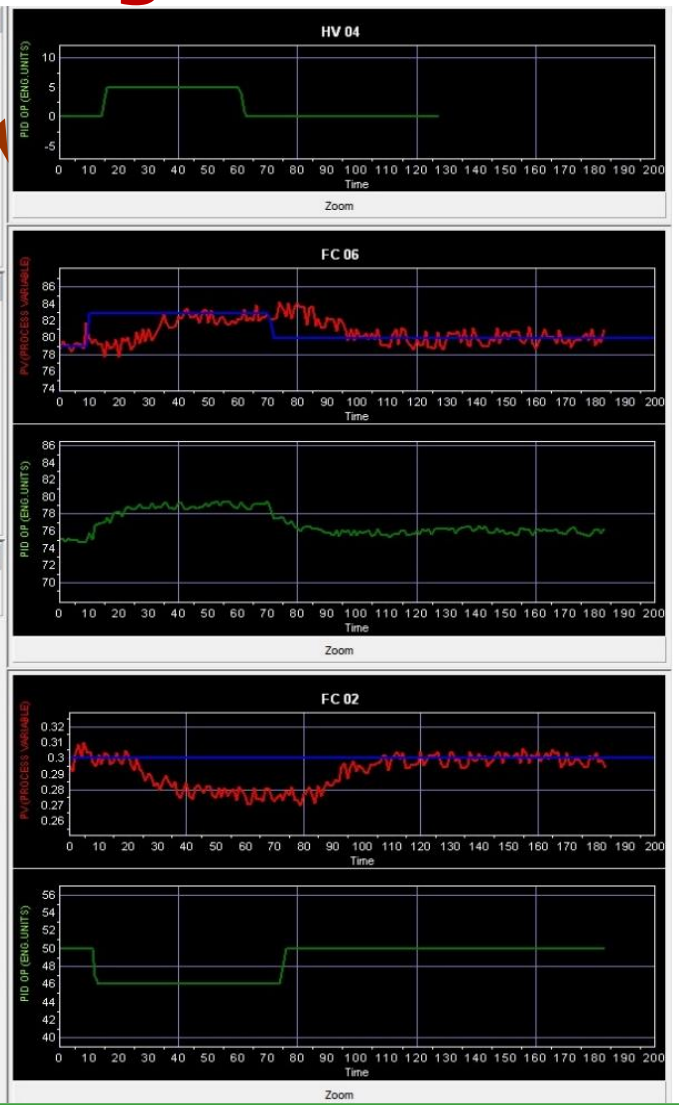
- Users can observe the trends of all measured variables:
  - - Feed, Reflux, Distillate, Bottom and Heating/Cooling Flow Rates
  - - Distillation Column and Reboiler Pressures
  - - Distillation Column, Storage Feed Tank and Reboiler Levels
  - - Distillation Column and other nearby Temperatures
  - - Control Valve Positions

- Save real-time data in the Excel file for further analysis and study.
- Calculate/Design Heat and Mass Balance, McCabe-Thiele diagram, Total, Minimum and Optimal Reflux Ratio.
- Do Empirical System Identification of static or dynamic models.

