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Chemical Processing Solutions

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Recent Biomass-Fed Chemical Process Projects: A Review

- **GOAL: Quantify distributions of biotechnology projects 2013 – 2015**
- **BASIS:**

- **Chemical Engineering Progress, Chemical & Engineering News**
- **10/1/13 to 6/30/15**
- **Lab, PP, commercial**
- **243 references, all scales -→ spreadsheet, charts**

- **FACTORS RECORDED/ANALYZED:**

- Feed, product, company/school, capacity, location, investment, technology innovation

Observations and Conclusions

- **Sustained worldwide activity**
- **U.S. dominant. 59% of all projects, raw biomass-fed and biomass-derived feedstock**
- **19 named biomass feedstocks (“biocellulose”, wood, corn stover, sugar cane …)**
- **28 named products (ethanol, “biochemicals”, other alcohols, jet fuel, “biofuel”, dicarboxylic acids …)**
- **Corn kernel ethanol --> Lignocellulose/others to diverse products**

Future Work

- **Evergreen CEP/CEN spreadsheet, periodic reviews. Next: 12/15**
- **Tracking:**
  - **Renmatix (intense, thermal)**
  - **UC Riverside (THF, 10% standard enzyme concentration)**
  - **U Tokyo (selective H_2 reduction of lignin products)**
  - **Lignin processing**
- **Cheap biomass + large scale + efficient technology + early economics**
- **Poster: charted details, including recent new technology**
- **www.chemprosol.com, bcooker@chemprosol.com: spreadsheet, review paper**