

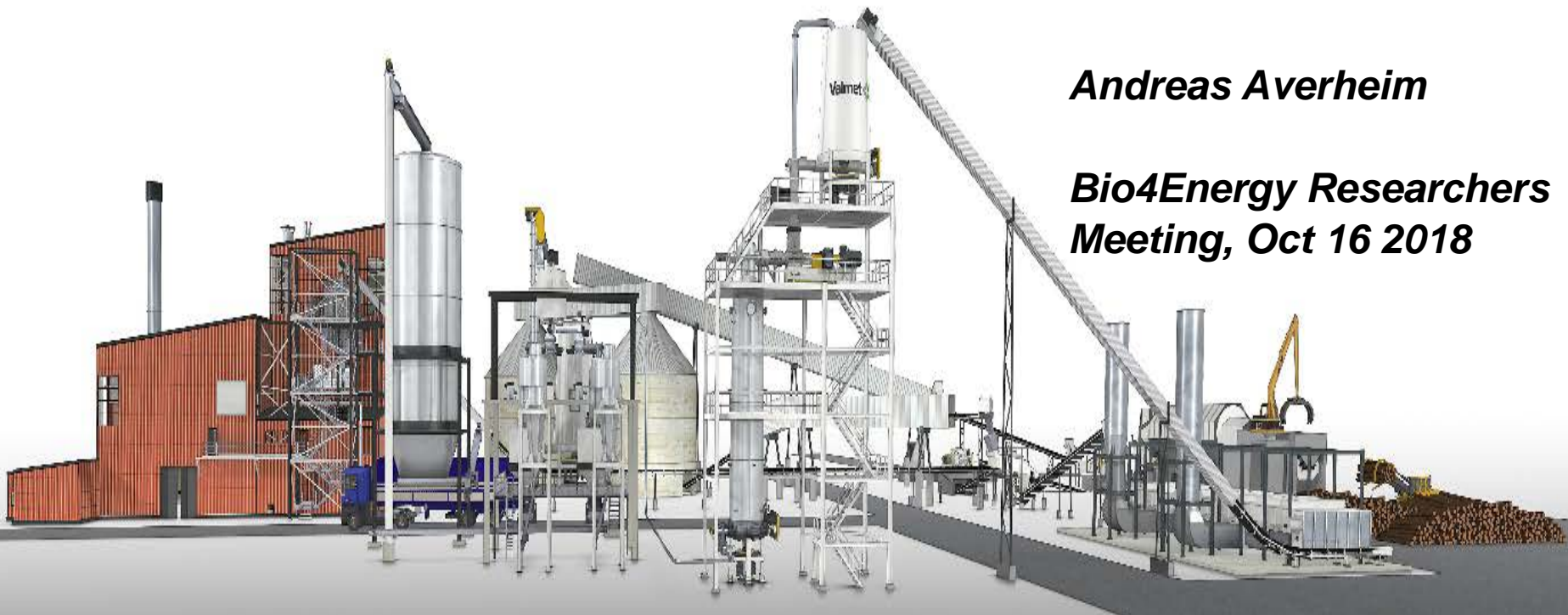
Manufacturing of Process-ready Bio-based Assortments through Novel Development of Steam Explosion Process