Trending and Data Saving Power



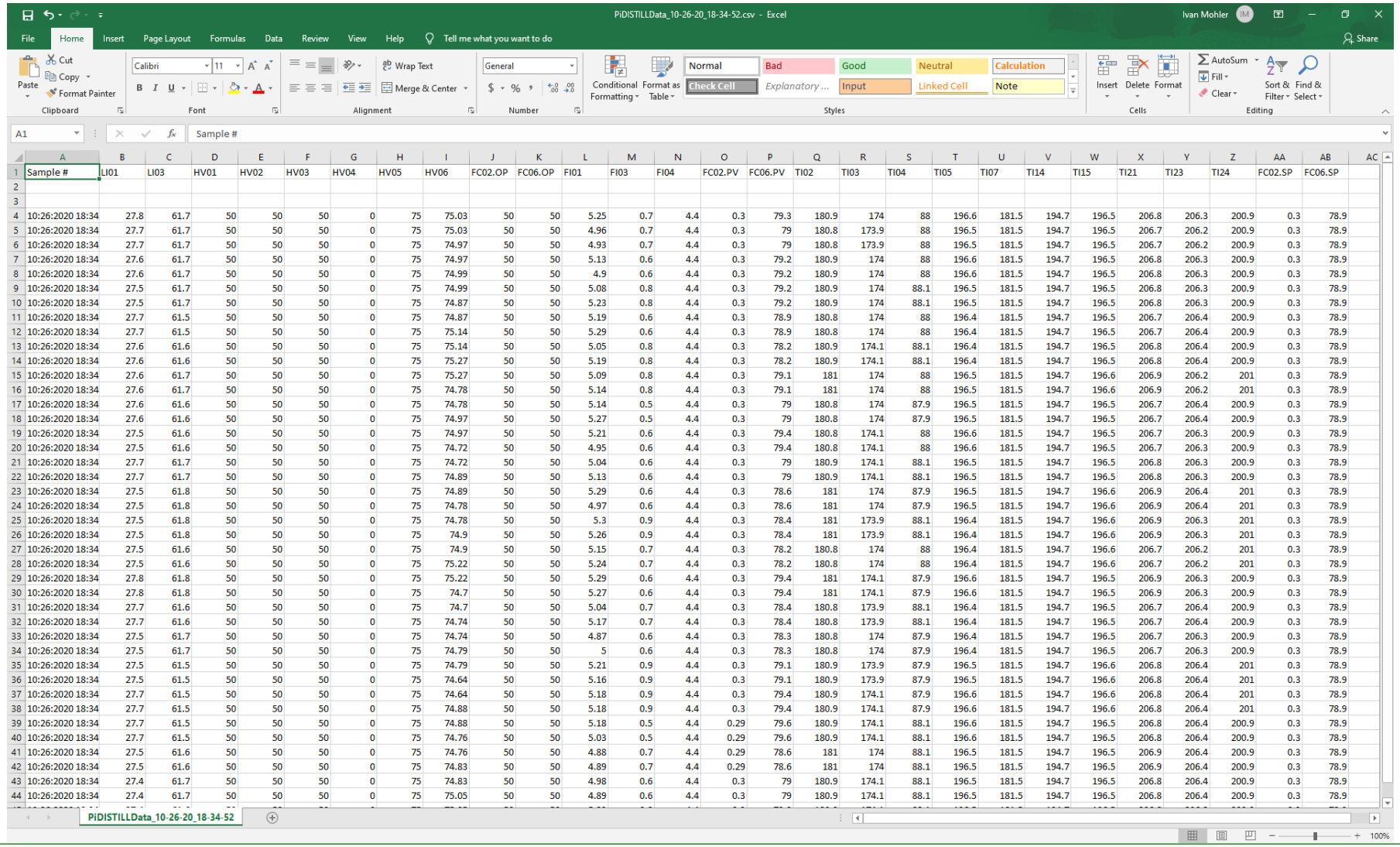




Trend all measured variables and flow changes in the fast/slow mode !

Trend all PID controllers, all in TIME DOMAIN!

