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Horizontal Pretreatment Reactor System

Versatile pretreatment system for a wide range of pretreatment chemistries

Photo by Dennis Schroeder, NREL/PIX 17684

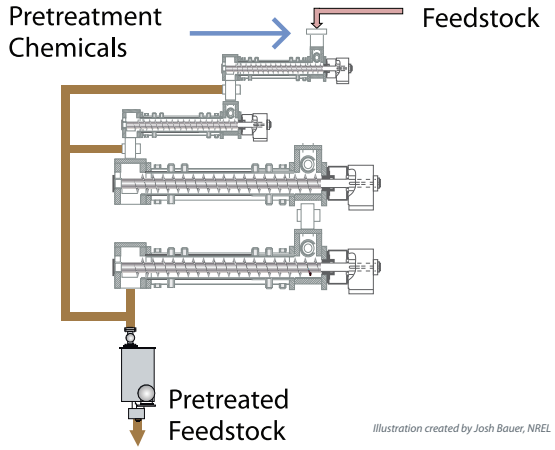

Illustration created by Josh Bauer, NREL

- Different pretreatment chemistry/residence time combinations are possible using these multiple horizontal-tube reactors
- Each tube is indirectly and directly steam heated to temperatures of 150^0 C to 210^0 C
- Residence time is varied by changing the speed of the auger that moves the biomass through each tube reactor

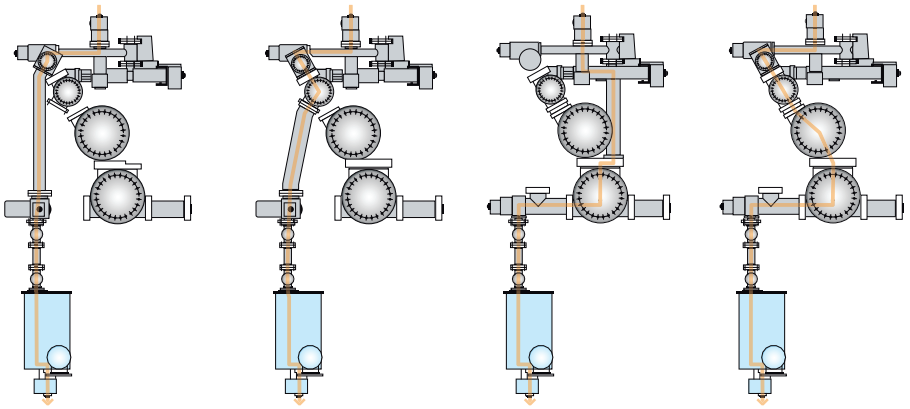

Illustration created by Josh Bauer, NREL

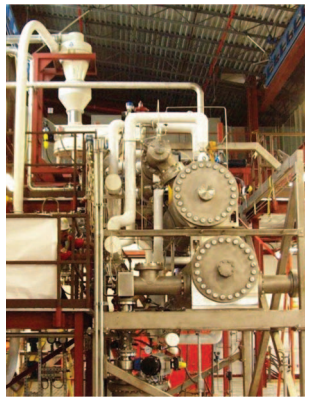

Photo by Sara Havig, NREL/PIX 18296

- Tubes are used individually or in combination to achieve different pretreatment residence times
- Smaller tubes made from Hastelloy, an acid-resistant material, are used with more corrosive chemicals and residence times from 3 to 20 minutes
- Larger tubes made from 316 stainless steel are used for residence times from 20 to 120 minutes

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