

9th Annual Congress and Expo on

BIOFUELS AND BIOENERGY

April 16-17, 2018 Dubai, UAE



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An update on the global production of cellulosic ethanol and advanced biofuels

During the last ten years the global production of biofuels has increased about five-fold. Biofuels production in 2016 included approximately 23 billion gallons (87 billion liters) of fuel ethanol produced mostly from corn in the US and sugar cane in Brazil, approximately 8 billion gallons (30 billion liters) of biodiesel produced mainly from vegetable oil, animal fat (tallow, lard) or waste frying oil and approximately 1 billion gallons (4 billion liters) of hydrotreated vegetable oil (a drop-in hydrocarbon biofuel also called green diesel and green jet fuel). The year 2016 was an important year because several industrial plants began producing fuel ethanol from cellulosic feedstocks (including switchgrass and corn stover), however less than 1% of the total biofuels were produced from cellulosic feedstocks. This presentation will describe the current status of biofuels, will describe some additional obstacles that will need to be overcome to ensure continued commercial success, and will include some predictions about the future of cellulosic biofuels.

Biography

Sevim Z Erhan has a BS and an MS in Chemical Engineering from the University of Istanbul, Turkey, 1980 and a PhD in Organic-Polymer Chemistry from Western Michigan University in Kalamazoo, Michigan, 1987. She has been with the U.S. Department of Agriculture, Agricultural Research Service (ARS), since 1988. She was a Postdoctoral Associate Research Scientist and Research Leader at the ARS National Center for Agricultural Utilization Research in Peoria, Illinois, from 1988-2008 and then became Center Director of the ARS Eastern Regional Research Center in Wyndmoor, Pennsylvania (2008 to till date). Her research subjects are vegetable oil based industrial products, including printing inks, paints, coatings, lubricants, biodiesel, hydraulic oils and composites. She has authored or coauthored over 250 scientific articles, including 9 U.S. Patents, 2 books, and 25 book chapters. She has been invited to present her research findings at more than 200 national and international scientific meetings. She has received several agricultural research service awards and industrial awards.

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