Sveriges lantbruksuniversitet
Swedish University of Agricultural Sciences



TREESEARCH

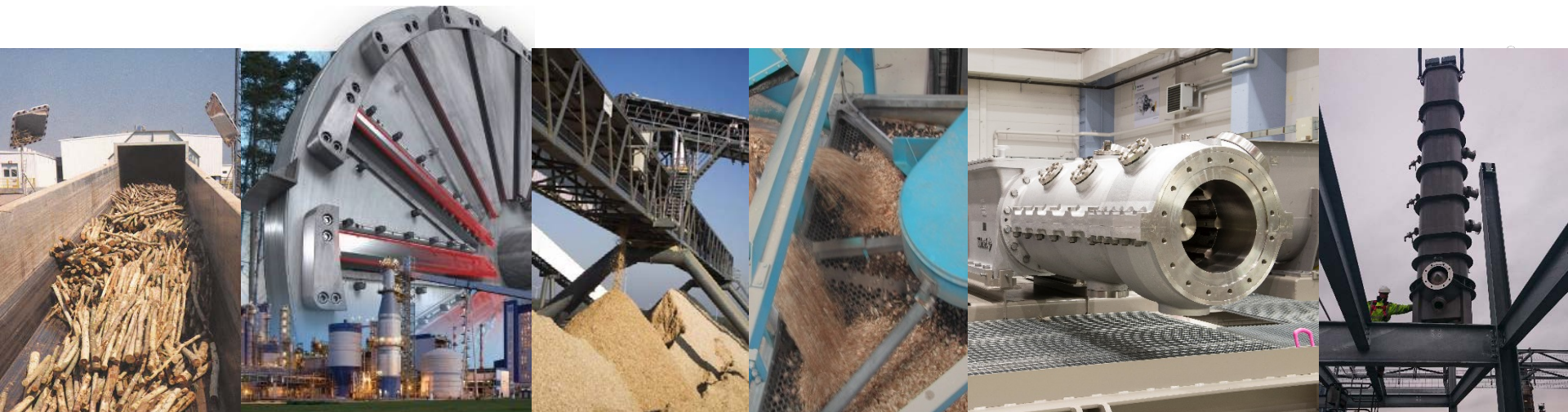


Andreas Averheim

Bio4Energy Researchers Meeting, Oct 16 2018

Agenda

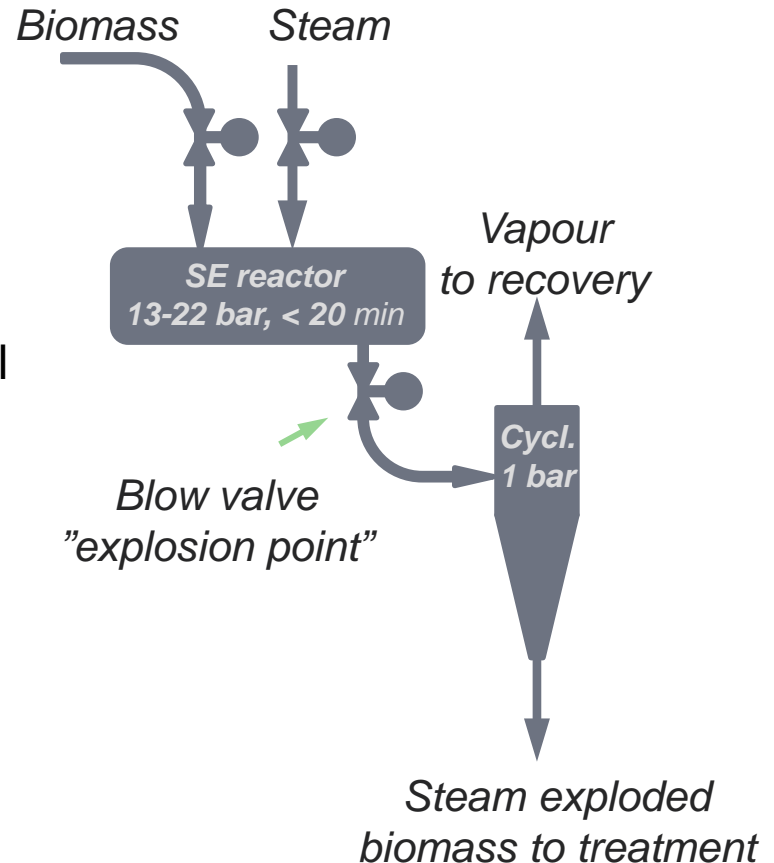
- **Steam Explosion**
- **“Manufacturing of Process-ready Bio-based Assortments through Novel Development of Steam Explosion Process”**
- **Discussion**



What is steam explosion?

A thermal treatment process followed by mechanical defibration

- Old well known "Masonite" process
- Continuous operation advantage
- Steam heating of a ligno-cellulosic material followed by rapid depressurization
- Hemicelluloses decompose and lignin is softened
- Excellent material for pelleting



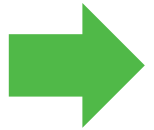
Steam exploded black pellets

New opportunity for supply of sustainable fuel for heat and power generation

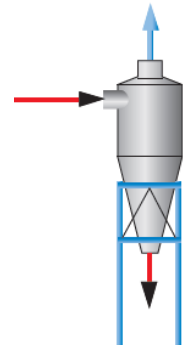
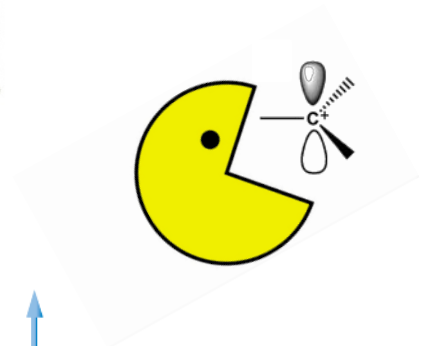


- They can be produced from all ligno-cellulosic materials
- Adaptations of well established technology
- Bark and wood residues are interesting raw materials
- The pellets are durable and more moisture resistant than white pellets
- Steam explosion treatment lowers CAPEX and OPEX in pellet logistics

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- Steam explosion
- Carbocation scavengers
- Cyclone separation
- Pelleting



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