NREL
NATIONAL RENEWABLE ENERGY LABORATORY

High Solids Enzymatic Hydrolysis Reactors

New capability to produce more highly concentrated sugars streams

Photo by Dennis Schroeder, NREL/PIX 17680

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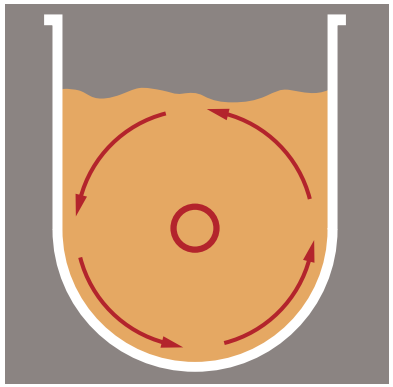
- Designed for operation at total solids loadings greater than 20% (w/w)
- Reactors are operated in a batch mode with a 36-hour turnaround time
- Two reactors are staged to accept a continuous stream of pretreated biomass to achieve semi-continuous processing

Photo by NREL/PIX 18205



- Vigorous mixing by alternating paddles maintains temperatures at 40^0 - 80^0C
- After 24-30 hours, the pretreated biomass slurry is sufficiently liquefied and pumped to a vertical stirred tank reactor to complete enzymatic hydrolysis (if necessary)

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