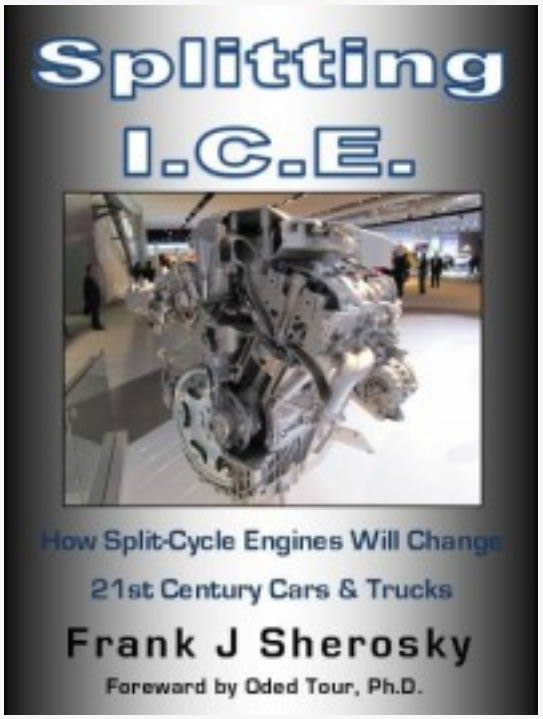
Splitting I.C.E. Author, Frank Sherosky, Challenges High-Cost EV Rationale

WASHINGTON, MI, USA, November 6, 2013 /EINPresswire.com/ -- Calling split-cycle engines “the next evolutionary step in advancing the internal combustion engine (I.C.E.),” author, Frank J. Sherosky, released “Splitting I.C.E.” as a challenge for automakers and government to rethink expensive EVs and plug-in hybrids.



Kindle Edition: Splitting I.C.E. - How Split-Cycle Engines Will Change 21st Century Autos & Trucks

Frank Sherosky, retired design engineer and author of automotive technology articles, released his new Kindle title, “Splitting I.C.E.” as part of his mission to prove that electrification is not the only option for the auto industry to reduce emissions, but split-cycle engines can reduce emissions and meet the 54.5 MPG mandate by 2025.

While the public and many analysts wonder which propulsion system will dominate autos and trucks in their future, Sherosky highlights two key areas with “Splitting I.C.E.”: 1) DOE, IEA, Mobil and BP reports on future energy projections imply that internal combustion engines will still be dominant by 2030; 2) lower-cost, efficiency gains in internal combustion will lead the way.

After 4 years of research and interviews with key developers and engineers at the SAE World Congress, CAR and DEER Conferences near Detroit, Sherosky compared all the facts against the high cost of fully electrified and plug-in hybrid vehicles, and immediately realized the split cycle approach demonstrated sufficient merit to challenge expensive full electrification based on simplicity, present materials and familiar manufacturing.

“Splitting I.C.E.” introduces the technology in light of early automotive history, and defines the detailed basis for building a successful business case for modern OEMs. It also reveals the three companies leading the development; finally presenting vehicle weight reductions and advanced automotive technologies that are on the horizon.

“The government mandate of 2025 surely changed the criteria for all automakers in America”, stated Sherosky. “It may have spurred some to view full electrification as a panacea, even pander to government for development funds, but it also spurred private inventors to advance the next evolutionary step of the internal combustion engine.”

According to the book’s Foreward, written by Oded Tour, Ph.D., “The principal underlying the Discrete Compression Discrete Expansion (DCDE) engine architecture (also known as split-cycle engine architectures) is simple and straightforward: provide the ability to optimize a unique thermal management strategy for compression and a unique thermal management strategy for expansion.”

In simple language, dedicated cylinders segregate the cold strokes from the hot strokes for maximum thermodynamic management, a feat that has not been availed since the four-stroke Otto Cycle was invented over 130 years ago.

Sherosky admits that full acceptance by the automakers of the split-cycle approach is still a work in process, though. The use of similar manufacturing processes, however, is a positive. “It wasn’t that long ago that many executives were deeply entrenched in delivering only minor improvements to the internal combustion engine, avoiding the destruction of existing manufacturing. Then Electric Avenue at the Detroit Auto Show in 2009 seemed to shock and redirect executive entrenchment.”

Analysts admit that the high cost of batteries along with limited driving range of EVs resulted in early rejection by the masses, and that meant diminished profit returns. Now, automakers are realizing that advancing I.C.E. may still be their best bet, at least to 2030. But as Dr. Oded Tour was quoted in the book, "Existing four-stroke engine designs are in conflict with optimization."

“Paradigms are shifting, though,” states Sherosky. “While executives and engineers would barely admit that split-cycle engines existed a few years ago, some are now admitting that they are fully evaluating splitting the I.C.E., even admitting its potential benefits.”

Sherosky’s book is intended to prove the auto industry needs to untie the hands of engine designers. That’s why a book, why now and why so much personal effort to help engage collective discussions.

“This 2025 mandate, albeit a pain for many automakers, is the catalyst that it is driving the auto industry toward greener innovations even with internal combustion,” admits Sherosky. “Sure, electrification and fuel cells may eventually win out, but not before 2030, and not until energy densities of batteries are increased; can handle cold weather, and prices come way down. In the meantime, we must advance the I.C.E.”

Whether split-cycle engines will show up in cars and trucks within the next five years, is an unknown at this time. “One thing for sure,” concludes Sherosky, “the 54.5 MPG mandate for 2025

is fast approaching, and affordability for the masses will still play a deciding factor toward acceptance. So the introduction of an affordable, air-hybrid option with an efficient split-cycle arrangement will surely give full electrification a run for all its subsidized government money."

Available first for immediate download on the Kindle, with free apps for reading on any digital device, including PCs and Android tablets, readers may use Amazon's Free Look Inside feature to preview the Foreward, Preface, Introduction and Table of Contents. A video preview is availed on the author site below.

About Frank Sherosky

Author, Frank J. Sherosky, has been writing articles, books and ebooks since 1997.
Since retirement from the auto industry in late 2008 as a design engineer with Saturn and GM, he has written hundreds of automotive technology articles and video reports, first for Examiner.com and later TorqueNews.com. He considers his personal website, AuthorFrank.com his publishing and communication central.

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