

1. Developing technology for integrated bio-refineries (biomass to liquid fuels, mainly diesel and/or jet fuel and also power)
2. Techno-economic analysis to select best technologies available for syngas cleaning (catalyst poisoning) and conditioning (to get desired levels of carbon monoxide, hydrogen, carbon dioxide and other components).
3. Modeling for bio-mass gasifiers including hydrodynamics, reactions, heat and mass transfer, etc. for all components of a gasification unit/gasifier.
4. Testing gasification of bio-mass in existing bio-mass gasifier units at bench or pilot scale to evaluate gasification efficiency and determine gasifier output stream composition (tars content and type, main and trace gases, etc.)
5. Algae to fuels research.
6. Research on algae harvesting.
7. Research on extraction of lipids from wet algae slurries.
8. Separation of algae protein and carbohydrate fractions.
9. Technology for H₂ production from biomass.
10. Solid state fermentation (differences in surface vs. planktonic growth).
11. Enhanced utilization of lignin.
12. Investigation of novel "nanocatalysts" for upgrading pyrolysis oil.
13. Efficacy of biological treatment for the reduction of methane emissions during the hydrolysis phase of biogas production.
14. Methods for the acceleration of cellulolysis of green wastes during the hydrolysis phase of biogas generation.

Note: Research topics above are suggestions from biofuel and biorefining industry members. Proposals involving pertinent biofuels and biorefining research areas outside the above topics are welcome and encouraged. All proposals received by the 8/10/10 deadline be reviewed by C2B2 Sponsors and the Center Executive Board of Directors.