Use Excel Data for Analysis & Calculation



PiDISTILLData_10-26-20_18-34-52.csv - Excel

Sample #	LI01	LI03	HV01	HV02	HV03	HV04	HV05	HV06	FC02.OP	FC06.OP	FI01	FI03	FI04	FC02.PV	FC06.PV	TI02	TI03	TI04	TI05	TI07	TI14	TI15	TI21	TI23	TI24	FC02.SP	FC06.SP
10:26:2020 18:34	27.8	61.7	50	50	50	0	75	75.03	50	50	5.25	0.7	4.4	0.3	79.3	180.9	174	88	196.6	181.5	194.7	196.5	206.8	206.3	200.9	0.3	78.9
10:26:2020 18:34	27.7	61.7	50	50	50	0	75	75.03	50	50	4.96	0.7	4.4	0.3	79	180.8	173.9	88	196.5	181.5	194.7	196.5	206.7	206.2	200.9	0.3	78.9
10:26:2020 18:34	27.7	61.7	50	50	50	0	75	74.97	50	50	4.93	0.7	4.4	0.3	79	180.8	173.9	88	196.5	181.5	194.7	196.5	206.7	206.2	200.9	0.3	78.9
10:26:2020 18:34	27.6	61.7	50	50	50	0	75	74.97	50	50	5.13	0.6	4.4	0.3	79.2	180.9	174	88	196.6	181.5	194.7	196.5	206.8	206.3	200.9	0.3	78.9
10:26:2020 18:34	27.6	61.7	50	50	50	0	75	74.99	50	50	4.9	0.6	4.4	0.3	79.2	180.9	174	88	196.6	181.5	194.7	196.5	206.8	206.3	200.9	0.3	78.9
10:26:2020 18:34	27.5	61.7	50	50	50	0	75	74.99	50	50	5.08	0.8	4.4	0.3	79.2	180.9	174	88.1	196.5	181.5	194.7	196.5	206.8	206.3	200.9	0.3	78.9
10:26:2020 18:34	27.5	61.7	50	50	50	0	75	74.87	50	50	5.23	0.8	4.4	0.3	79.2	180.9	174	88.1	196.5	181.5	194.7	196.5	206.8	206.3	200.9	0.3	78.9
10:26:2020 18:34	27.7	61.5	50	50	50	0	75	74.87	50	50	5.19	0.6	4.4	0.3	78.9	180.8	174	88	196.4	181.5	194.7	196.5	206.7	206.4	200.9	0.3	78.9
10:26:2020 18:34	27.7	61.5	50	50	50	0	75	75.14	50	50	5.29	0.6	4.4	0.3	78.9	180.8	174	88	196.4	181.5	194.7	196.5	206.7	206.4	200.9	0.3	78.9
10:26:2020 18:34	27.6	61.6	50	50	50	0	75	75.14	50	50	5.05	0.8	4.4	0.3	78.2	180.9	174.1	88.1	196.4	181.5	194.7	196.5	206.8	206.4	200.9	0.3	78.9
10:26:2020 18:34	27.6	61.6	50	50	50	0	75	75.27	50	50	5.19	0.8	4.4	0.3	78.2	180.9	174.1	88.1	196.4	181.5	194.7	196.5	206.8	206.4	200.9	0.3	78.9
10:26:2020 18:34	27.6	61.7	50	50	50	0	75	75.27	50	50	5.09	0.8	4.4	0.3	79.1	181	174	88	196.5	181.5	194.7	196.6	206.9	206.2	201	0.3	78.9
10:26:2020 18:34	27.6	61.7	50	50	50	0	75	74.78	50	50	5.14	0.8	4.4	0.3	79.1	181	174	88	196.5	181.5	194.7	196.6	206.9	206.2	201	0.3	78.9
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10:26:2020 18:34	27.6	61.6	50	50	50	0	75	74.97	50	50	5.27	0.5	4.4	0.3	79	180.8	174	87.9	196.5	181.5	194.7	196.5	206.7	206.4	200.9	0.3	78.9
10:26:2020 18:34	27.5	61.6	50	50	50	0	75	74.97	50	50	5.21	0.6	4.4	0.3	79.4	180.8	174.1	88	196.6	181.5	194.7	196.5	206.7	206.3	200.9	0.3	78.9
10:26:2020 18:34	27.5	61.6	50	50	50	0	75	74.72	50	50	4.95	0.6	4.4	0.3	79.4	180.8	174.1	88	196.6	181.5	194.7	196.5	206.7	206.3	200.9	0.3	78.9
