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Towards integrated biorefinery based on dried distillers grains co-product strategy to enable production of biofuels and biochemicals

Integrated bio-refinery concepts are developed with the ultimate goal of reducing the cost of biofuels. This integrated concept allows for logistic success through an efficient co-product utilization strategy that creates multiple product streams from one source. In a C5 sugar based integrated biorefinery; our earlier work showed that the residual fibers after hydrolysis of agricultural biomass can be used for feed application. In this paper, we will discuss the production of high specific surface area containing activated carbon fibers (ACF) as another value added co-product made from the residual fibers. Such ACF can be produced at low cost and are sustainable and renewable. Preliminary testing showed that the ACF produced from residual fiber yielded high surface area with minimal treatment and delivered high performance in energy storage applications such as supercapacitors and Li-S batteries comparable to commercially available ACF.

Biography

Jagannadh Satyavolu works as Theme Leader, Biomass conversion and Biofuels at the Conn Center for Renewable Energy Research, University of Louisville, Louisville. He has earned his PhD in Chemical Engineering from the Ohio State University, Columbus, OH and has 30 years of experience in commercial business leadership roles, operations and capital project management, intellectual asset development and management, product and process technology development, industrial application research, and academia. He holds 20 US and international patents and has steered multiple projects from concept to commercialization. Prior to joining Conn Center, he has worked at Cargill, Georgia Institute of Technology, Battelle Labs and the Ohio State University.

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