TAKACHAR

Small-scale, decentralized biomass upgrading

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More than $120 billion/year of biomass is burned

NBC News

Current paradox

Biomass serves as the feedstock to many important industries

Forestry residues

Biomass

Agricultural residues

Renewable energy

Activated chemicals

Biofuels

Fertilizer

Plastic additives

Logistical challenge

Biomass is loose, wet, bulky, and expensive to transport.

Our solution

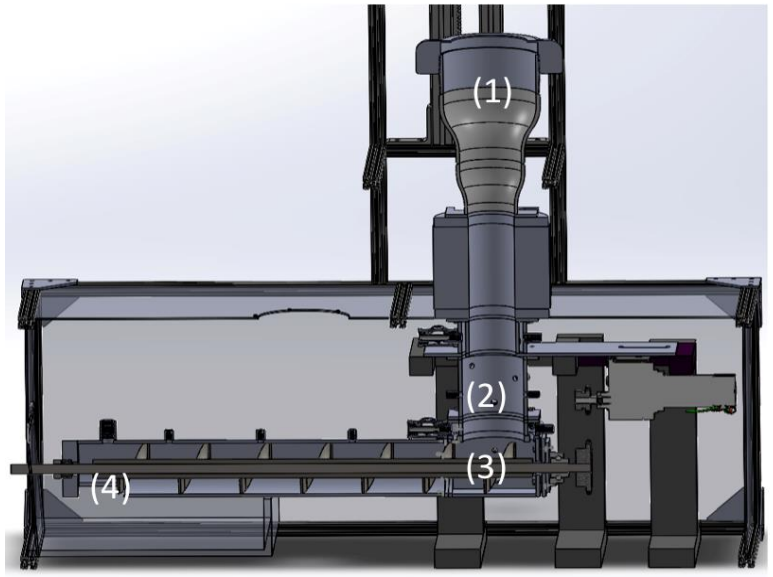
TATA CENTER
Technology + Design

Low-cost, small-scale, portable systems to convert biomass at source

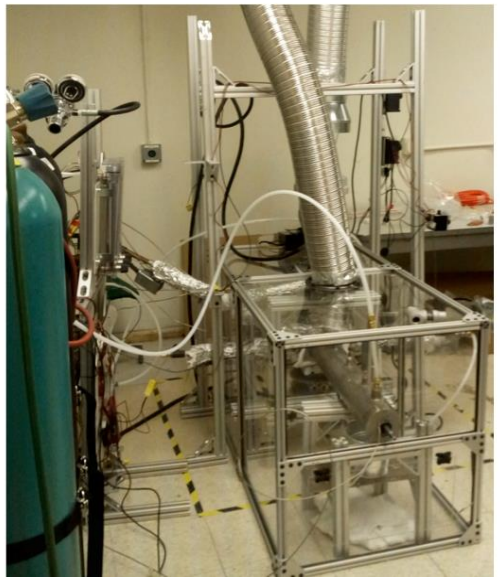
- Latched onto tractors, trailers, or shipping containers
- Requires no external heat/fuel (autothermal)
- Developed at MIT (PhD thesis)
- 2 pending patents

Raw Biomass	Densified Biomass
Loose and bulky	Volume reduction by 600%
Costly to transport	Reduces transport cost by 40%

(a) Cross-section rendering in SolidWorks



(b) Actual test reactor



Competitive advantage

Our design simplifies the reactor design and makes it flexible

Requirements	Competitors	Takachar system
Gas reactant	Heated special gases	Room temperature air
Gas handling	Scrubbing, drying	None
Minimum feasible scale	100+ tons/day	5 tons/day
Minimum viable cost	$1,500,000	$10,000
Biomass input flexibility	Specific	Diverse
Output characteristics	Specific	Process-controlled

Building the bioeconomy

We serve biomass generators and consumers worldwide

Forestry residues

Agricultural residues

Renewable energy

$2 trillion/year, 2% growth

Fertilizer

$3 billion/year (U.S.)

Mitigation of 500 million tons of CO_2 equivalent

Biofuels

Other chemicals

$168 billion/year, 5% growth

Supporters

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Technology + Design

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