10:26:2020 18:34	27.7	61.7	50	50	50	0	75	74.72	50	50	5.04	0.6	4.4	0.3	79	180.9	174.1	88.1	196.5	181.5	194.7	196.5	206.8	206.3	200.9	0.3	78.9
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10:26:2020 18:34	27.5	61.7	50	50	50	0	75	74.74	50	50	4.87	0.6	4.4	0.3	78.3	180.8	174	87.9	196.4	181.5	194.7	196.5	206.7	206.3	200.9	0.3	78.9
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10:26:2020 18:34	27.5	61.5	50	50	50	0	75	74.64	50	50	5.16	0.9	4.4	0.3	79.1	180.9	173.9	87.9	196.5	181.5	194.7	196.6	206.8	206.4	201	0.3	78.9
10:26:2020 18:34	27.7	61.5	50	50	50	0	75	74.64	50	50	5.18	0.9	4.4	0.3	79.4	180.9	174.1	87.9	196.6	181.5	194.7	196.6	206.8	206.4	201	0.3	78.9
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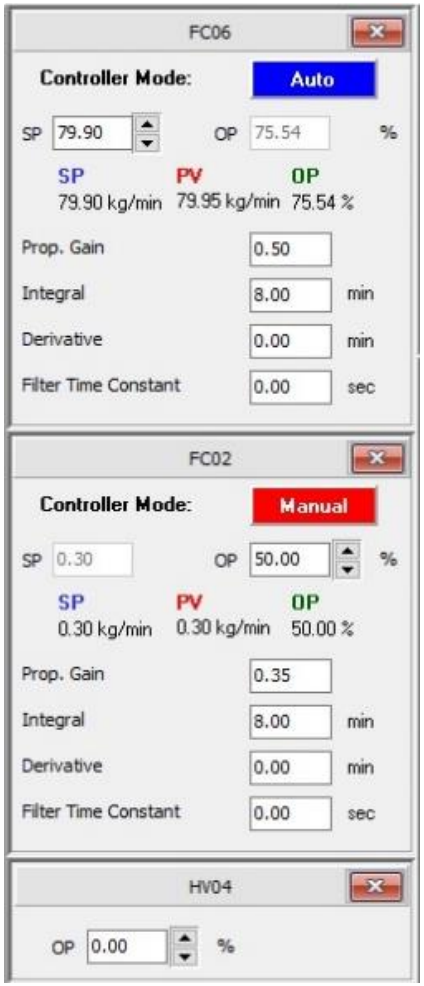
10:26:2020 18:34	27.5	61.6	50	50	50	0	75	74.83	50	50	4.89	0.7	4.4	0.29	78.6	181	174	88.1	196.5	181.5	194.7	196.5	206.9	206.4	200.9	0.3	78.9
10:26:2020 18:34	27.4	61.7	50	50	50	0	75	74.83	50	50	4.98	0.6	4.4	0.3	79	180.9	174.1	88.1	196.5	181.5	194.7	196.5	206.8	206.4	200.9	0.3	78.9
10:26:2020 18:34	27.4	61.7	50	50	50	0	75	75.05	50	50	4.89	0.6	4.4	0.3	79	180.9	174.1	88.1	196.5	181.5	194.7	196.5	206.8	206.4	200.9	0.3	78.9

RUN Distillation Column in Automatic Mode

- Users can put dedicated distillation column PID controllers in:
  - Auto mode and adjust desired trajectory (SP)
  - Manul mode and adjust directly valve position

- Users can Tune PID controllers in order to improve the overall performance of a distillation column.
- Users can make PID controllers completely unstable to see how process control and automation system performance can immediatelly improve/destabilize the distillation column.



PiDISTILL Simulator

- PiDISTILL is essential Training and Education Simulator for any chemical engineering university or college.
- PiDISTILL is the only simulation tool which easily combines distillation behavior and performance of it automation systems.
- PiDISTILL is simple, fast, compact; it can be installed in minutes!
- In just a short time learn how to RUN a distillation column.
- Test your chemical engineering skills using PiDISTILL - unique, novel online real-time distillation column simulator.
- Use PiDISTILL to train/educate students or new employees faster and better, like never before.

- **Install and try a 14-day FREE, full-function PiDISTILL and see for your self!**
- **More Capabilities, More Unique Features, More Power**

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