

Vehicle Technologies Office Newsletter

Director's Corner

Internal combustion engines are going to be a part of our transportation system for years to come. VTO's Advanced Combustion Systems and Fuels Program focuses on early-stage research to improve the understanding of the combustion process, fuel properties, and emission control technologies. As part of this research, VTO works with EERE's Bioenergy Technologies Office on the Co-Optima Initiative.

For a typical American household, transportation costs are second only to housing expenses. The Co-Optima initiative aims to co-develop advanced engine technologies and fuel components to significantly increase fuel economy over today's vehicles. The goal of the research is to provide American industry with the scientific foundation needed to maximize vehicle and fuel performance and efficiency, thereby enabling increased fuel economy and more affordable transportation.

-Michael Berube, VTO Director

Meet the Team:

Gurpreet Singh



The Vehicle Technologies

Office's communications team sat down with Gurpreet Singh, Program Manager for VTO's Advanced Combustion Systems and Fuels Program. The program conducts research in seven focus areas: combustion research, co-optimization of engines and fuels, alternative fueled engines, emission control, advanced lubricants, high efficiency engine technologies, and system level efficiency improvements. [Read our interview with Gurpreet.](#)

Save the Date: 2018 Annual Merit Review

When: June 18-21, 2018

Where: Crystal Gateway Marriott in Arlington, VA

Office Highlights

Co-Optimization of Engines & Fuels: Breakthrough Research in Engine and Fuel Co-Optimization

DOE recently released two studies from the Co-Optimization of Engines & Fuels initiative (Co-Optima). [Fuel Blendstocks with the Potential to Optimize Future Gasoline Engine Performance](#) identifies representative blendstocks that can be blended into gasoline and used in smaller, but more powerful and efficient, spark-ignition engines. The research into fuel property impacts on engine efficiency and performance detailed in this study was guided and informed by a new engine efficiency merit function, or mathematical equation. [Efficiency Merit Function for Spark Ignition Engines](#) documents the development of this merit function and how it can be used to improve the scientific understanding of the dynamic relationship between fuel properties, including octane, and engine efficiency [View the full EERE announcement to learn more about the new studies.](#)



DOE to Issue FOA for High-Performance Computing for Materials Program

The U.S. Department of Energy's (DOE) High-Performance Computing for Materials (HPC4Mtls) program seeks qualified industry partners to participate in short-term, collaborative projects with DOE's national laboratories. These projects will receive funding support from DOE's Office of Fossil Energy (FE), and the Office of Energy Efficiency and Renewable Energy's Fuel Cell Technologies Office (FCTO) and Vehicle Technologies Office (VTO), subject to appropriations. [Read the full announcement.](#)

Revamped Website Features Easier Access to Travel Survey Data, Offers New Datasets

Access to detailed transportation data from travel surveys and studies conducted across the nation just got easier. The revamped Transportation Secure Data Center (TSDC) features a variety of updates that enhance the user experience and increase the scope of data available. [Check out the National Renewable Energy Laboratory press release for more details.](#)

Social Media and Blogs

Breakthrough Fuels-Engines R&D Offers Dramatic Boost in Fuel Savings, Economy, and Energy Security

As global energy demand grows, America needs to keep innovating. Our nation is prospering, and a big part of that is the progress we've made in tapping our diverse wealth of domestic energy resources to keep the lights on, power industry, and fuel cars and trucks. New energy options can create jobs, boost the economy, provide affordable options for consumers, bolster global competitiveness, and improve national security. Co-Optimization of Fuels & Engines (Co-Optima) is creating the science base to enable such development. [Read the EERE blog to learn more.](#)



Three trucks platoon during a demonstration in Virginia.
Photo credit: Department of Transportation

Platooning Trucks to Cut Cost and Improve Efficiency

At first glance, platooning doesn't look like much – just a few tractor-trailers driving down the highway a bit closer together than we're used to. But, what is actually happening is much more complex and presents the opportunity for significant safety, energy efficiency, and cost benefits. Early studies have shown that 65% of current long-haul truck miles could potentially be platooned, reducing total truck fuel consumption by 4%. So, what is platooning? [This recent EERE blog explains the technology and potential benefits.](#)

Reports and Publications

Find more on [VTO's Report & Publications page.](#)

Fuel Blendstocks with the Potential to Optimize Future Gasoline Engine Performance

Fuel Blendstocks with the Potential to Optimize Future Gasoline Engine Performance identifies eight representative high-octane blendstocks across five chemical groups that could be blended into gasoline for better performance. These new blendstocks, co-optimized with advanced gasoline engines, show potential to improve passenger vehicle fuel economy by 10%. [Read this new Co-Optima study.](#)

Efficiency Merit Function for Spark Ignition Engines

Efficiency Merit Function for Spark Ignition Engines documents the development of this merit function and how it can be used to improve the scientific understanding of the dynamic relationship between fuel properties, including octane, and engine efficiency. [Read this new Co-Optima study.](#)

