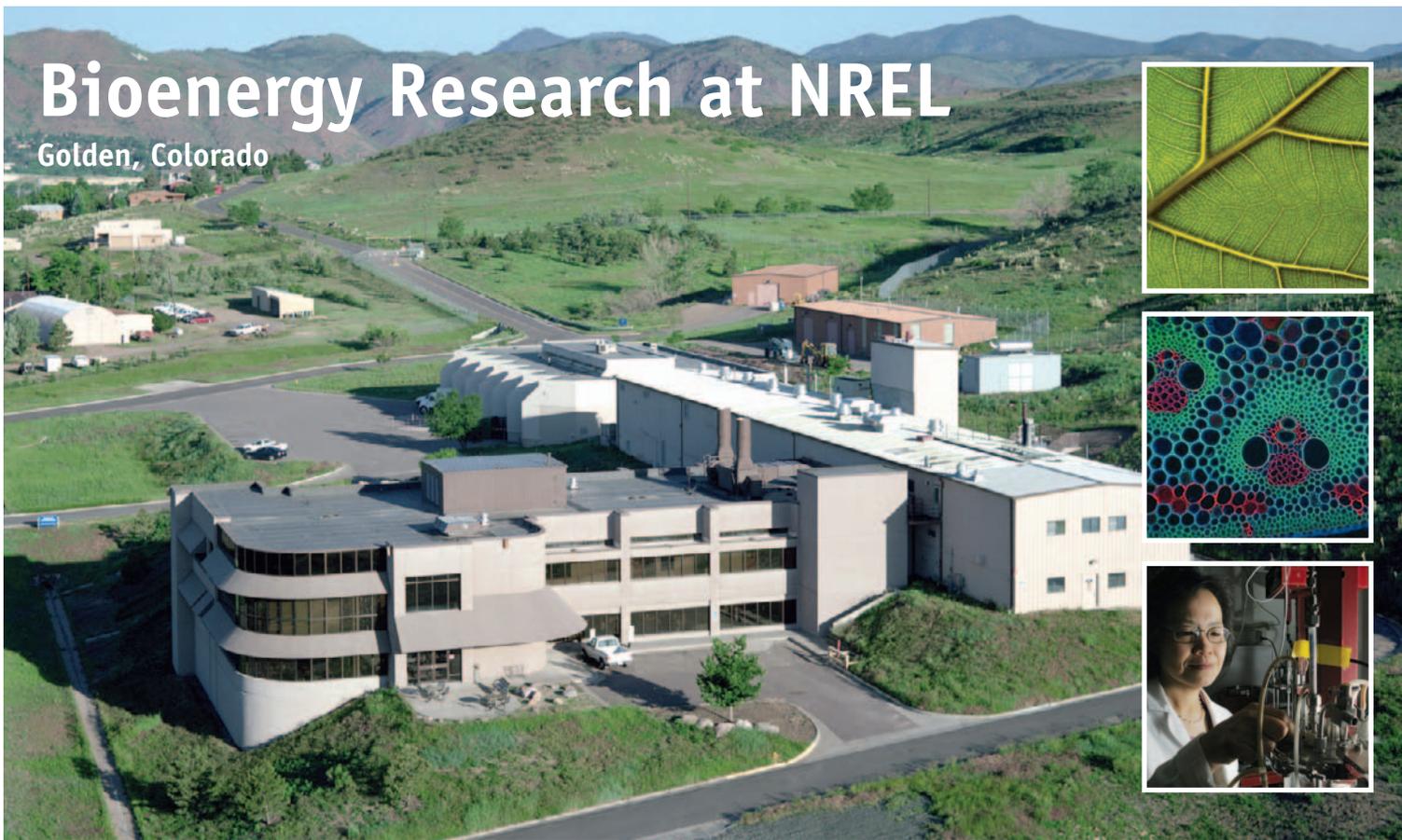


Bioenergy Research at NREL

Golden, Colorado



NREL's National Bioenergy Center is the leading national resource for biomass conversion and biofuels research and development. Our long-term vision for biofuels integrates several conversion technologies resulting in a biomass-based refinery or "biorefinery" capability.

NREL is currently conducting cutting edge research on biochemical pathways (primarily enzymatic hydrolysis and fermentation) and thermochemical pathways (gasification, pyrolysis and synthesis) of lignocellulosic biomass. We also work on converting algal biomass to low-cost fuels.

Research Capabilities

- Compositional analysis of biomass and process intermediates
- Enzyme testing and development
- Fermentation and microbial strain development and testing
- Pretreatment, saccharification, and fermentation of lignocellulosic biomass
- Real-time analysis of synthesis gas and/or pyrolysis liquid formation
- Catalysis for syngas clean-up conditioning and fuel synthesis
- Process improvements for stabilizing and conditioning pyrolysis liquids
- Technoeconomic analysis of integrated biomass conversion systems
- Life cycle assessment of both biochemical and thermochemical integrated systems

Test Facilities

- Complete analytic labs for biomass feedstocks and process intermediates
- Bench-scale and mini-pilot pretreatment, saccharification, and fermentation labs
- One ton/day biochemical pilot plant
- Biomass surface characterization electron microscope laboratory
- Bench-scale biomass synthesis gas catalysis facility
- Molecular beam mass spectrometer gas stream analysis
- Bench-scale pyrolysis liquid analysis and upgrading laboratory
- One-half ton/day thermochemical pilot plant

Partner with us.

www.nrel.gov/biomass

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NREL
National Renewable Energy Laboratory

Innovation for Our Energy Future

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