WHAT IS CLAIMED IS:

1. A customizable dispense system, comprising:

a smart controller configured to operate a plurality of pumps in semiconductor manufacturing processes that are sensitive to defects in printed patterns, the plurality of pumps including at least one pneumatic pump and at least one motor pump; and

a plurality of lines connecting the smart controller with a track and a variety of devices, including pump heads for the at least one pneumatic pump and the at least one motor pump, wherein the smart controller is configured to, upon switching one of the plurality of lines from communicating with a first pump to communicating with a second pump, automatically recognize the second pump and automatically apply a control scheme corresponding to the second pump.

2. A customizable dispense system according to Claim 1, wherein the first pump is a pneumatic pump and the second pump is a motor pump.

3. A customizable dispense system according to Claim 1, wherein both the first pump and the second pump are motor pumps.

4. A customizable dispense system according to Claim 1, wherein both the first pump and the second pump are pneumatic pumps.

5. A customizable dispense system according to Claim 1, wherein the smart controller is further configured to, upon interfacing with a newly connected pump, automatically recognize the newly connected pump and apply a control scheme corresponding to the newly connected pump, wherein the newly connected pump is a motor pump or a pneumatic pump.

6. A customizable dispense system according to Claim 1, wherein the smart controller comprises an onboard database storing information associated with the plurality of pumps.

7. A customizable dispense system according to Claim 1, wherein the variety of devices includes filters with radio-frequency identification tags.

8. A customizable dispense system according to Claim 1, wherein the plurality of pumps comprises one or more integrated pumps, wherein each of the one or more integrated pumps comprises two or more pneumatic pumps physically combined as a unit, wherein the two or more pneumatic pumps in the unit operate independent of one another, and wherein the two or more pneumatic pumps in the unit are independently controlled by the smart controller.

9. A customizable dispense system according to Claim 8, wherein the one or more integrated pumps function as feed pumps.

10. A customizable dispense system according to Claim 8, wherein the one or more integrated pumps function as dispense pumps.

11. A customizable dispense system according to Claim 1, wherein the switching is due to physical disconnection of the first pump and physical connection of the second pump.

12. A customizable dispense system according to Claim 1, wherein the switching is due to an instruction received at the smart controller.

13. A customizable dispense system, comprising:

a set of feed pumps for directing chemicals used in semiconductor manufacturing processes;

a set of dispense pumps for dispensing the chemicals; and

a smart controller configured to operate the set of feed pumps and the set of dispense pumps, wherein the set of feed pumps and the set of dispense pumps comprise one or more integrated pumps, each of the one or more integrated pumps comprising two or more pneumatic pumps physically combined as a unit, wherein the two or more pneumatic pumps in the unit operate independent of one another, and wherein the two or more pneumatic pumps in the unit are independently controlled by the smart controller;

wherein the smart controller is further configured to, upon switching from communicating with a first pump to communicating with a second pump, automatically recognize the second pump and automatically apply a control scheme corresponding to the second pump.

~~14. A customizable dispense system according to Claim 13, wherein the smart controller is configured to, upon switching from communicating with a first pump to a second pump, automatically recognize the second pump and apply a control scheme corresponding to the second pump.~~

~~15~~14. A customizable dispense system according to Claim ~~14~~13, wherein the first pump is a pneumatic pump and the second pump is a motor pump.

~~16~~15. A customizable dispense system according to Claim ~~14~~13, wherein both the first pump and the second pump are motor pumps.

~~17~~16. A customizable dispense system according to Claim ~~14~~13, wherein both the first pump and the second pump are pneumatic pumps.

~~18~~17. A customizable dispense system according to Claim 13, wherein the smart controller is further configured to, upon interfacing with a newly connected pump, automatically recognize the newly connected pump and apply a control scheme corresponding to the newly connected pump, wherein the newly connected pump is a motor pump or a pneumatic pump.

~~19~~18. A customizable dispense system, comprising:

a set of feed pumps for directing chemicals used in semiconductor manufacturing processes;

a set of dispense pumps for dispensing the chemicals;

a smart controller configured to operate the set of feed pumps and the set of dispense pumps, wherein the set of feed pumps and the set of dispense pumps comprise one or more integrated pumps, each of the one or more integrated pumps comprising two or more pneumatic pumps physically combined as a unit, wherein the two or more pneumatic pumps in the unit operate independent of one another, wherein the two or more pneumatic pumps in the unit are independently controlled by the smart controller, and wherein the smart controller is further configured to, upon interfacing with a newly connected pump, automatically recognize the newly connected pump and automatically apply a control scheme corresponding to the newly connected pump, wherein the newly connected pump is a motor pump or a pneumatic pump.

~~20~~19. A customizable dispense system according to Claim ~~19~~18, wherein the smart controller is further configured to, upon switching from communicating with a first pump to a second pump, automatically recognize the second pump and apply a control scheme corresponding to the second pump.

~~2120~~. A customizable dispense system according to Claim ~~2019~~, wherein the first pump is a pneumatic pump and the second pump is a motor pump.

~~2221~~. A customizable dispense system according to Claim ~~2019~~, wherein both the first pump and the second pump are motor pumps.

~~2322~~. A customizable dispense system according to Claim ~~2019~~, wherein both the first pump and the second pump are pneumatic pumps.

~~2423~~. A customizable dispense system according to Claim ~~2019~~, wherein the switching is due to physical disconnection of the first pump and physical connection of the second pump.

~~2524~~. A customizable dispense system according to Claim ~~2019~~, wherein the switching is due to an instruction received at the smart controller.

~~2625~~. A filtration method, comprising:

at a controller of a dispense system having a feed pump and a dispense pump, determining~~, by the controller,~~ an upstream pressure for fluid upstream from a filter positioned between the feed pump and the dispense pump;

setting a feed stage fluid pressure to the upstream pressure;

setting a dispense stage fluid pressure to a filtration pressure setpoint;

opening valves to allow the fluid flowing from a feed side to a dispense side through the filter, wherein the feed stage fluid pressure and the dispense stage fluid pressure cause a differential pressure across the filter, thereby moving the fluid from the feed side to the dispense side through the filter at a target rate; and

determining an end of filtration based on a change in fluid pressure at the dispense side.