



## Renewable energy conversion technologies

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The Bioenergy Technologies Office's (BETO's) Conversion Technologies program supports research and development in technologies for converting biomass feedstocks into finished liquid transportation fuels--such as renewable gasoline, diesel, and jet fuel--co-products or chemical intermediates, and biopower. To achieve this goal, BETO is exploring a variety of conversion technologies that can be combined into pathways, from feedstock to product.

While, historically, conversion technology pathways have been roughly classified as either biochemical or thermochemical processes, BETO has moved away from classifying pathways strictly as one or the other. In order to encompass the diversity and potential of innovative technologies, BETO has shifted its focus by considering instead a broad landscape of potential processes that may contain both biochemical and thermochemical steps.

Within the Conversion Technologies program, BETO focuses on activities in the areas of Deconstruction & Fractionation and Synthesis & Upgrading.

Deconstruction and fractionation activities involve deconstructing biomass into its component chemicals so it can be converted into biofuels.

After deconstruction of biomass, intermediates are synthesized and upgraded using various techniques to produce a finished product, including fuels and bioproducts.

On July 20, 2016, BETO released a request for information (RFI) entitled "Cellulosic Sugar and Lignin Production Capabilities." The purpose of this RFI was to develop a list of suppliers who are willing and able to produce and sell cellulosic sugar and/or lignin for use by the research community. BETO-funding recipients, as well as the general research community, can use this information to determine resources that are available. To see the full list of RFI responses available, visit the Cellulosic Sugar and Lignin Production Capabilities RFI Responses web page.

Energy conversion techniques are key in power electronics and even more so in renewable energy source systems, which require a large number of converters. Renewable Energy Systems: Advanced Conversion



Technologies and Applications describes advanced conversion technologies and provides design examples of converters and inverters for renewable energy systems--including wind turbine and solar panel energy systems.

Learn Cutting-Edge Techniques for Converters and Inverters

Setting the scene, the book begins with a review of the basics of astronomy and Earth physics. It then systematically introduces more than 200 topologies of advanced converters originally developed by the authors, including 150 updated circuits on modern conversion technologies. It also discusses recently published topologies and thoroughly analyzes new converter circuits. Novel approaches include split-capacitor and split-inductor techniques that can be applied in super-lift and other converters.

Resolve Historic Problems in Conversion Technologies

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